Design and Implementation of a prototype secondary school web portal for Federal University of Technology Minna Staff Secondary School

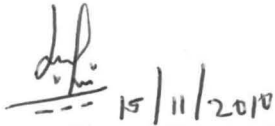Nwafor Anthony Valentine Onyinyechukwu

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A thesis submitted to the Department of Electrical and Computer Engineering Federal University of Technology Minna
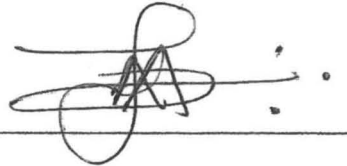
November 2010

DECLARATION

I, Nwafor Anthony Valentine Onyinyechukwu, declare that this work was done by me and has never been presented elsewhere for the award of a degree. I also hereby relinquish the copyright to the Federal University of Technology, Minna.

_15/11/2010_

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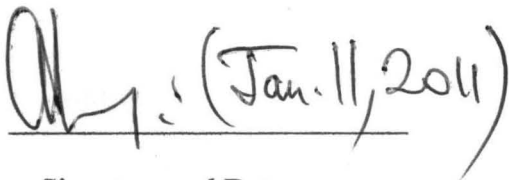_(Project Supervisor)_

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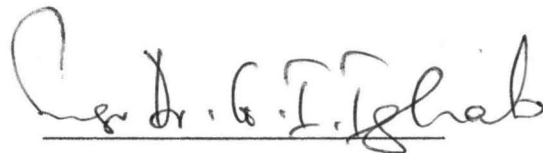Signature and Date

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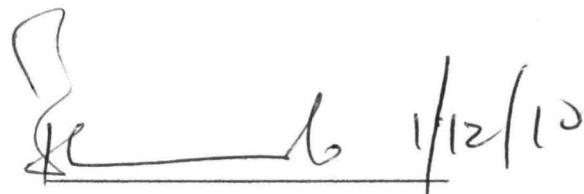
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DEDICATION

This work is dedicated to Almighty God who in his infinite mercy protected and directed me throughout my stay in Federal University of Technology Minna, and to My Parents, Mr. and Mrs. Nwafor and to my brothers and sisters.

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I want to first of all thank the Almighty God for granting me good health and protection throughout my stay in Federal University of Technology Minna most especially in the course of this project work.

The completion of this project was possible, thanks to the cooperation and support of a number of people, for their inestimable investment in my education; God will surely reward you and will help me not fail you.

To my dear parents Mr. and Mrs. Nwafor, and Uncle Mr. Cornelius Nwafor for their moral, love, financial and physical supports to me throughout my educational period.

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Abstract

This project is centered on the development and implementation of a prototype secondary school web portal for Federal University of Technology Staff Secondary School, which is an Online School Management Portal, made up of web applications that automate all manual processes involved in schools management and also eliminates the drawbacks of the present manual process. The design method that was used is the button-up method and the implementation technology is J2EE. The result of this project work was a Secondary School database management with a web user interface.

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CHAPTER ONE

1.1   INTRODUCTION

E-Portal is a powerful web-based interface that allows all teacher access to relevant data from a central source, through secure, password-protected entry. Teachers can access accurate facts about students immediately, managers can access for statutory reports, learners can track their own performance and parents can check their children's progress. It is also used to enter information directly into the database, making it a powerful tool for data management. Registration, changes to the time table and a host of other information can be logged through a PC, laptop or PDA, updating the database immediately and ensuring all information is current [1].

The web-based format makes it possible to have access from any Internet point so our teachers can carry out administrative duties from home if they wish. Password-protection means that the system can identify users and restrict access to authorised areas. Parents will therefore be able to monitor their children's progress, attendance or timekeeping, from work or home, knowing that all personal information is safe from unauthorised viewing. Facility e-Portal is the simple way to manage a variety of administration including lesson by lesson roll call, recording behaviour, monitoring progress, keeping track of resources, performing school self review or preparing termly or annual reports.

This particular project deals with secondary school management and avoids the problem that occurs when carried out manually. Identification of the drawbacks of the existing system leads to the designing of computerized system that will be compatible with the existing system

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and more users friendly. We can improve the efficiency of the system, thus overcoming the following drawbacks of the existing system:

1.   Current paper-based processes can be cumbersome.

2.   Paper applications are expensive and time consuming to print.

3.   Applicants do not always correctly complete these forms and return them on time.

4.   Received paper forms require manual processing, sorting and data entry.

5.   Manual computation of results is time consuming and prone to errors.

6.   It is difficult for management to get an overview of progress.

7.   Low security of data.

8.   Difficult to update data.

9.   Repetition of same procedures.

1.2 AIMS AND OBJECTIVES

Design and Implementation of a prototype secondary school web portal for Federal University of Technology Minna Staff Secondary School, that will;

➢ Eliminate current paper-based processes.

➢ Eliminate paper application.

➢ Improve security of data's.

➢ Avoid repetition of same procedures.

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- ➢ Enable management to get an overview of progress.

- ➢ Eliminate manual processing, sorting and data entry of received paper forms.

- ➢ Eliminate incorrect completion of forms and late submission of completed forms.

- ➢ Provides easy data update.

- ➢ Eliminate manual computation of results.

1.3 METHODOLOGY

In order to achieve the above objectives information were collected from two forms of data, which are:

Primary Data: This consist of data that was collected through observation and interviews with some staff and student of different secondary schools which entails personal interviews and investigations of different factors taken into consideration during secondary schools management. This is important since the proposed software will be used by these staff and students; beside some respondents prefer answering questions so as to be able to explain their points and ideas very well.

Secondary Data: This consists of the exploitation of the services of the library from textbooks, magazines, past project work, internet and other materials related to the study. This will form the bedrock for review of literature of the research.

The design method that was used is the button-up method and the implementation technology is J2EE, J2EE is an acronym that stands for Java 2 Platform Enterprise Edition. It provides a programming platform for developing and running distributed, and multi- tiered architecture java applications. Below are some advantages of J2EE Technology.

1. Componentization:

   a. **Rapid development:** existing components can be put together rapidly to create new application.

   b. **Higher productivity:** fewer developers can achieve more by putting together an application from prebuilt, pretested components rather than starting from the scratch.

   c. **Higher quality:** component based testing instead of the entire application.

   d. **Easier maintenance:** because components are stand alone to begin with, maintenance such as upgrades to individual component is much easier and more cost-effective.

2. It is much secured.

3. It is platform independent.

Generally, J2EE based applications make room for efficiency, accurate operations, transaction control, scalability, security, accountability, distributed multi-tiered architecture, web-enabled, authentication, reduced cost of implementation and greater speed capability.

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The steps taken in designing this project are as follows:

1. Algorithm design.

2. Designing of the flow chart of the program using unified modeling language (UML).

3. Coding.

4. Testing.

1.4 SCOPE OF THE PROJECT

The scope of this project work is to handle the development and implementation of a prototype secondary school web portal for Federal University of Technology Minna Staff Secondary School, which an Online School Management Portal is made up of web an application that automates all manual processes involved in schools management. It identifies stakeholders within the school system and provides functionalities that enable them perform their duties online. Among others the stakeholders include students, teachers, form-master, vice-principal admin, vice-principal academics, principal, management staff, parents, and proprietors. The portal is richly packed with the following features:

Single Sign-On: A user signs on once and has access to all his/her functionalities within the portal.

Easy to Use: The portal provides easy to understand and controllable menus to access the various features provided.

Functionalities: The functionalities of the portal include application for admission by intending candidates, registration of students, Online posting of results by teachers, automatic computation of results, online result checking and printing, Parents view of students details, joining sporting and extracurricular activities by students to mention a few.

1.5 PROJECT OUTLINE

This thesis involved in the "Design of the proposed Federal University of Technology Minna Staff Secondary School eportal" is presented in five chapters as below;

Chapter one presents a general Introduction and Sources of information that aided the design.

Chapter tow present Historical and Theoretical background of related system and also provides a summary of important works in the area of web portal and database management system and how they relate to the e-portal for secondary school management.

Chapter three discusses the Research methodology, System Analysis and Design that is, the computational tools to be used in carrying out the research as well as how the data generated are implemented.

Chapter four gives the result obtained from the implementation of the project and their implication and significance to the overall result of the project.

Chapter five presents the overall conclusion of the project, further recommendations for improvement and problems encounter during the Design of the System.

CHAPTER 2

2.1 HISTORICAL BACKGROUND

Web portals originated from Web search engines in the early 1990s and evolved through Web push technology in mid-1990s to its mature model in the late 1990s, [2]. In its early stages, the Web served as an electronic poster to promote the image of the institution and mainly served as a marketing tool. Institutions competed with each other as to who has the most splashing home page; few viewed the web as a vehicle for accessing and sharing of information. This emerged during the next stage, when organizations realized that the Web is a perfect vehicle to get information not only to external constituents but could be also extremely useful to communicate procedures, common documents to internal constituents. Extra - and Intra - nets emerged, both displaying static information, one targeted for attracting external constituents to the organization and the other for sharing information inside the institution. As the information posted was static, the problem arose: who is responsible for keeping the information up-to-date and synchronized with other web pages after the initial posting.

Portals have been the buzzword of the networked age since 1997, [2]. Portals were so popular in business-to-business and business-to-consumers applications that the business world borrowed an old jingle: "I'm a portal, he's a portal, she's a portal, we're a portal, and wouldn't you like to be a portal, too?" [2], Portal derives from the Medieval Latin word portale, meaning "city gate." American Heritage Dictionary defines a portal as "a doorway or an entrance, or a gate, especially one that is large and imposing." New definitions for portals in the networked environment can be found on many Web sites. A synthesis of these new definitions is as follows:

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A Web portal is a doorway that can be customized by individual users to automatically filter information from the Web. It typically offers a search engine and links to useful pages, such as news, weather, travel, and stock quotes. A portal can also be defined as a customizable Web search engine to reflect the MY trend in current Web development. The platform for a portal Web site is a search engine, but a portal is different from a general search engine in that it can be customized by individuals for automatic, constant search for specific information, and it can deliver the results to individuals in a predefined way. A customizable search engine is unique to the user; it is different from anyone else's.

The very early history of portals used by librarians can be traced back to the 1960s, when the first digital version of Index Medicus was created.

The history of current Web portals can be traced back to the Boolean search technology developed in 1994 and 1995.

1. Due to the exponential growth of Web pages, users cannot locate Web files by conventional means, such as using directories like those in phone books. Search engines offer document content with full-text indexes and direct links to the documents in the Web environment. Initially, most Web users were researchers and educators with high-speed Internet access. They were very excited about the advent of the search engine. Academic librarians all over the country started to offer college-level library instruction courses on Web search engines as early as 1992. When more and more people started to use the Web, not just for research but for entertainment and daily information gathering, it became evident that giving people a complicated search command language to find

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popular information was not efficient. In order to address the average user's frustration and reduce the seek time for relevant information, the search sites added the function of channeling or categorization--filtering popular sites and documents into preconfigured groups. This categorization is a step further from the general Web site; the Web provides broad information for a broad audience and categorization provides narrowed information for a broad audience,[2][3].

2.1.1 Early Portals

The term 'Portal' projected the vision that the web site is an entry point to select relevant information in contrast to the 'general Web' where all information is equally accessible. The term portal was quickly accepted and today it is used liberally by vendors and organizations alike to promote their web site beyond the original Intra - and Extra – nets. However there is more to portals than web sites with relevant contents, they go beyond static web pages and require a sign on which then links to some knowledge the organization has collected about the visitor. That knowledge allows portals to be tailored to meet individuals' needs. In addition portals go beyond the delivery of static information and often provide access to services offered by the organization. Beyond that they offer network services such as email and other collaboration tools and these services often interact with other organization specific applications.

Currently the different types of portals can be classified as:

Public portals: Example: Yahoo. Offer wide range of network services such as email, chat rooms and channels of common interest like the weather or stock market. Users can tailor their homepage by selecting from a set of preset channels and they can add their own links or change the appearance of the portal.

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Vertical portals: focus on a specific industry, and the channels offered are industry specific. For example, an education portal will have channels that provide educational information and services from many resources.

Enterprise portals: provide channels for a single organization, such as a University, and the channels offered are perceived to be of value to that organization's customers. The channels offered link to information or services that are mainly hosted at the organization. As each organization has both internal and external constituents they will feature - static webs - Intra- and Extra-net portals. Many organizations will replace the Window's desktop with their own enterprise portal in the future that will feature services that are commonly used by their constituents, [4].

Portals do not eliminate the former static web pages but will offer those plus information and/or services that are perceived to offer value to the customer. Portals include network enabling services such as e-mail, chat rooms and calendars that interact seamlessly with other applications. Most portals allow for adding personal links as portal providers realize that users may have other interest beyond the organizational boundaries. Personalization will make the portal more appealing to the user or make it: stickier. Many organizations compete now for users to select their portal as the user's homepage. As the web novelty factor has worn off, portals are a means for users to get things done more efficiently and effectively and those portals that offer the best fit will be selected by the user as their 'home' portal.

Portals are a reality today and most organizations have a portal strategy and/or are in the process of implementing a portal. Organizational portals will remain, but eventually portals will become organization independent. As noted earlier, portals are user and not departmental centric. Why should a user choose one organization's portal over another especially where she has a

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wide range of interest. From a user's perspective, the goal is a workspace that gives me access to information and services that are appropriate for a person at any given time in her life.

To that end, portal technology will continue to evolve and existing technologies have to become organization independent:

Directory and application services that are now linked to an organization will become organization independent. Developments for global directory services are already underway as is evident in the UDDI (Internet-based Universal Description, Discovery, and Integration) initiative. UDDI is the building block that will enable users and businesses to quickly, easily and dynamically find information and services independent from organizational boundaries.

Networking services such as email, calendaring, chat, IP-phones, etc. will be more and more hosted by portal providers such as Yahoo, Netscape or AOL instead by organizations. Standards already in place for email need to be defined and adhered to for calendaring and other networking services. It is simply inefficient for every organization to maintain its own network services and keep up with the changing technology. As individuals go through different life stages, it makes little sense to change e-mail addresses when switching jobs or attending different universities.

Office Automation tools like Word Processing and Spreadsheets need to be freed from the Windows constraints and migrate to selectable channels on a portal. It should be transparent whether they run locally or remote. They need to interface with any PC or network applications through standard APIs such as SOAP.

The portal will evolve into the new desktop that can be personalized in any way the user wishes. It will be transparent where the application or service is running or which organization or department is providing the information or services the user needs to get the job done. The power of the portal is that it represents the next and higher level stage in personal computing, liberating the user from the constraints of the PC by providing a truly personalized workspace anywhere, any time and any place.

The new personal It environment will be embodied in a portal that will be Person Centric, by providing personalized access to systems and information from many organizations plus access to desktop systems as chosen by the user.

2.1.2 Database management

Database management systems have existed for thousands of years. However, in the earlier days they were recorded without computers, with crude accounting systems that banks used to over 500 years ago, [4].

However, when most people talk about database management systems, they refer to one of an electronic nature. This is where electromagnetic storage of information takes place and organized and can be recalled later with a set of commands.

At first, database management systems are very crude, as there was always a memory problem with the earlier electronic computers. In fact, Bill Gates was quoted as saying in 1981 that 640K memory ought to be enough for anybody. [4]

Around the 1960s, the earliest of electromagnetic database storage was used only by those who could afford it, because of its extremely high expense. In fact, whereas today databases are used for research purposes, at this time computers were themselves considered a research project.

It wasn't until the 1970s, when memory was able to be increased and component prices began to decrease. It was at this time that a number of different problems started coming up, as related to information management on the computers. With all these problems surfacing, a solution was needed, [4].

In the 1980 all the major vendors who sold hardware systems started incorporating database management systems into their computers for a systematic solution, [4].

At first, these database management systems were very specific to the computer and to the user. IBM was one of the leaders in this category, but soon many clones and competitors entered into the marketplace, all at varying price points with different and alternative solutions.

With the advent of the 90s, the shift turned from having an accurate database management system, to having one that was easily maintainable. This is because memory capacity started to grow, as well as the creation and spread of information. This is when some of the more sophisticated database management systems at the market.

Currently, the focus is on completely automating most of the database management administration.

In fact, since many applications already come with the ability to enforce compliance and monitoring, it is very simple in most cases to implement database automation.

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One of the main benefits of automation is that the information within the database cannot be compromised or even being raised. The fact is that any manual operation of the database will be tracked, with each action taken being logged into the system. So this way the database manager can manually work within the program, but still have a strict and error-free watchdog, to make sure everything is compliant, [5].

There is no other way around it -- database automation is one of the best ways to make sure database administration is functional, uncompromising and accurate. And with proper use of database automation tools, it can reduce the number of tasks that the database administrator has to do. This does not mean the database administrators are no longer required. Instead, repetitive activities once performed our eliminated, and the safety net is put in place to keep the database secure.

As information grows in the database, it becomes more important than ever to look for database automation systems to make sure that you database keeps running smoothly and does not compromise the system or the information that is contained within the database.

2.1.3   E-portal for secondary schools

This electronic web portal is an enterprise portal that provides channels for a single secondary school (Federal University of Technology Minna Staff Secondary school), and the channels offered are perceived to be of value to the students, parents and staff. The channels offers link to information or services that are mainly hosted on the school database. And the project also automates the school database management, making sure:

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➢ That the school database keeps running smoothly and will not compromise the system or the information that is contained within the database.

➢ That the tasks of the database administrator are reduced.

➢ And that repetitive activities performed are eliminated, and the safety net put in place to keep the database secure.

2.2 THEORITICAL BACKGROUND

To go beyond the organizational definition for a portal one could state:

A portal allows me to enter my own data space, a space where I can view and do what I want to do and not what someone else thinks I want or should do. At any time I can change the components of the site as my needs for information and/or services change. It is not any longer someone else's homepage, but my own workspace.

2.2.1 How: Portal Functions and Components

A portal is not a single technology, but it brings together a wide range of technologies and enables them to work together for the benefit of the individual. To present users with information and services that are appropriate at any particular time, portals need to be modular and dynamic. At best, organizations can guess appropriate structures and features for various constituents and then leave it up to each individual to 'personalize' his/her portal. In order to achieve that goal a portal has to provide the following components and /or functions

Channels:

Channels are the Portal's building blocks. They are modules that link to or contain snippets of information or services. Users should be given a library of channels from which they can choose. Not to defeat their own interest, organizations will make certain channels mandatory. Different constituent groups or roles will have different default selection of channels with the understanding that many channels are universal (e.g. mail, calendar. Weather...) and will be available to all groups.

Directory Services:

In order to customize the information for the entering individual, the organization needs to know who the visiting person is. What role does she represent vis-à-vis the organization and what are her preferences and requirements? The more an organization knows about the portal visitor the better it is positioned to present a portal that best meets the individual's needs. Individual information is maintained in the organization directory that also facilitates the sign-on and the person's authentication. Directory services are critical for successful portal deployments. It would go beyond the scope of the portal discussion, but by signing on to the portal, the user should not have to sign on to any application or service accessible through the portal. Having the key to the portal is equivalent to the master key that opens all doors beyond it.

Roles:

As a starting point, organizations have developed default portals for different types of customers such as faculty, students, staff, alumni, parents, future students. These default portals contain information and services that organizations deem to be most attractive to each customer group or role. In addition to providing different channels, the portal design may differ for

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different roles, e.g.: students prefer other layouts and graphics compared to alumni. Roles determine how the portal looks for different audiences. Information about which role a person has is stored in the organization's directory. Upon sign-on, it presents the user with a website that features channels and a layouts that are most appropriate for the role the user represents vis-à-vis the organization.

Customization:

In addition to linking to the organization's directory, portals become even more powerful where they can draw on the wealth of information and logic stored in the organization's ERP system. Through the logic and data embedded in the ERP system it is not only known who is entering the portal but also what that person has to do or can do.

The organization's ERP system has accumulated in its data base valuable information and the ERP system itself contains the logic on how that information should be acted upon. Utilizing that (student cannot register for one course unless she has taken another one) in conjunction with network services allows the portal to deliver intelligent messages to its users.

Next this allows for so called 'smart events': Through electronic mail the ERP system can notify users of tasks they need to perform, take default actions based on agreed rules, or notify them of upcoming events.

The backend information system can be used to deliver information at appropriate intervals or when critical content changed.

Personalization:

Customization may not be sufficient for inducing a person to adapt the organization's portal as his own. Individuals have interest outside the organization and portals therefore need to offer functionality that allows users to personalize their customized portal. At a minimum, individuals should be able add their own links. More advanced portals allow users to change colors, or choose from a library of channels.

Personal Process Management:

As ERP vendors recognized the persuasiveness of the Web, they began to web-enable their applications; this in meant normally: they changed their proprietary GUI forms to web forms. However, the new web enabled applications still followed the same process as the earlier version: the forms and processes of ERP systems were designed to optimize departmental processes. Instead of going physically to the department to perform his business, with web enabled applications the user is now visiting the department virtually, but he is still required to visit each office separately. As the user is at the center of the portal, applications need to be not only being web enabled but reengineered with the user at the center. The processes have to be turned upside down, instead of being optimized for the department they now have to be designed to be most convenient for the user. Instead of the user visiting the department's site, the various departments now reach out to the user and offer the right services in the sequence and time most appropriate for the visiting person.

Scenario driven customization: takes users through an entire process. Portal technology allows us to look at a process how the user would perform it and becomes a delivery vehicle for services offered by multiple departments, [6].

Portal technology for the first time integrates disparate technologies and transforms them to seamlessly serve the user. These technologies include but are not limited to: directory services, organizational applications and/or ERP systems, general network utilities such as electronic mail and calendaring, and information access and delivery. Not any longer are these technologies separate entities run and controlled by various departments but through the portal they worked harmoniously together to serve the person entering the portal. The portal is the corner stone of a truly user centered IT environment.

Portals can exploit information assets that were accumulated over years in the organization's ERP systems and convert them into value added services by levering the logic of the ERP systems. These services and information are delivered via network tools such as email or calendar. Portal technology can alert users about actions that need to be taken based on information the organization knows about the user, otherwise known as Business intelligence: based on business rules embedded in the ERP, information is delivered to the right person or actions are taken. With backend integration and single user sign on, organizations can now mass customize initial role portals by displaying information and adding services unique to the person. For example, the portal will greet the user by name and if it is a student, display her course schedule. It will remind the visitor of upcoming events or impending actions. But most importantly, it puts the user in control; she can view and act whenever she wants.

The paradigm change initiated through portals includes but are not limited to:

➤ Instead of processes optimized for a department they are now optimized for the user, by integrating backend systems with network services the portal delivers value based services in a timely fashion.

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➢ The portal becomes a service delivery agent. Network services are used to transform applications into services.

➢ The portal unlocks the data and logic of the organization's ERP system and makes it available to the person entering the portal.

➢ Portals allow for self-services and eliminate tasks otherwise done by backend office staff while at the same time increasing customer satisfaction with the level of services provided. While in reality the level of services is less – the customer enters her own data, registers himself for a course the level of services perceived is higher.

University have a distinct advantage over other organizations when it comes to creating value added portals that users are likely to stay with: Universities more than any other organization have accumulated vast knowledge about their users in their ERP systems. They continue to collect information after graduation. This wealth of information combined with patterns of behavior can be used to deliver information and services to users that are extremely valuable.

Organization independent

Users will not be tied to organizational portals but can build their own by choosing components they like from various organizational portals. Organizations that provide the greatest utility to their customers will have greater presence on personal portals than others

➢ Offer a wide range of library of websites, tools and systems

➢ Use single generic e-mail box to which all messages are forwarded.

➢ Use universal directory for authentication: UDDI

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> Populate personal calendar from multiple websites (organizations) e.g.: a former alumni wants his calendar automatically populated with events from his alma mater, events from the organization where he is employed and with events from his community

> Allow for creating electronic groups from multiple organizations replace the WINDOWS desktop Have access to a choice of PC or network based applications and systems.

> Offer of local or remote storage.

> Allow people to extend use of the Web from Information gathering to perform individual processes: Buy, Learn, services, [6]

CHAPTER THREE

SYSTEM ANALYSIS AND DESIGN

Systems design is the process or art of defining the architecture, components, modules, interfaces, and data for a system to satisfy specified requirements.

The steps taken in the design of this School portal are as follows:

i.   The School portal Algorithm was designed.

ii.   Designing of the Secondary School portal model was done using data flow diagrams.

iii. Identifying /Designing the functional requirement of the school portal system were also done using Unified Modeling Language (UML).

iv.   The School portal UML was then transformed into code (J2EE) with the help of netbeans text editor.

v.   Finally the testing of the system

3.1   Algorithm Design

Algorithm

In mathematics, computer science, and related subjects, an *'algorithm'* is an effective method for solving a problem expressed as a finite sequence of instructions. Algorithms are used for calculation, data processing, and many other fields. (In more advanced or abstract settings, the instructions do not necessarily constitute a finite sequence, and even not necessarily a sequence; see, e.g., "nondeterministic algorithm".)

3.1.1 Model for the Software using dataflow Diagram

Data flow diagrams - DFD (also called data flow graphs) are commonly used in analysing problem, DFD shows the flow of data through a system. In modeling the Data flow diagrams (DFDs) for this school portal the basic Data Flow Diagram symbols was used.

Data Flow Diagrams are composed of the four basic symbols shown below.

An activity. A title for the activity should be placed inside the rectangle.

Data flow. Arrow should be labeled with the name of the data moving between the activities.

A file or store. A straight line connects the file to the activity that accesses the file. The name of the file should be indicated within the rectangle.

A source or recipient. A label should be placed within the oval.

Fig. 3.1 Basic symbols for data flow diagram

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STUDENT

| 1 | Login Authentication |
| Verified that your pin code is authentic |

DATA BASE

STUDENT

| 2 | Application |
| Apply for common entrance |

| 1 | Login Authentication |
| Verified that your password is correct |

| 2 | Student Web page |
| Registration, Fees payment and Student activities |

VICE PRINCIPAL ADMIN

| 1 | Login Authentication |
| Verified that you are the vice principal admin |

DATA BASE

| 2 | VP Admin web page |
| V.P Admin roles and activities |

VP ACADEMIC

| 1 | Login Authentication |
| Verified that you are the vice principal academics |

DATA BASE

| 2 | VP Academics page |
| Vice Principal's academics roles |

1 2 3 4 5 6 7 8 9 0

```
TEACHER  →  ┌─────┬──────────────────────┐      ┌──────────────┐
            │  1  │ Login Authentication │  →   │  DATA BASE   │
            ├─────┴──────────────────────┤      └──────────────┘
            │     Verified that you are  │
            │  a teacher                 │
            └────────────┬───────────────┘
                         ↓
            ┌─────┬──────────────────────┐
            │  2  │   Teacher Web page   │
            ├─────┴──────────────────────┤  ←
            │     Teacher roles and      │
            │  activities                │
            └────────────────────────────┘

FORM     →  ┌─────┬──────────────────────┐      ┌──────────────┐
MASTER      │  1  │ Login Authentication │  →   │  DATA BASE   │
            ├─────┴──────────────────────┤      └──────────────┘
            │     Verified that you are  │
            │  the Form master           │
            └────────────┬───────────────┘
                         ↓
            ┌─────┬──────────────────────┐
            │  2  │  F. master Web page  │
            ├─────┴──────────────────────┤  ←
            │     Form master roles      │
            │  and activities            │
            └────────────────────────────┘

PRINCIPAL → ┌─────┬──────────────────────┐      ┌──────────────┐
            │  1  │ Login Authentication │  →   │  DATA BASE   │
            ├─────┴──────────────────────┤      └──────────────┘
            │     Verified that you are  │
            │  the principal             │
            └────────────┬───────────────┘
                         ↓
            ┌─────┬──────────────────────┐
            │  2  │  Principal Web page  │
            ├─────┴──────────────────────┤  ←
            │     Principal's roles and  │
            │  activities                │
            └────────────────────────────┘

PARENT   →  ┌─────┬──────────────────────┐      ┌──────────────┐
            │  1  │ Login Authentication │  →   │  DATA BASE   │
            ├─────┴──────────────────────┤      └──────────────┘
            │     Verified that you are  │
            │  the parent                │
            └────────────┬───────────────┘
                         ↓
            ┌─────┬──────────────────────┐
            │  2  │   Parent Web page    │
            ├─────┴──────────────────────┤  ←
            │     Parent roles and       │
            │  activities                │
            └────────────────────────────┘
```

5 7 9
6 8 0

9
0

Fig. 3.2 Data Flow Diagram for Modeling of the proposed FUTM Staff Secondary School portal.

3.1.2 Unified Modeling Language (UML)

The UML is the standard language for visualizing, specifying, constructing, and documenting the artifacts of a software-intensive system. It is a designing tool used in object oriented problem solving. It can be used with all processes, throughout the development life cycle of software, and across different implementation technologies.

The UML combines the best of the best from

    i.   Data Modeling Concepts (Entity Relationship Diagrams).

    ii.   Business Modeling (work flow).

    iii.   Object Modeling.

    iv.   Component Modeling, [10]

In this thesis, the UML modeling elements like actors (stick figures) and communication lines was used to link the actors in the use case diagrams, which describes what a system does from the standpoint view of an external observer. The emphasis is on what system does rather than how. Actors are simply roles that people or objects play in the program.

The Use Case Diagram for e-portal system is shown below.

Fig. 3.3 The proprietor

View library

View sport/club activities(and their regular activities)

View All Students(based on criteria)

View Notice

All Teacher's role

post notice

View All Staff(based on criteria)

Principal

Update Personal Profile

View payment Reports(based on criteria)

view Personal profile

view Student Result

Expell Students

View Time Table(per class)

View Student result(per class,individual)

View All Expelled Students

Fig. 3.4 The principal

myschoolportal1_0

viewWard's personal Record

ViewPayment Status

viewTime Table

update password

Check Results

ViewNotices

parents

Viewlist of clubs/sports joined by ward

Fig. 3.5 The parent

32

myschoolportal1_0

restore suspension

All principal roles except expell students

suspend Students(add coulmn to students profile)

Clears Students during Admission

Modify Admission List

Vice Principal Admin

View Application list(print them)

Admit/ Clear applicants

Fig. 3.6 vice Principal Admin

myschoolportal1_0

Fig. 3.7 Portal Admin

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Fig. 3.8 Portal Admin Local

```
myschoolportal1_0
```

create Portal Admin

Remove Portal Admin
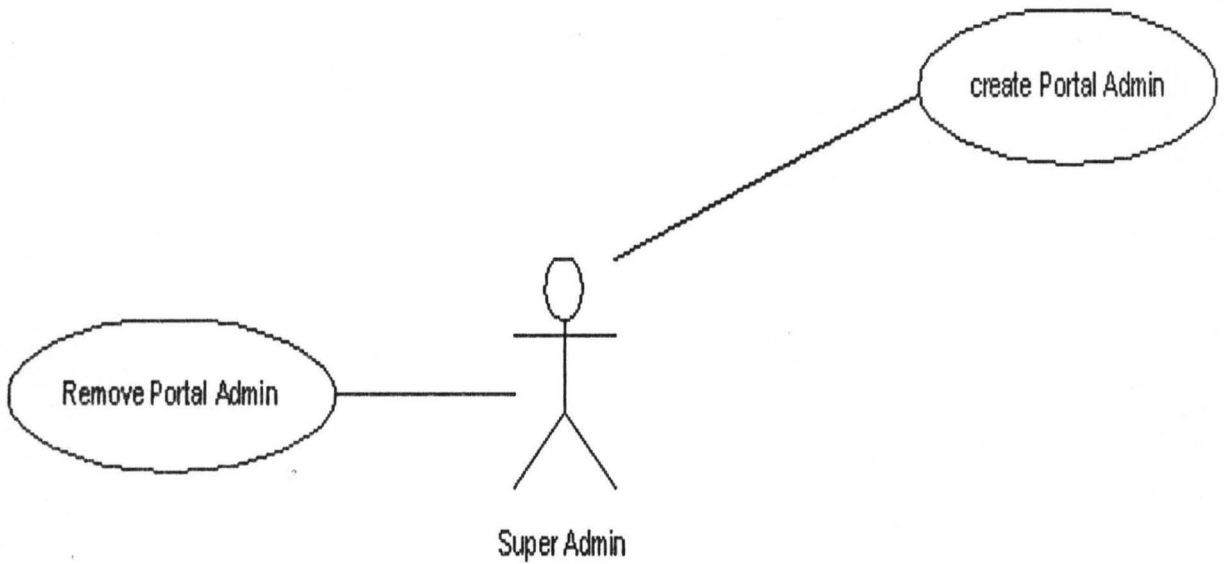
Super Admin

Fig. 3.9 Super Admin

Fig. 3.10 Liberian

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Fig. 3.11 Student

38
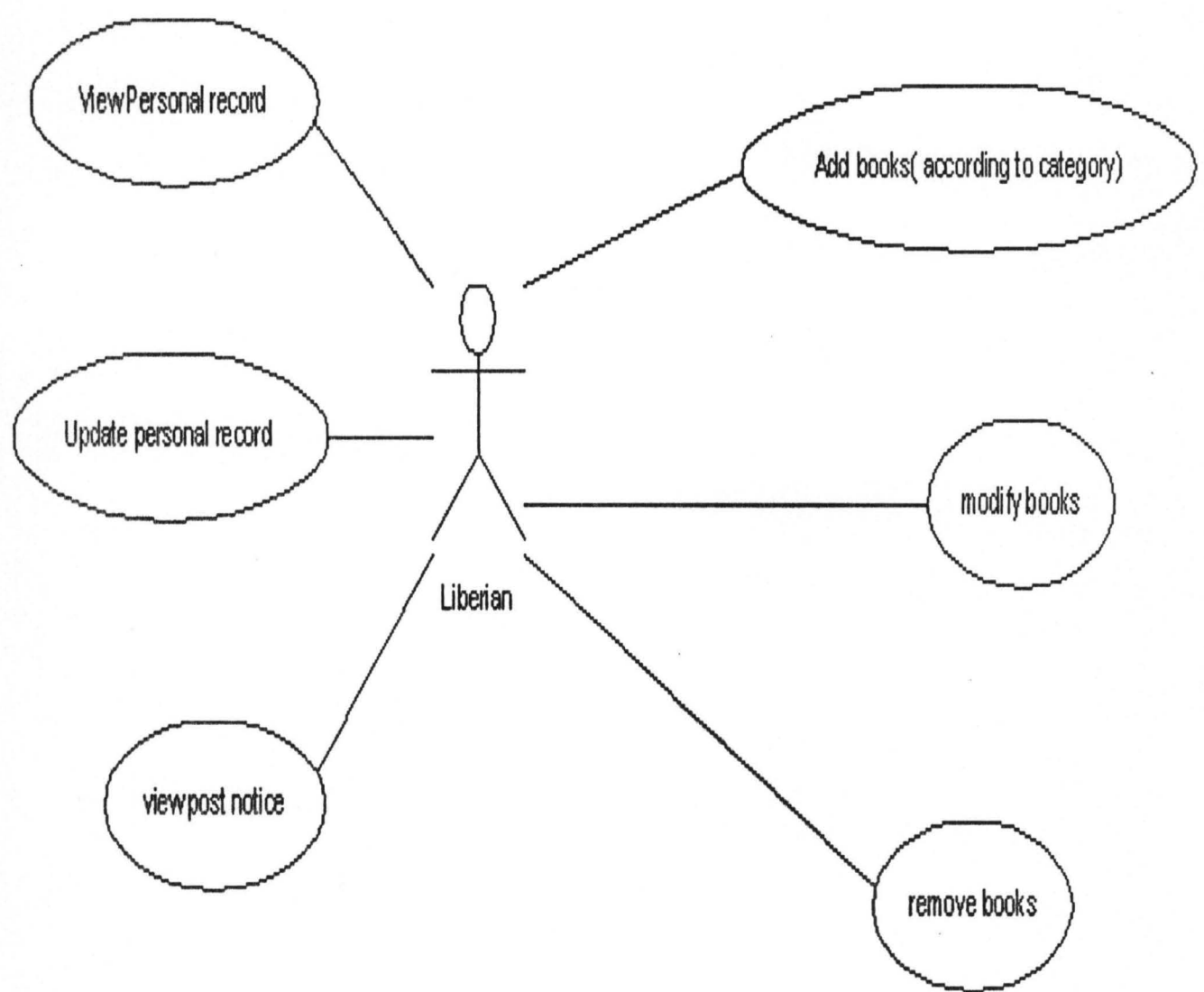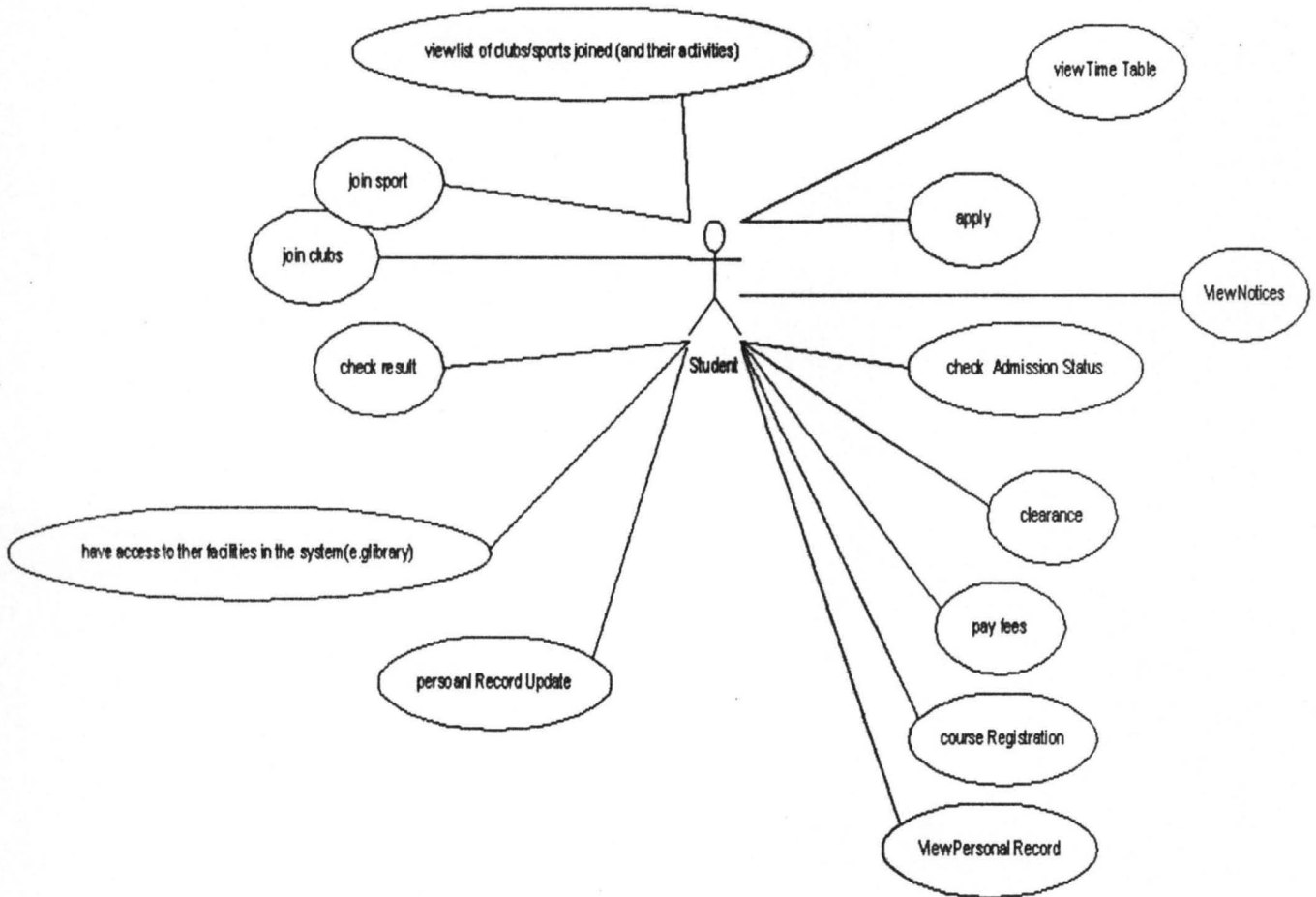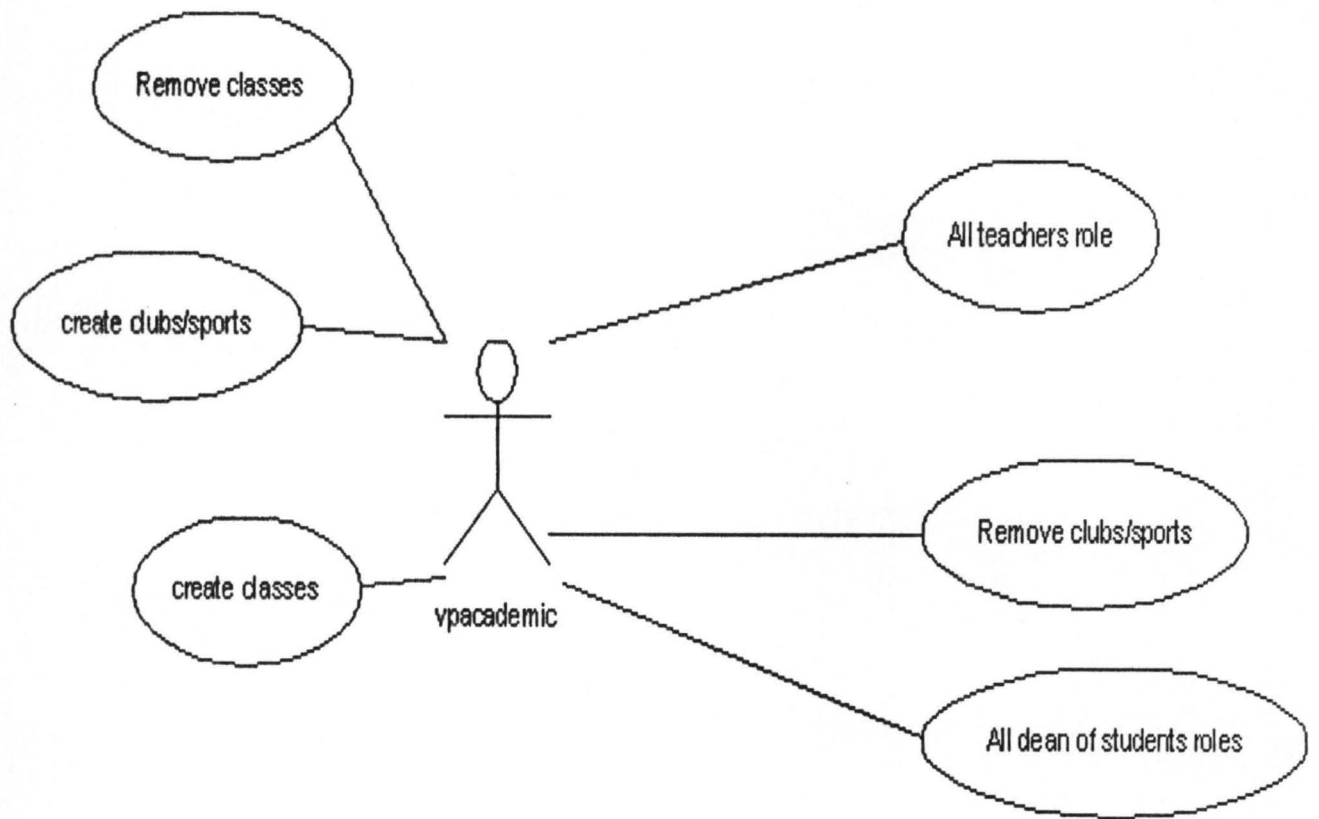
Fig. 3.12 VP Academic

Fig. 3.13 Teacher

myschoolportal1_0

Compute Results

All Techear Functionalities

form master

update Results

View Students in his/her clas
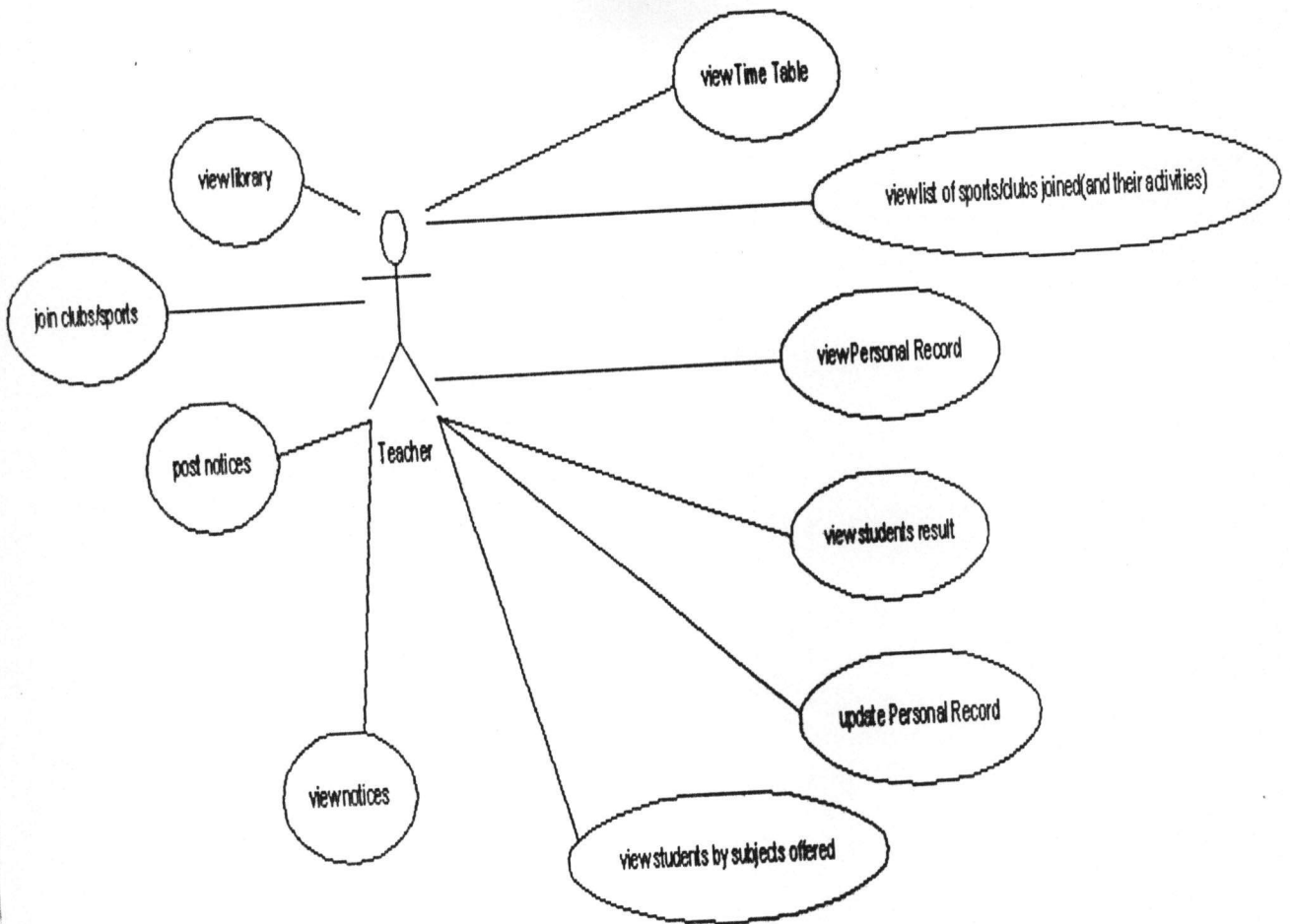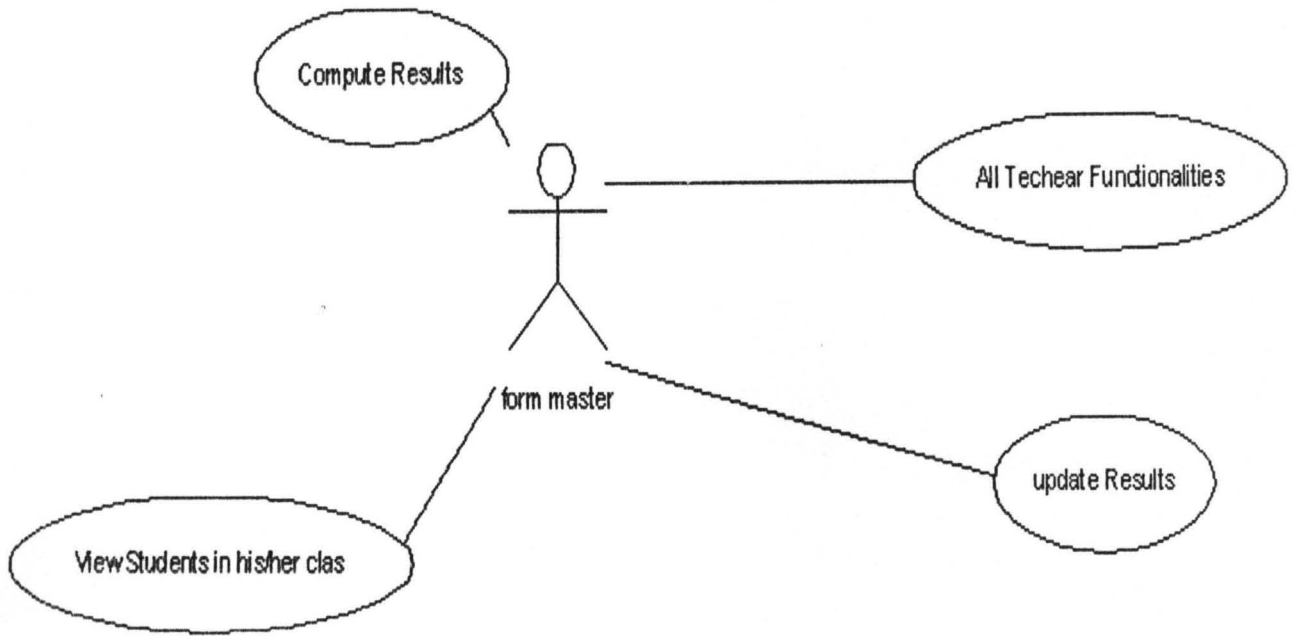
Fig. 3.15 Form Master

3.2 Basic requirements for developing this software

The basic requirement for development of this e-portal includes;

    i.   Java Development Kit (JDK).

    ii.   Basic Java Programming Skill.

    iii.   Netbean IDE (Java Compiler).

    iv.   MYSQL Server.

    v.   JBOSS Server.

    vi.   Macro Media Dream Weaver.

    vii.   Patience (Human Requirement).

3.2.1 MYSQL Database

SQL is an acronym that stands for structured query language, SQL supports a small but very powerful set of statements for manipulating, managing and protecting data stored in a database.

For example, SQL describes what data to retrieve, delete, or insert, rather than how to perform the operation. The first item we need to define is a database.

Simply, a database is a collection of data arranged for ease and speed of search and retrieval. In SQL server, a database is a collection of objects and data that is grouped together logically. Another item to define is table. A table is a physical representation of some object, either real or imaginary. It is also seen as an orderly arrangement of data, especially one in which the data is arranged in columns and rows in an essentially rectangular form, [8].

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A query is a question or a request. With MySQL, we can query a database for specific information and have a record set returned.

SQL is basically divided into two components namely:

Data definition languages (DDL) which include:

1. Create database/tables.

2. Alter database /tables.

3. Rename database/tables.

The second is data manipulation languages (DML) which include;

1. Update

2. Insert,

3. Select and

4. Delete.

3.2.2 Database Design for a prototype Secondary School web portal for Federal University Technology Minna Staff Secondary School

The data in the system has to be stored and retrieved from database. Designing the database is part of system design. Data elements and data structures to be stored have been identified at analysis stage. They are structured and put together to design the data storage and retrieval system.

The general objective is to make database access easy, quick, inexpensive and flexible for the user. Relationships are established between the data items and unnecessary data items are removed. Normalization is done to get an internal consistency of data and to have minimum redundancy and maximum stability. This ensures minimizing data storage required, minimizing chances of data inconsistencies and optimizing for updates. The MYSQL database has been chosen for developing the relevant databases.

The following are the tables that are involved in the proposed system.

Table 3.1 Database structure holding the Administrator's details

Field Name	Data type	Description
Serial_number	Integer	Primary key
Surname	Varchar(45)	Name of the user
First Name	Varchar(45)	User's first name
Rank	Varchar(45)	Official title
Phone Number	integer	
Email address	Varchar(45)	
Contact address	Varchar(45)	Means of contact
User name	Varchar(45)	

Table 3.2 Database structure holding Admission details

Field Name	Data type	Description
Serial number	integer	Primary key
Start range	Varchar(45)	
End range	Varchar(45)	
Last range	Varchar(45)	

Table 3.3 Admitted Student Database structure holding Student's details

Field Name	Data type	Description
Application number	Integer	Primary key(Auto_increment)
Surname	Varchar(45)	Student's surname
First name	Varchar(45)	Student's first name
Middle name	Varchar(45)	Student's middle name
Sex	Varchar(45)	Male/female
Date of birth	Integer	Student's date of birth
Local Gov. Area	Varchar(45)	Student's LGA
Nationality	Varchar(45)	Student's nation
Class admitted	Varchar(45)	Student's class
Category	Varchar(45)	Group

Medical report	Varchar(45)	Report from hospital
Hospital choice	Varchar(45)	
Hospital phone number	Integer	
Sponsor name	Varchar(45)	
Sponsor phone number	Integer	
Sponsor address	Varchar(45)	
Contact address	Varchar(45)	
Email address	Varchar(45)	
Passport		
Session	Integer	Period of admission
Status	Varchar(45)	Single/married
Application		
Registered		

Table 3.4 Database structure holding Applications details

Field Name	Data type	Description
Application number	Integer	Primary key(Auto_increment)
Surname	Varchar(45)	Family name
First name	Varchar(45)	Individual's name
Middle name	Varchar(45)	Individual's middle name

Sex	Varchar(45)	Male/female
Date of birth	integer	
Local Gov. Area	Varchar(45)	
Nationality	Varchar(45)	Nation
Class admitted	Varchar(45)	
Category	Varchar(45)	Group
Medical report	Varchar(45)	
Hospital choice	Varchar(45)	
Hospital phone number	Integer	
Sponsor name	Varchar(45)	
Sponsor phone number	Varchar(45)	
Sponsor address	Varchar(45)	
Contact address	Varchar(45)	
Email address	Varchar(45)	
Passport		
Session	integer	
Class sought	Varchar(45)	
Last class	Varchar(45)	
Pin code	Varchar(45)	
Declaration	Varchar(45)	
Admitted	Varchar(45)	
Used pin	Varchar(45)	

Status	Varchar(45)	
Registered	Varchar(45)	

Table 3.5 Category Database structure

Field Name	Data type	Description
Serial number	integer	
Class status	Varchar(45)	

Table 3.6 Class Database structure

Field Name	Data type	Description
Class code	Varchar(45)	
Class status	Varchar(45)	

Table 3.7 Class subject Database structure

Field Name	Data type	Description
Serial number		
Class code	Varchar(45)	

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Subject code	Varchar(45)	

Table 3.8 Club activities Database structure

Field Name	Data type	Description
Serial number	Integer	
Day	Varchar(45)	
Club ID	Varchar(45)	
Session	Varchar(45)	Period of academic
Time of actvity	Varchar(45)	

Table 3.9 Clubs Database structure

Field Name	Data type	Description
Club code	integer	
Club name	Varchar(45)	

Table 3.10 Database structure that holds all comment made

Field Name	Data type	Description
Serial number	integer	
Reg. number	Varchar(45)	
Term	Varchar(45)	
Session	Varchar(45)	
Form teacher	Varchar(45)	
Principal	Varchar(45)	
Parent	Varchar(45)	

Table 3.11 Continuous assessment Database structure

Field Name	Data type	Description
Serial number	integer	
Term	Varchar(45)	
Session	integer	Teaching period
Class code	Varchar(45)	
Subject	Varchar(45)	
CA 1 position	Varchar(45)	
CA 2 position	Varchar(45)	
CA 3 position	Varchar(45)	
CA 1,2,3 position	Varchar(45)	

Exams position	Varchar(45)	
Reg. number	Varchar(45)	

Table 3.12 Exam body Database structure

Field Name	Data type	Description
Serial number	integer	
Exam body	Varchar(45)	

Table 3.13 Expulsion Database structure

Field Name	Data type	Description
Serial number	integer	
Class status	Varchar(45)	

Table 3.14 External exam Database structure

Field Name	Data type	Description
Serial number	integer	
Reg. number	Varchar(45)	

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Exam number	Varchar(45)	
Subject code	Varchar(45)	
Score	integer	
Grade	Varchar(45)	
Year of exam	Varchar(45)	
Exam type	Varchar(45)	

Table 3.15 External exam grade Database structure

Field Name	Data type	Description
Serial number	integer	
Grade	Varchar(45)	

Table 3.16 Fee registration Database structure

Field Name	Data type	Description
Serial number	integer	
Class	Varchar(45)	
Session	integer	
Term	Varchar(45)	

Table 3.17 Interview date Database structure

Field Name	Data type	Description
Serial number	integer	
Session	Varchar(45)	
Interview date	Varchar(45)	

Table 3.18 Local Government Area Database structure

Field Name	Data type	Description
Code	Varchar(45)	
LGA	Varchar(45)	
State	Varchar(45)	

Table 3.19 Next term Database structure

Field Name	Data type	Description
Serial number	integer	
Class status	Varchar(45)	

Table 3.20 Notice Database structure

Field Name	Data type	Description
ID	Varchar(45)	
Notice	Varchar(45)	
Posted date		
Expiring date		

Table 3.21 Parent Database structure

Field Name	Data type	Description
Parent ID	Varchar(45)	Parent identification
Surname	Varchar(45)	User's surname
First name	Varchar(45)	User's first name
Middle name	Varchar(45)	User's middle name
Sex	Char(45)	Sex
Date of birth	integer	
LGA	Varchar(45)	User's LGA
State	Varchar(45)	User's state
Nationality	Varchar(45)	User's country
Phone	integer	

Table 3.22 Parent request Database structure

Field Name	Data type	Description
Student ID	Varchar(45)	Student's identity
Parent ID	Varchar(45)	Parent's identity
Date of request	Varchar(45)	

Table 3.23 Payment request Database structure

Field Name	Data type	Description
Serial number	Integer	
Student ID	Varchar(45)	Student's identification
Term	Varchar(45)	Division of academic year
Session	Varchar(45)	Teaching period
Date of birth	Varchar(45)	
Request status	Varchar(45)	Payment condition

Table 3.24 Promotional average Database structure

Field Name	Data type	Description
Serial number	integer	
Category	Varchar(45)	Group
Average		

Table 3.25 Prospectus Database structure

Field Name	Data type	Description
Serial number	`	
Item	Varchar(45)	
Status		

Table 3.26 Registered student Database structure

Field Name	Data type	Description
Application number	Integer	Primary key(Auto_increment)
Surname	Varchar(45)	Room number
First name	Varchar(45)	
Middle name	Varchar(45)	

Sex	Varchar(45)	
Date of birth	Integer	
Local Gov. Area	Varchar(45)	
Nationality	Varchar(45)	
Class admitted	Varchar(45)	
Category	Varchar(45)	
Medical report	Varchar(45)	
Hospital choice	Varchar(45)	
Hospital phone number	integer	
Sponsor name	Varchar(45)	
Sponsor phone number	integer	
Sponsor address	Varchar(45)	
Contact address		
Email address		
Passport		
Session		
Current class		
Current session		
Disciplinary status		
Applicant		
User		
Parent		

Admitted student		

Table 3.27 School calendar Database structure

Field Name	Data type	Description
Serial number	`	
Date of event	Varchar(45)	
Event		

3.2.3 Macromedia Dreamweaver

The Design of this school's portal Java Sever Page (JSP) was done using the visual editing features in Dreamweaver (A professional HTML editor for designing, coding, and developing websites, web pages, and web applications) it quickly creates pages without writing a line of code. All the site elements or assets was viewed and dragged from an easy-to-use panel. The result will be seen in chapter four of this thesis.

3.2.4   JBOSS Sever

INSTALLATION

Setting up a local web server (using JBOSS AS)

Using JBOSS AS for Windows, These creates a complete development environment with the ingredients such as Apache, MySQL, Java, JSP and various extensions for various years.

JBOSS AS can be downloaded from http://www.jboss.org/jbossas/downloads.html as zip archives for various operating systems. Also, the entire installation can be removed from the computer with one mouse click without leaving a trace.

Steps in configuring JBOSS

Step 1: Right click on "my computer " and select properties,
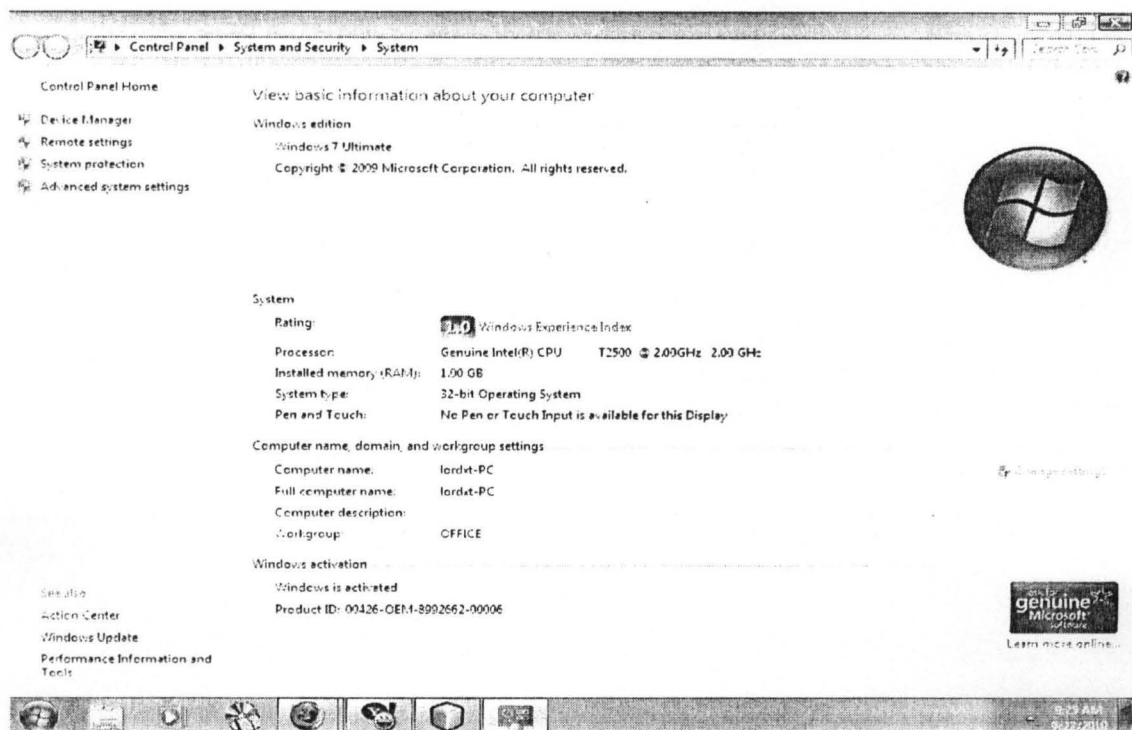

Fig.3.15 System properties page

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Step 2: select advance system settings
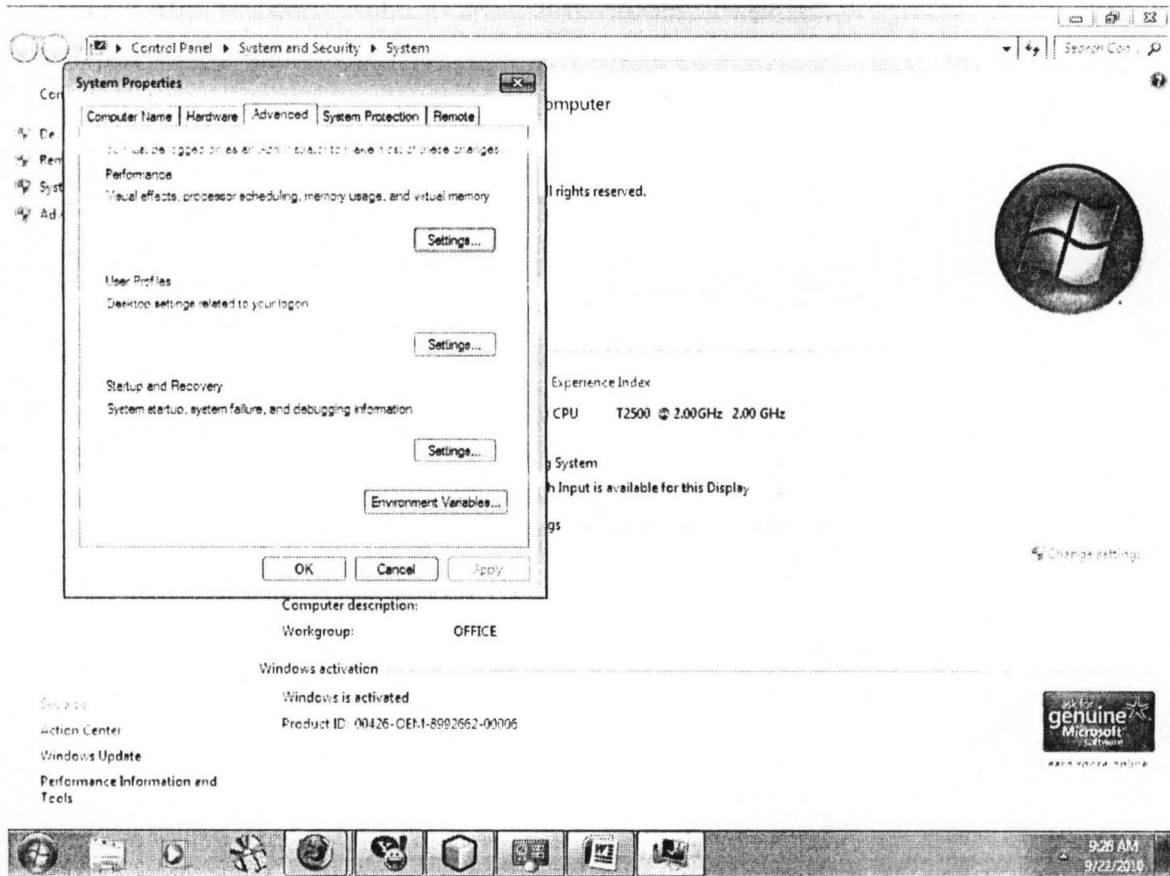
Fig. 3.16 Advance sittings page

Step 3: select environment variables
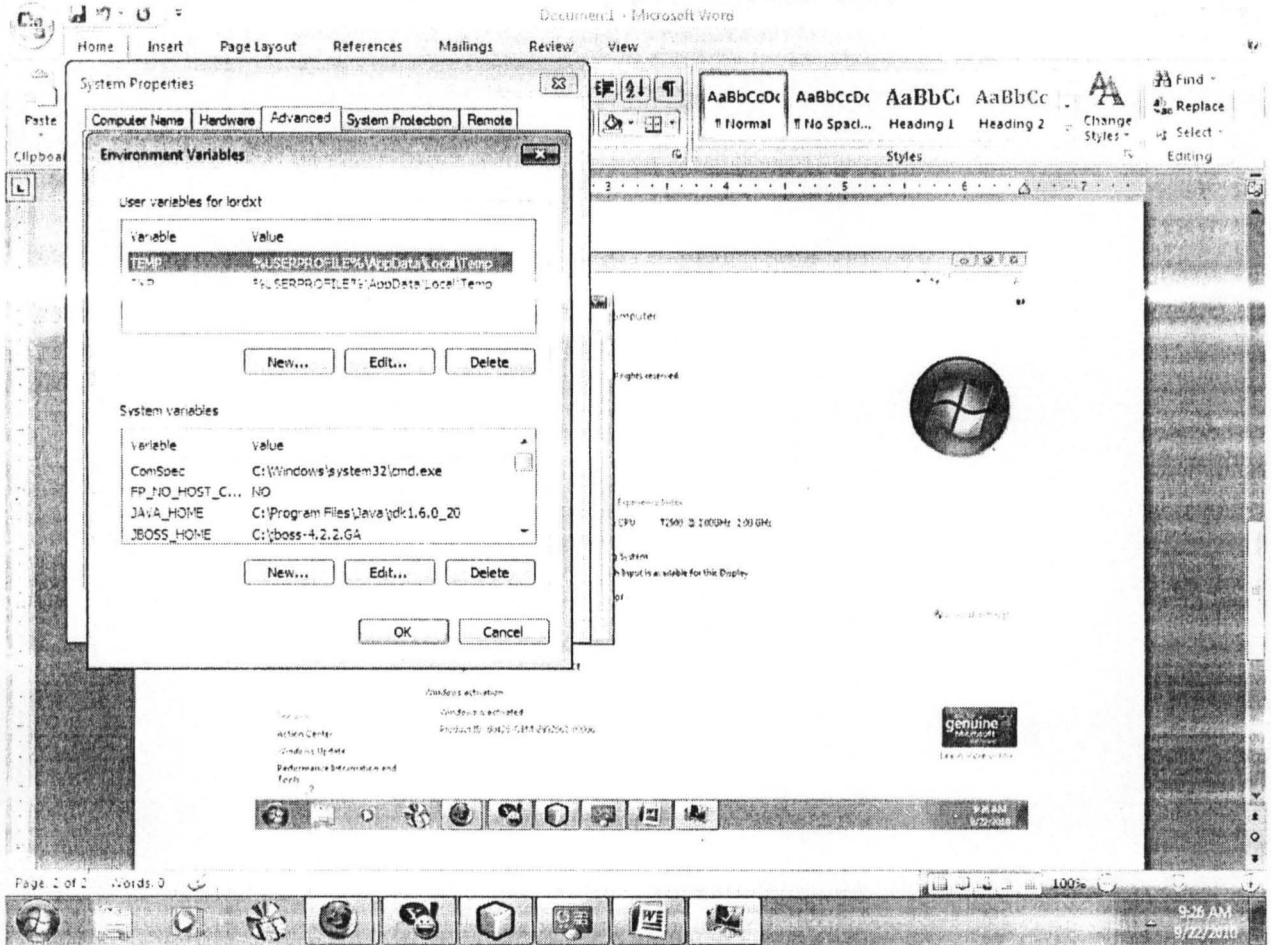
Fig. 3.18 Environment variable page

Step 4: select new and type JBOSS_HOME in the name, copy the path for your JBOSS and paste it in the value and ok it.
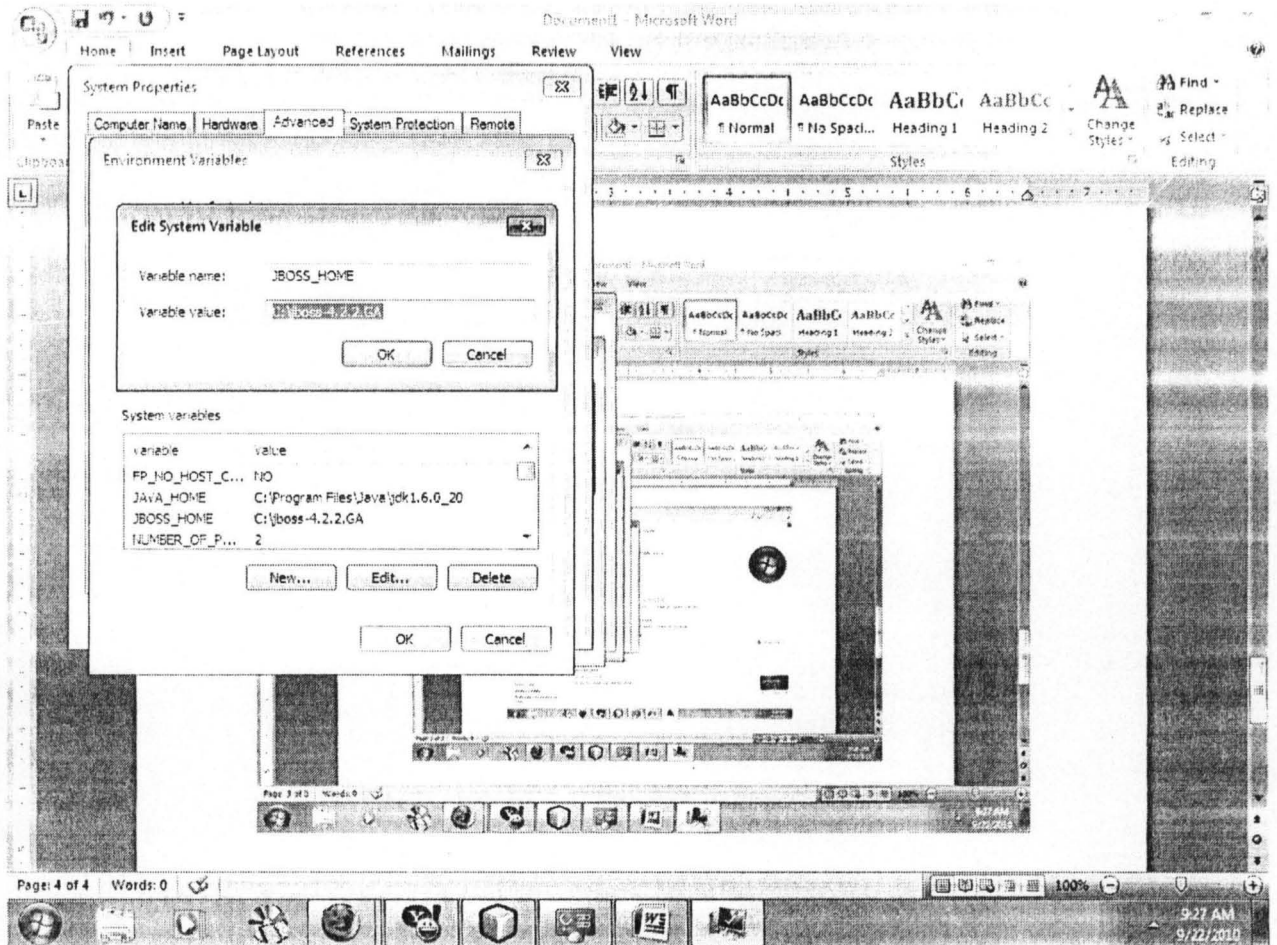
Fig 3.18 System variable page (JBOSS_HOME)

Step 5: select new and type JAVA_HOME in the name, copy the path for your jdk path and paste

it in the value and OK it, and OK all.

Fig. 3.19 System variable page (JAVA_HOME)

Step 6:

Now go to the database create a database and give it "msp". Open the folder of the project and you will see dist folder, Open the dist folder and you will see a file with this name: myschoolportal.ear. Copy the file.

Now go to JBOSS folder, open the folder and you will see something like this:

Fig. 3.20 JBOSS folder page

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Double click on the server folder to open, double click on default folder to open, double click on deploy folder to open and Right-click on "mysql-ds" and open it with WordPad:


```
<?xml version="1.0" encoding="UTF-8"?>

<!-- $Id: mysql-ds.xml 63175 2007-05-21 16:26:06Z rrajesh $ -->
<!-- Datasource config for MySQL using 3.0.9 available from:
http://www.mysql.com/downloads/api-jdbc-stable.html
-->

<datasources>
  <local-tx-datasource>
    <jndi-name>MySqlDS</jndi-name>
    <connection-url>jdbc:mysql://localhost:3306/hum</connection-url>
    <driver-class>com.mysql.jdbc.Driver</driver-class>
    <user-name>root</user-name>
    <password>terungwa</password>
    <exception-sorter-class-name>
org.jboss.resource.adapter.jdbc.vendor.MySQLExceptionSorter
</exception-sorter-class-name>
    <!-- should only be used on drivers after 3.22.1 with "ping"
support
    <valid-connection-checker-class-name>
org.jboss.resource.adapter.jdbc.vendor.MySQLValidConnectionCheck
er</valid-connection-checker-class-name>
    -->
    <!-- sql to call when connection is created
    <new-connection-sql>some arbitrary sql</new-connection-sql>
      -->
    <!-- sql to call on an existing pooled connection when it is
obtained from pool - MySQLValidConnectionChecker is preferred
for newer drivers
    <check-valid-connection-sql>some arbitrary sql</check-valid-
```
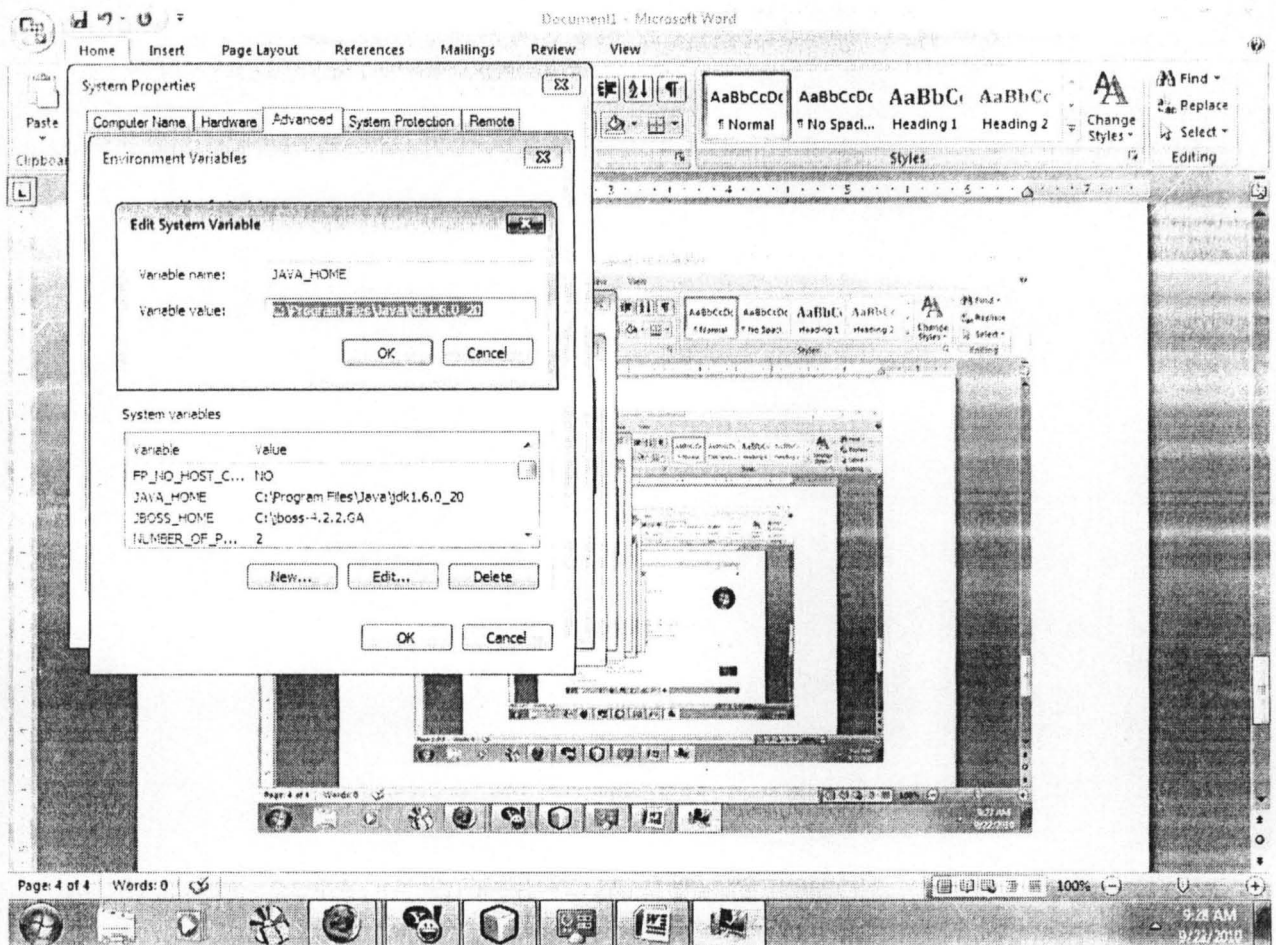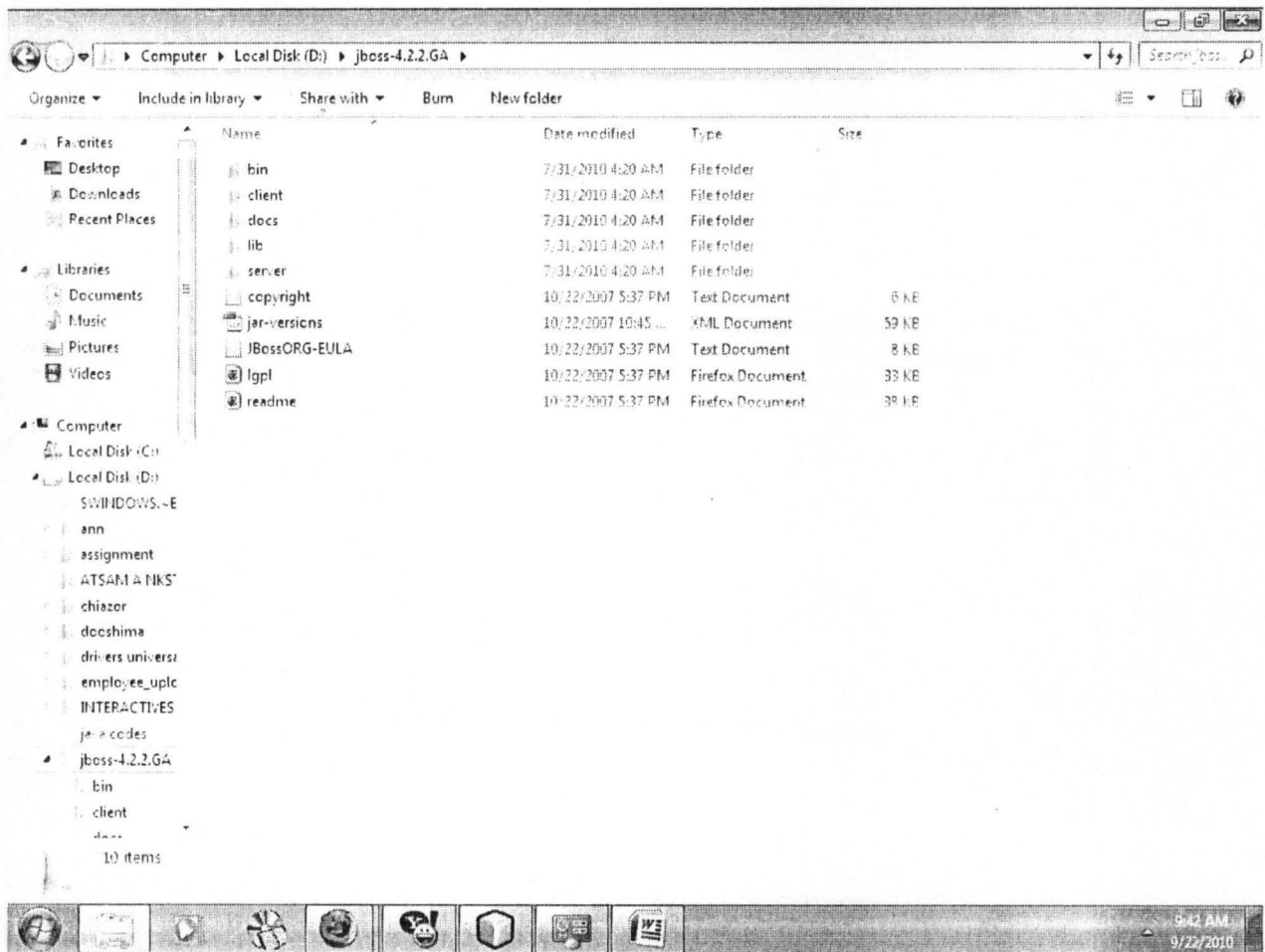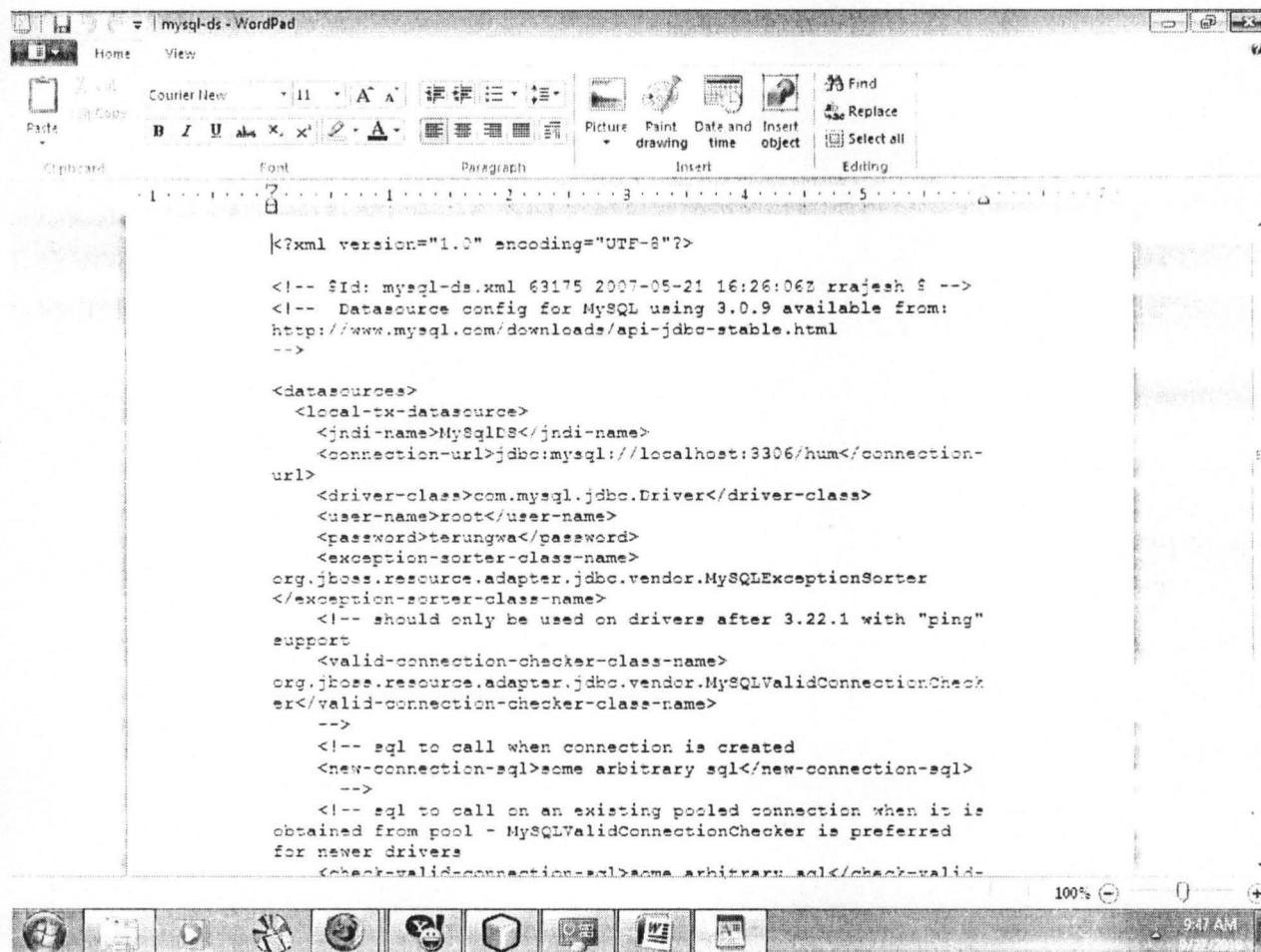
Fig 3.21 mysql-ds page

<password>[type the password of your database here]</password>

In the wordpad file and save it. Then close the wordpad file.

Now go back to the deploy folder and paste file you copied from the project i.e."Myschoolportal.ear" file.

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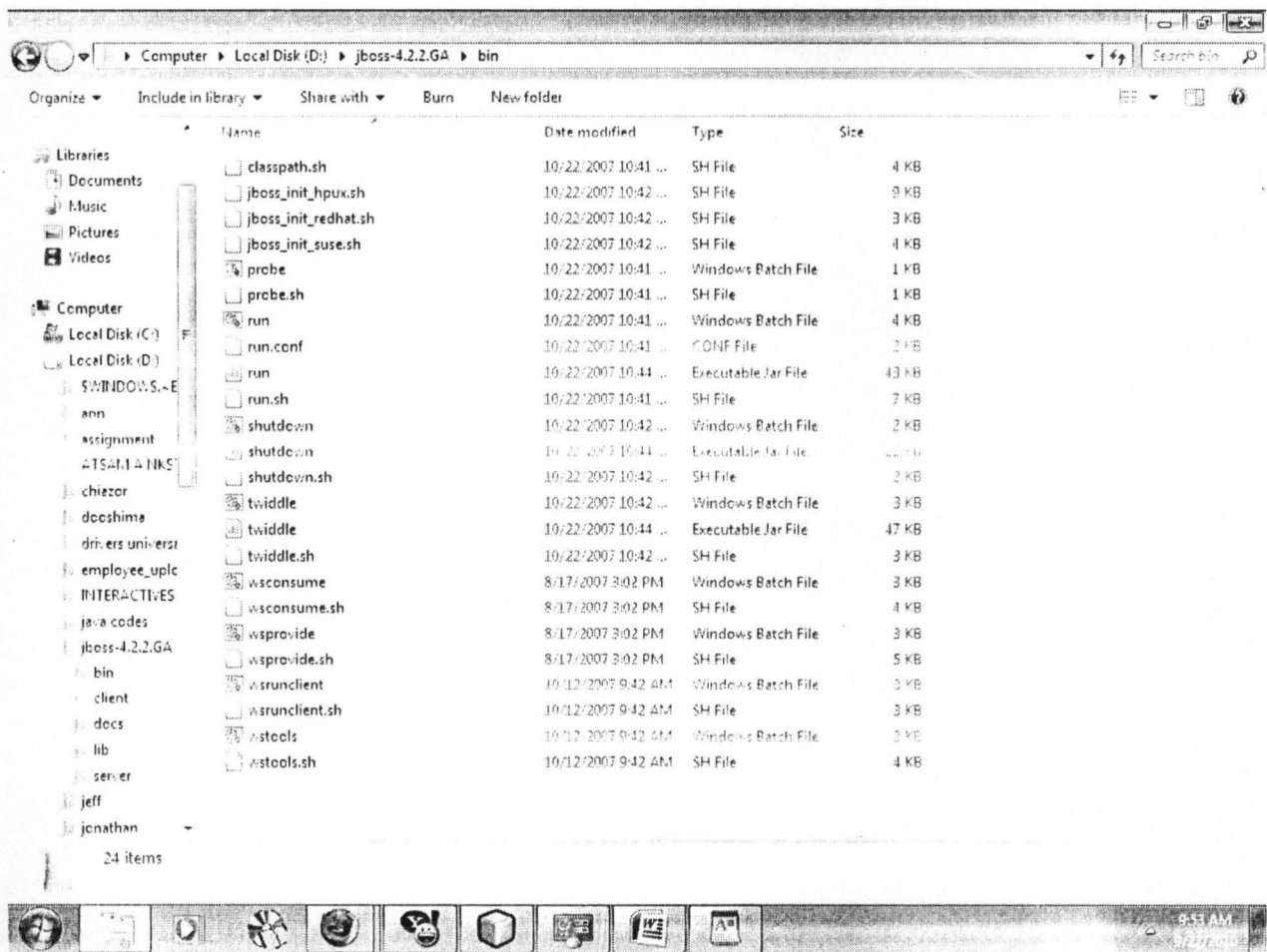Go back to the JBOSS folder and double click on the bin folder to open:

Fig 3.22 JBOSS bin page

Double-click on the first run and the jboss will start running. After it might have finished, launch

your browser and type http://localhost in the address bar press enter button on your keyboard.

CHAPTER FOUR

The school portal is divided into 2 portion with 13 sections; The students, teachers, form-masters, Liberian, vice principal admin, vice principal academics, principal, proprietor, portal admin head, portal admin local, super admin alumni and parents sections.

4.1 TEST

Being a web based application, this project would only require a web browser to be available on the client's workstation and based on the fact that it could run on multi-platforms. The following are tested and suitable operating systems for the application:

i.   Microsoft windows 1998, 2000, ME, XP, Microsoft Vista and Windows 7

ii. Unix/ Linux Flavored Operating Systems

iii. Sun Microsystems

iv. Apple Macintosh

It also supports multiple browsers such as:

i.   Opera7.5 and higher

ii. Mozilla Firefox 2.0.5 and higher

iii. Internet explorer 6 and higher

iv. Flock

v.   Safari

4.2 RESULTS

After running the sever (JBOSS), the web browser was launched and the address http://localhost was typed in the address bar and launched, the following web page displayed.
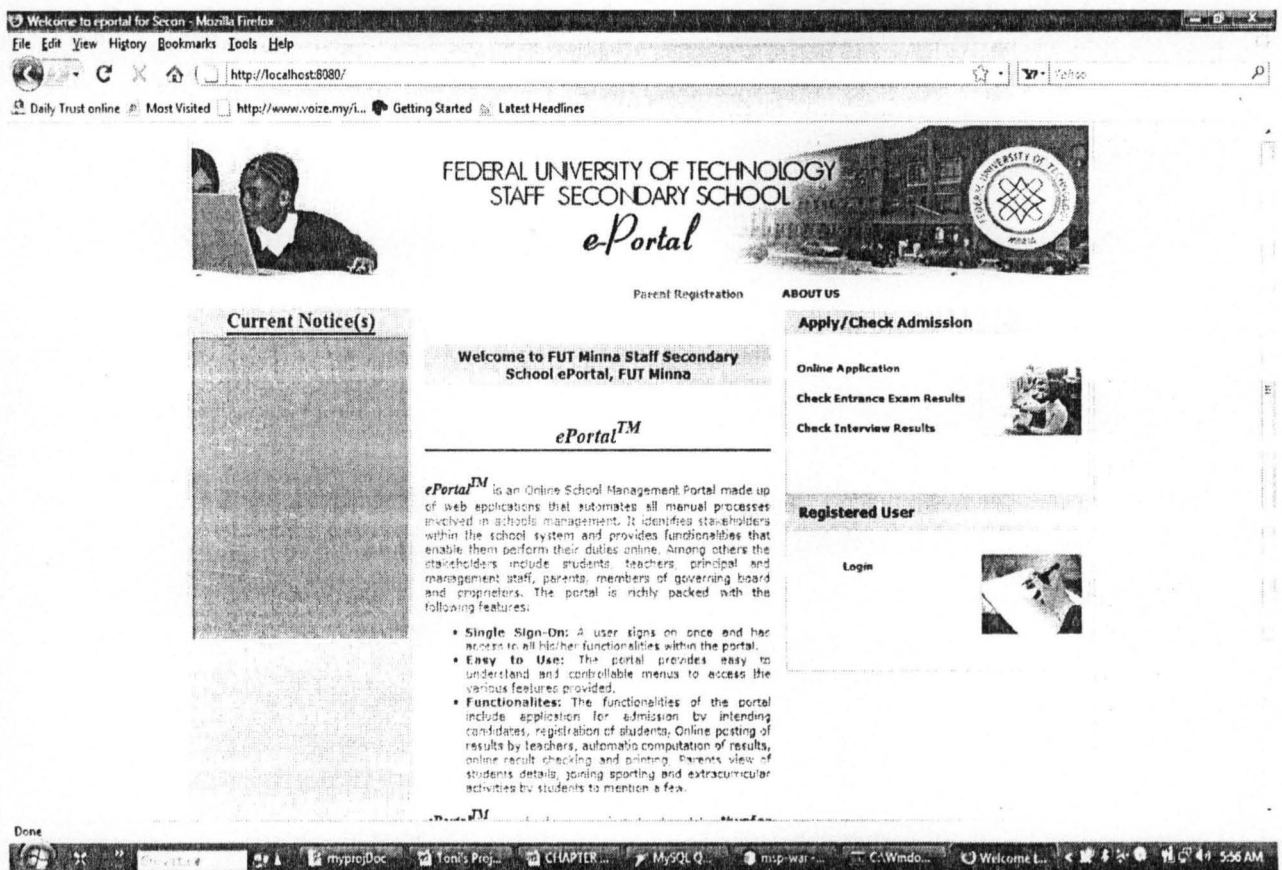
The Front Page

Fig. 4.1 Front Page

4.2.1 The Student Portion

The Student applying will required to provide the following information; Session applying for, Class applying for and Pin code that must be obtained from the School or Bank.

Fig. 4.2 Student online Application page

After providing the above information the student will be required to complete the following Form.

Fig. 4.3 Application Form to be completed by the Student

On completion of the Form he/she is suppose to summit the completed Form
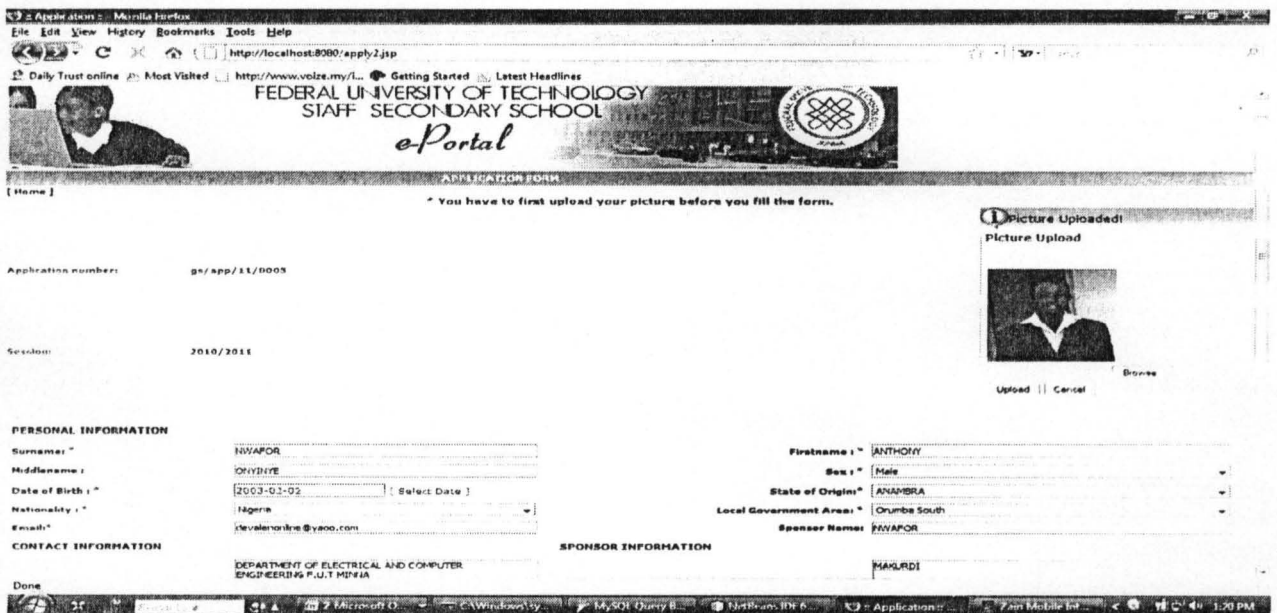
Fig. 4.4 Completed Application Form

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FEDERAL UNIVERSITY OF TECHNOLOGY
STAFF SECONDARY SCHOOL
e-Portal

[Home]

To check your results in the entrance examination, enter your
pin code and your application number in the spaces provided to
the right.

Application no: gs/app/11/0005

Pincode: 755555786061

Submit
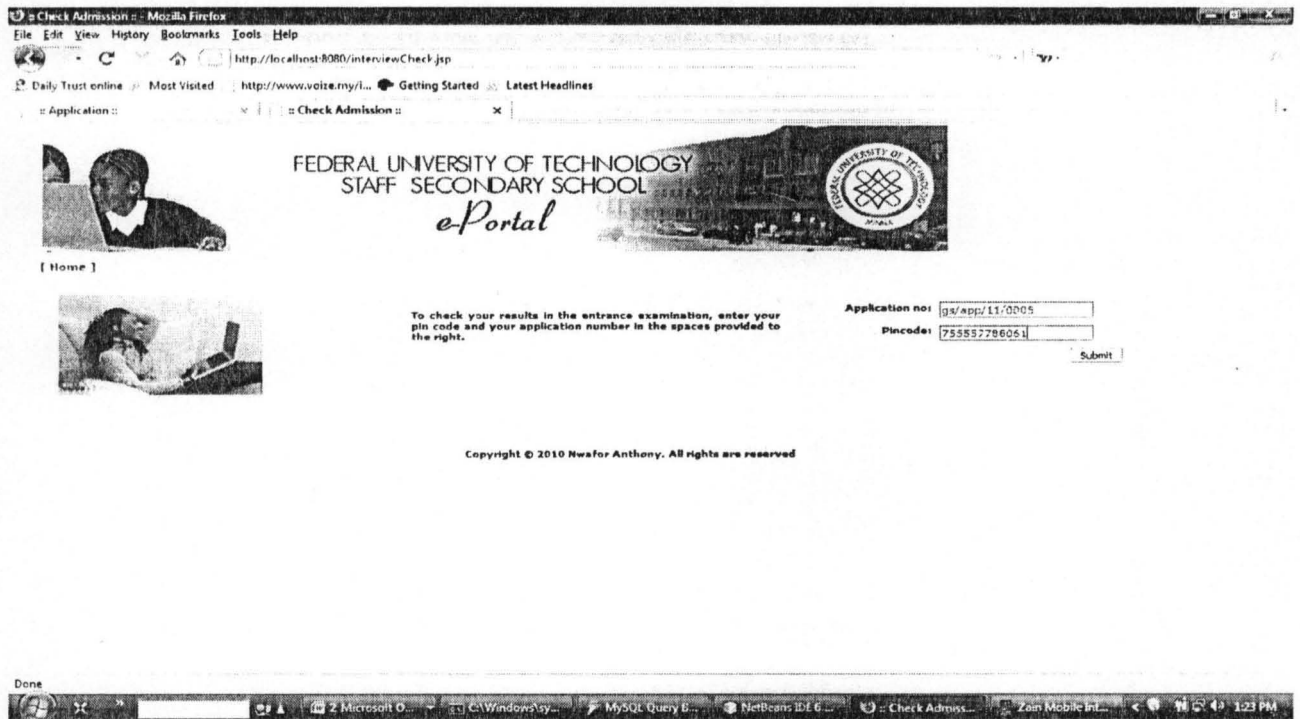
Fig. 4.5 Check of entrance exams results

FEDERAL UNIVERSITY OF TECHNOLOGY
STAFF SECONDARY SCHOOL
e-Portal

[Home] [Pay Fees]

elcome to Federal University of Technology Minna, Staff Secondary School. Congratulations on your addmis
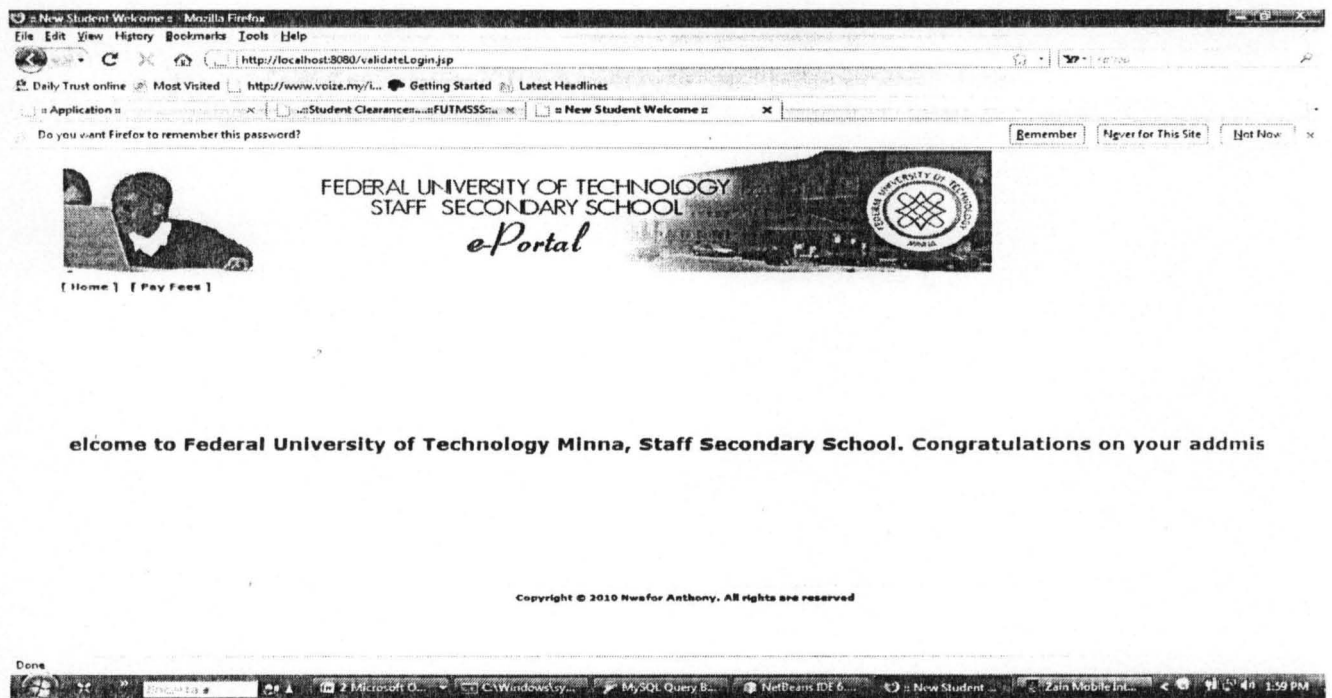
Fig. 4.6 Admitted Student congratulation web page

Fig. 4.7 Registered Student profile page

Fig. 4.8 Registered Student Time Table

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4.2.2 The Administrative Portion

An Administrator with authentic login identity can login and perform his/her functions.

Fig. 4.9 Principal Profile page

Admissions process web pages
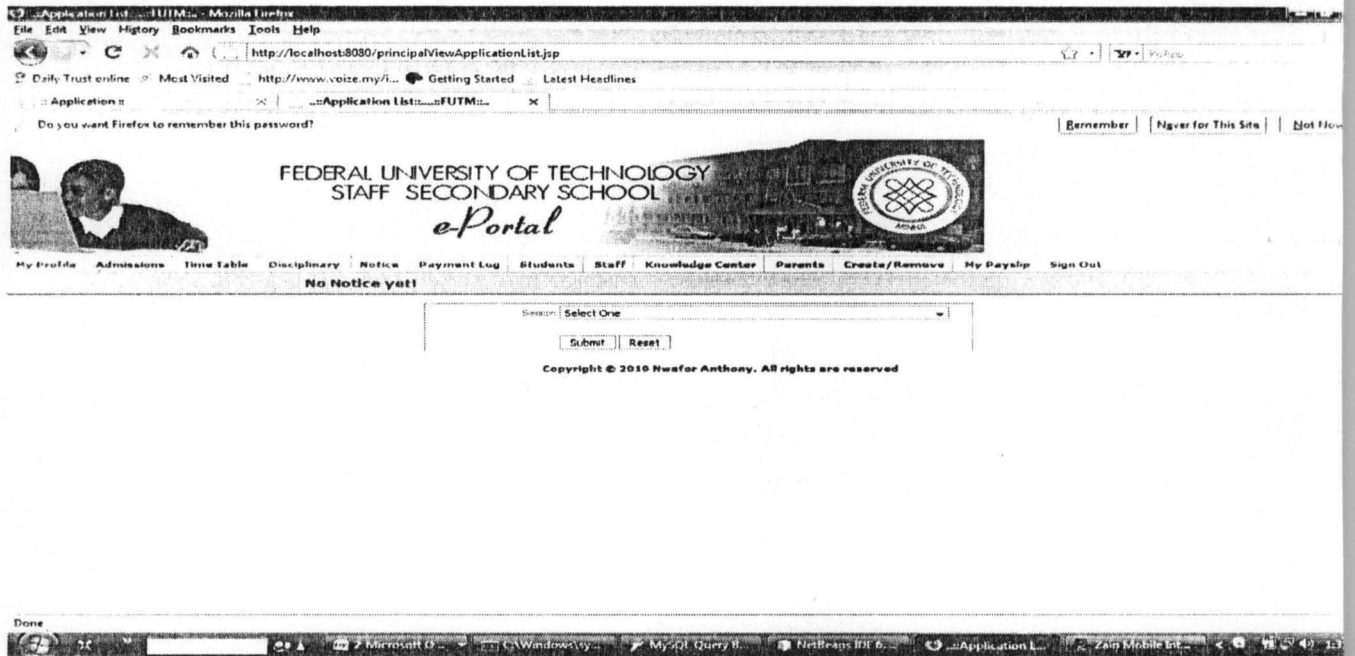
Fig. 4.10 Checking of Application list web page
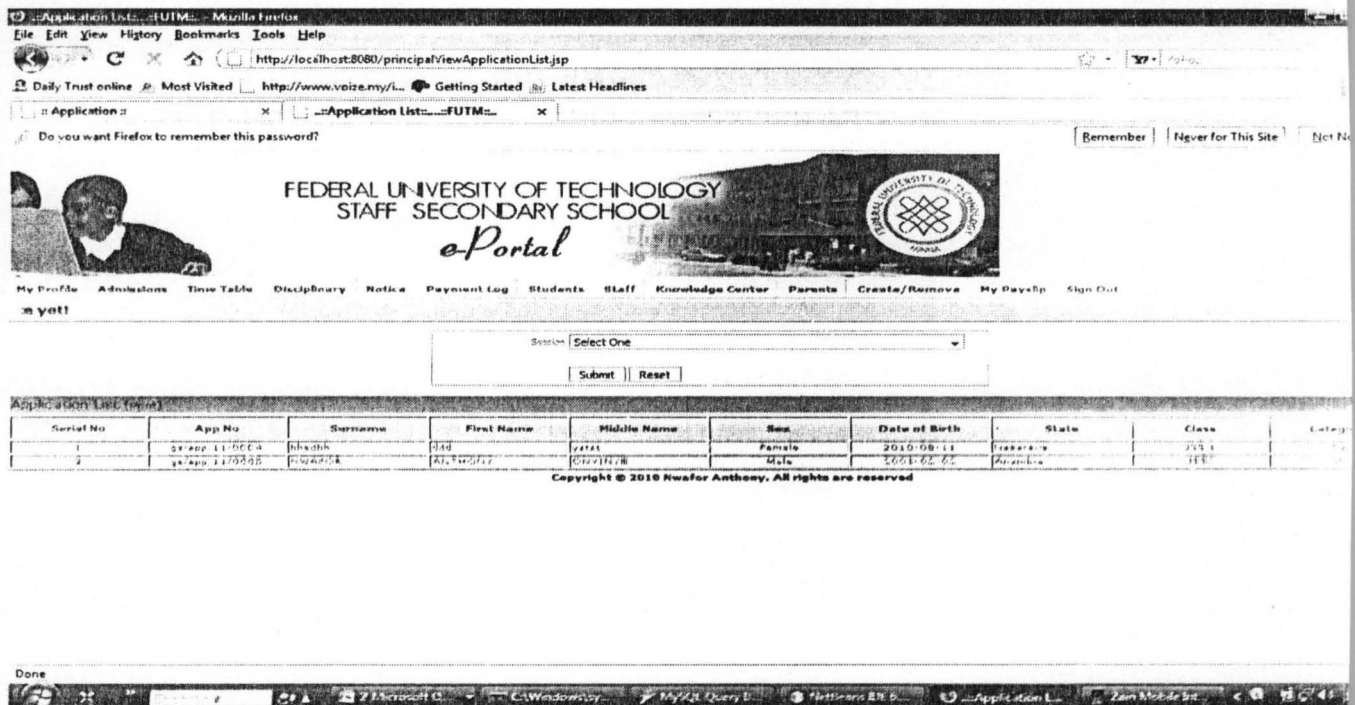
Fig. 4.11 List of applied Student web page
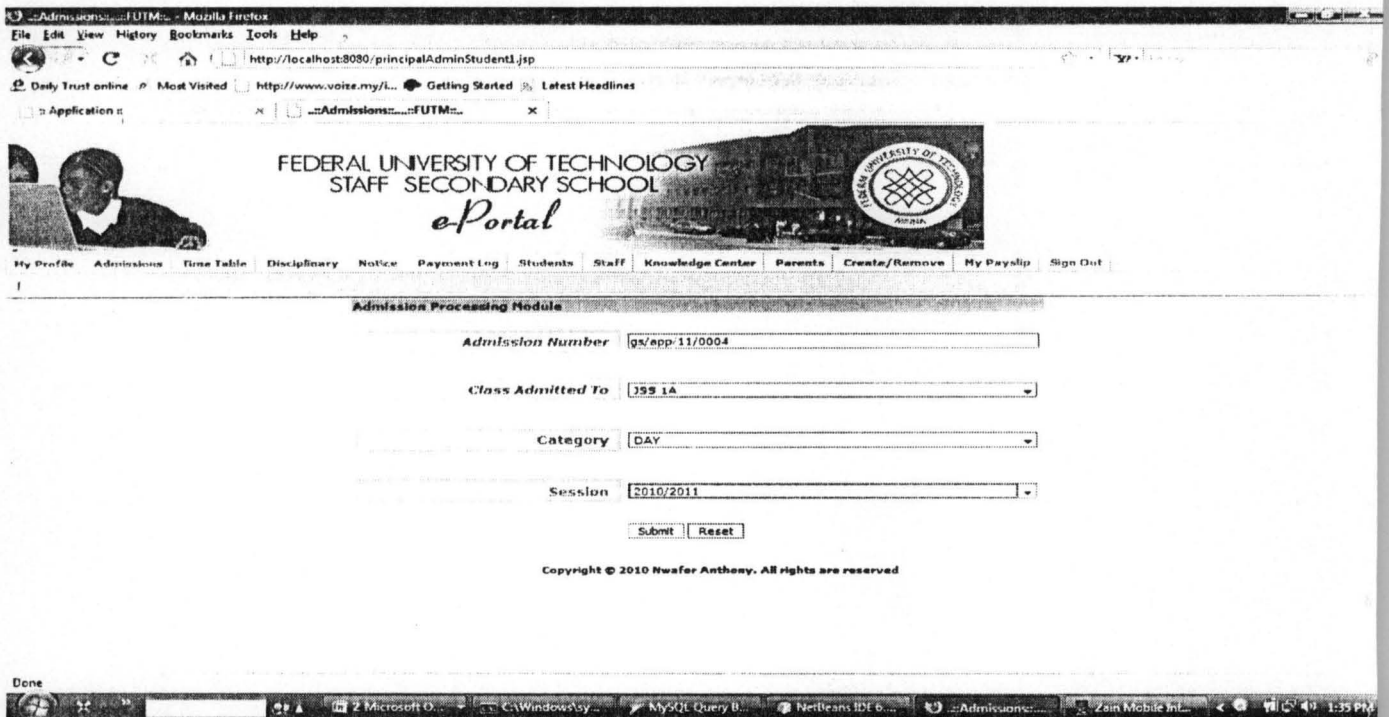
Fig. 4.12 Before Admission web page
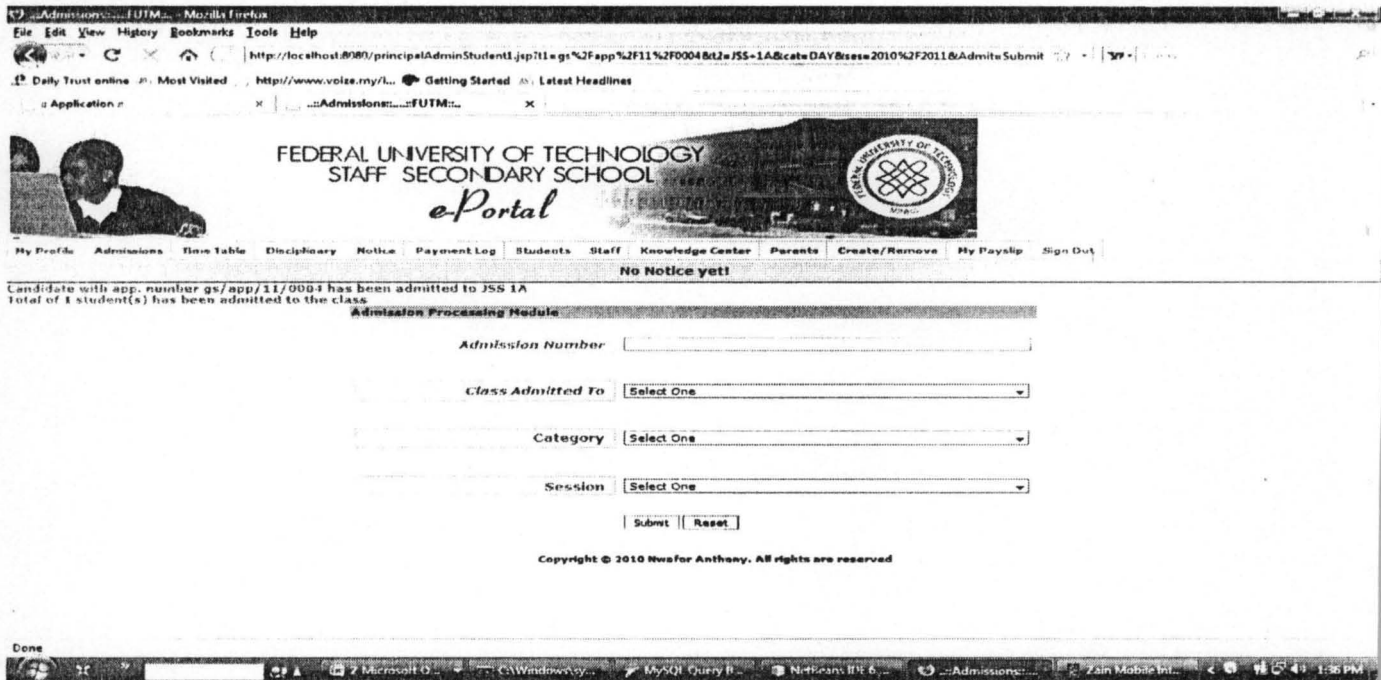
Fig. 4.13 After Admission web page
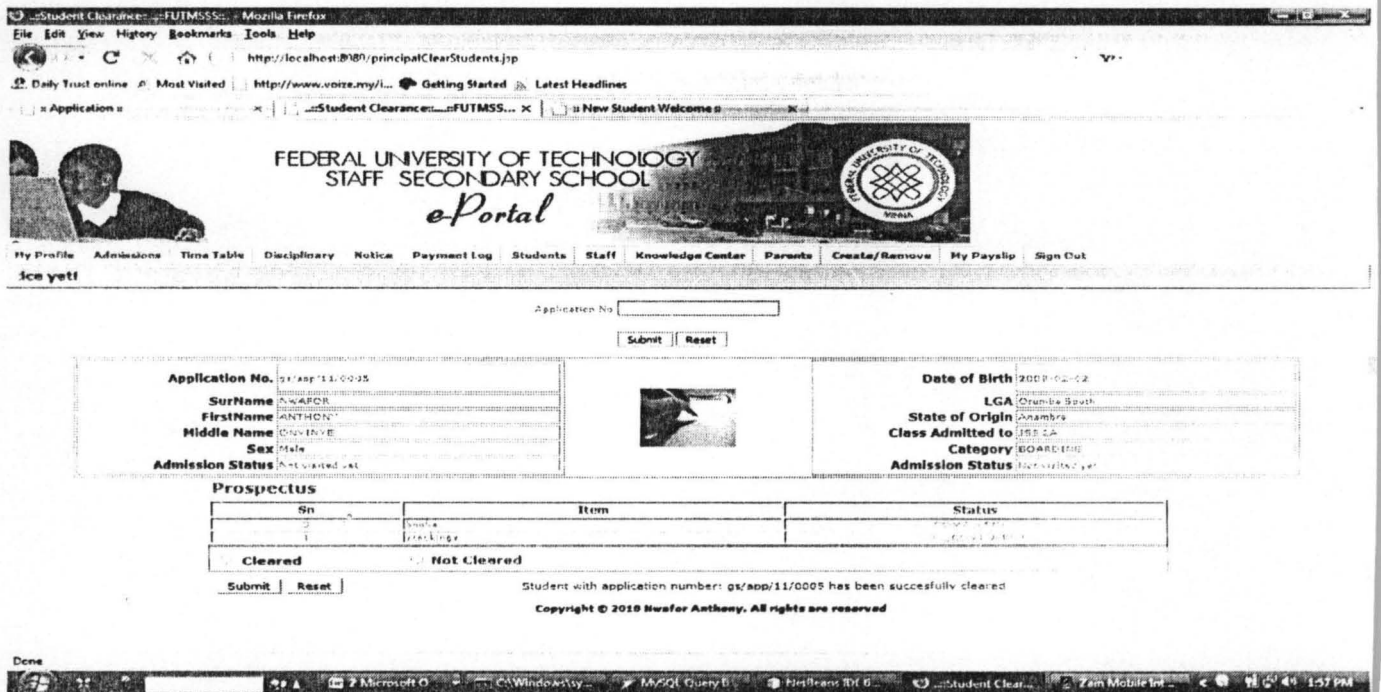
Fig.4.14 Clearance web page

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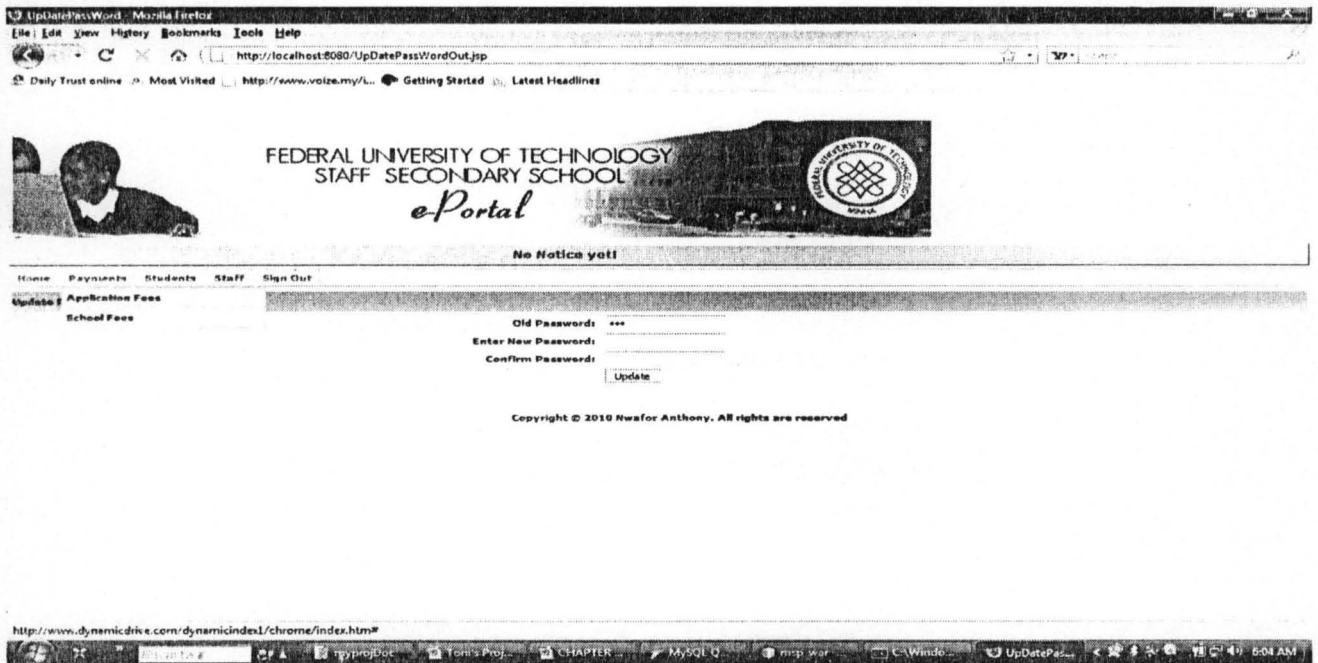
Fig. 4.15 Proprietors web page
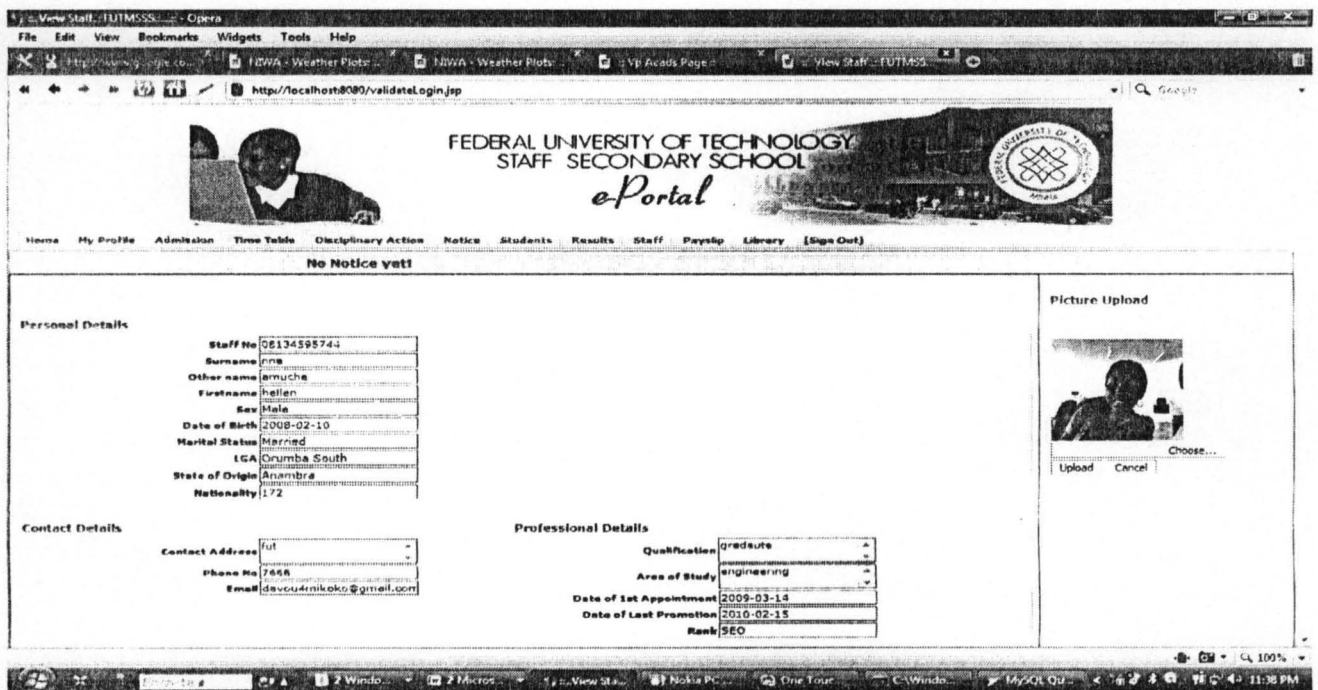
Fig. 4.16 Vice principal Admin web page

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Fig. 4.17 vice Principal Academics web page
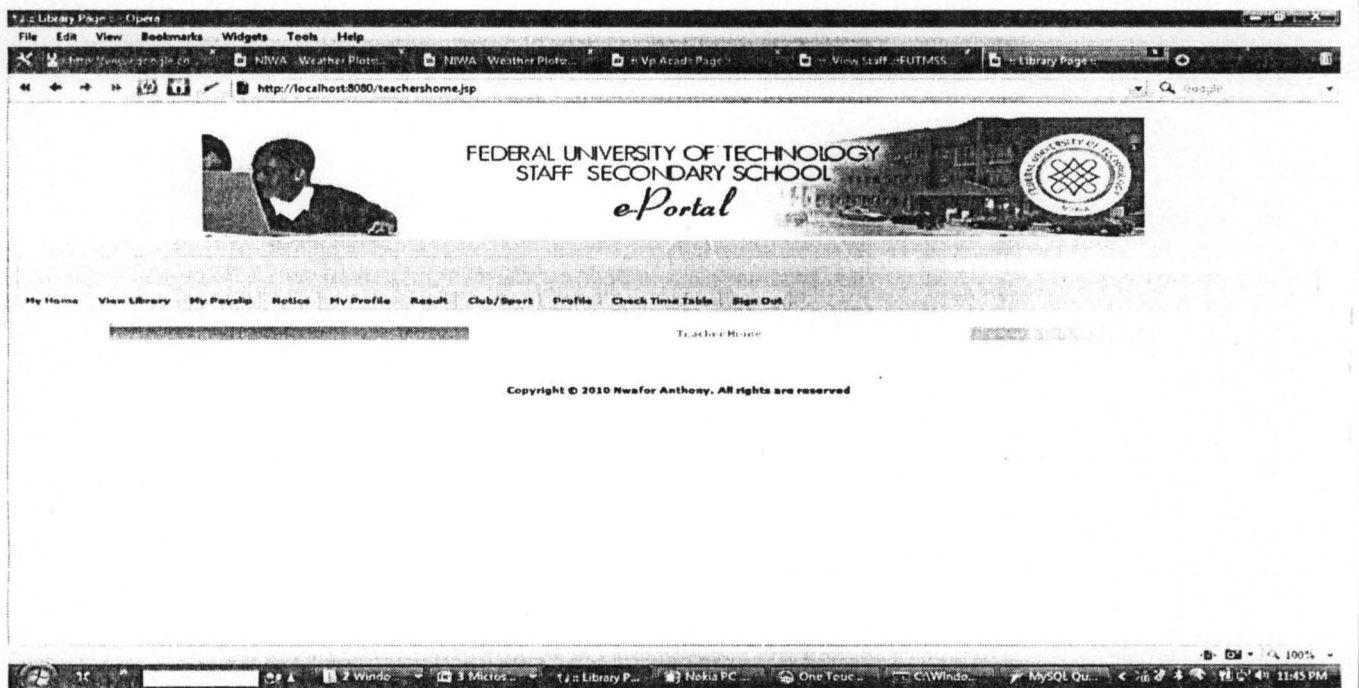
Fig. 4.18 Teacher web page
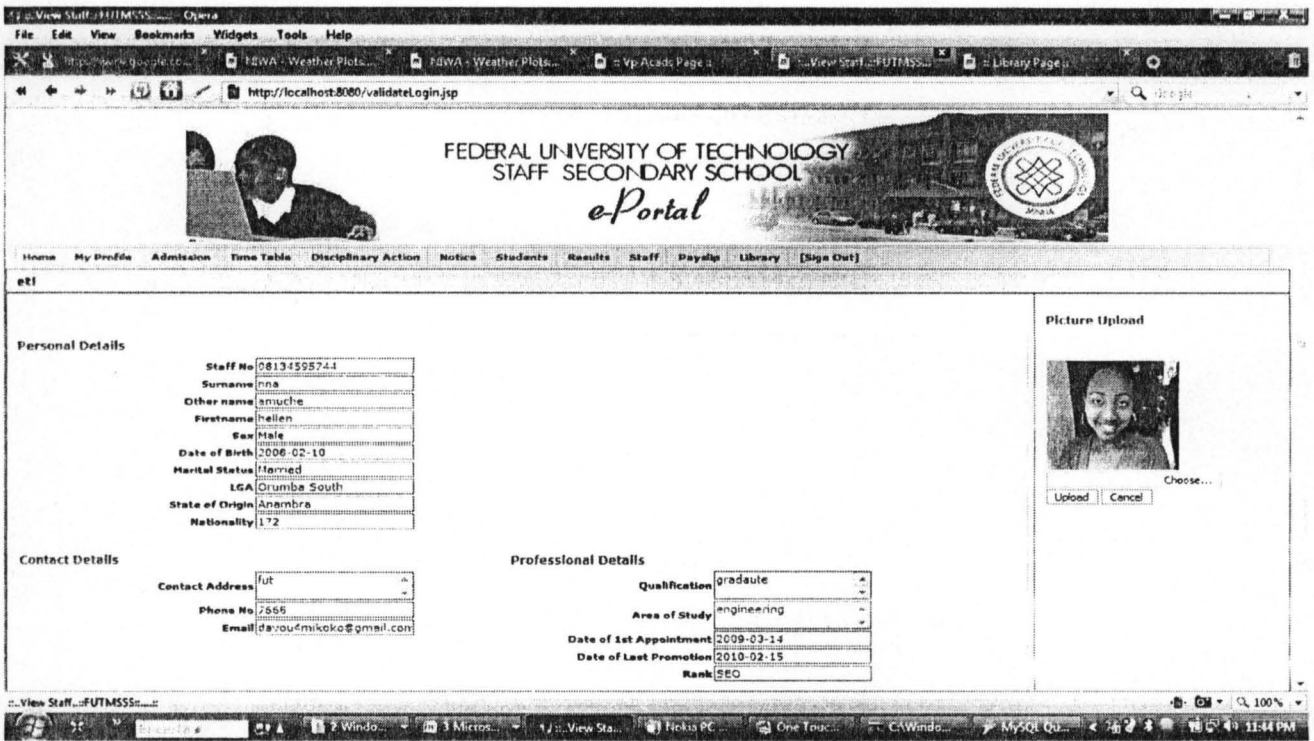
Fig. 4.19 Teachers profile web page
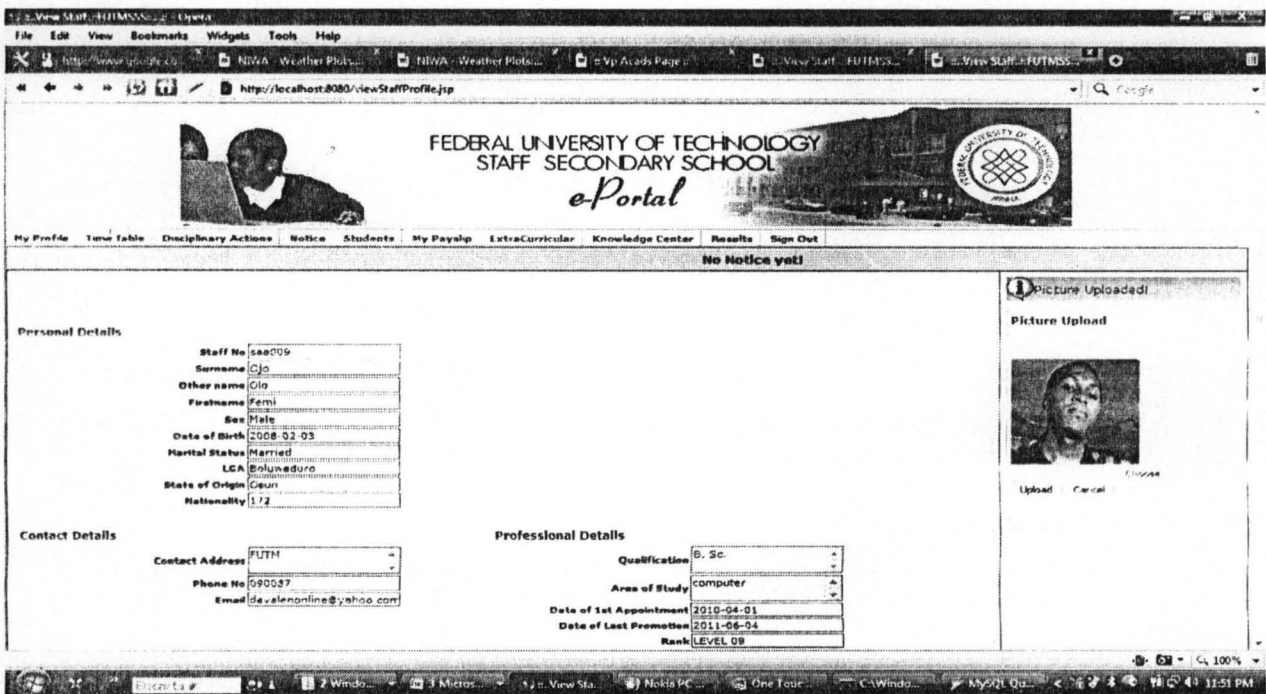
Fig. 4.20 Form master web page
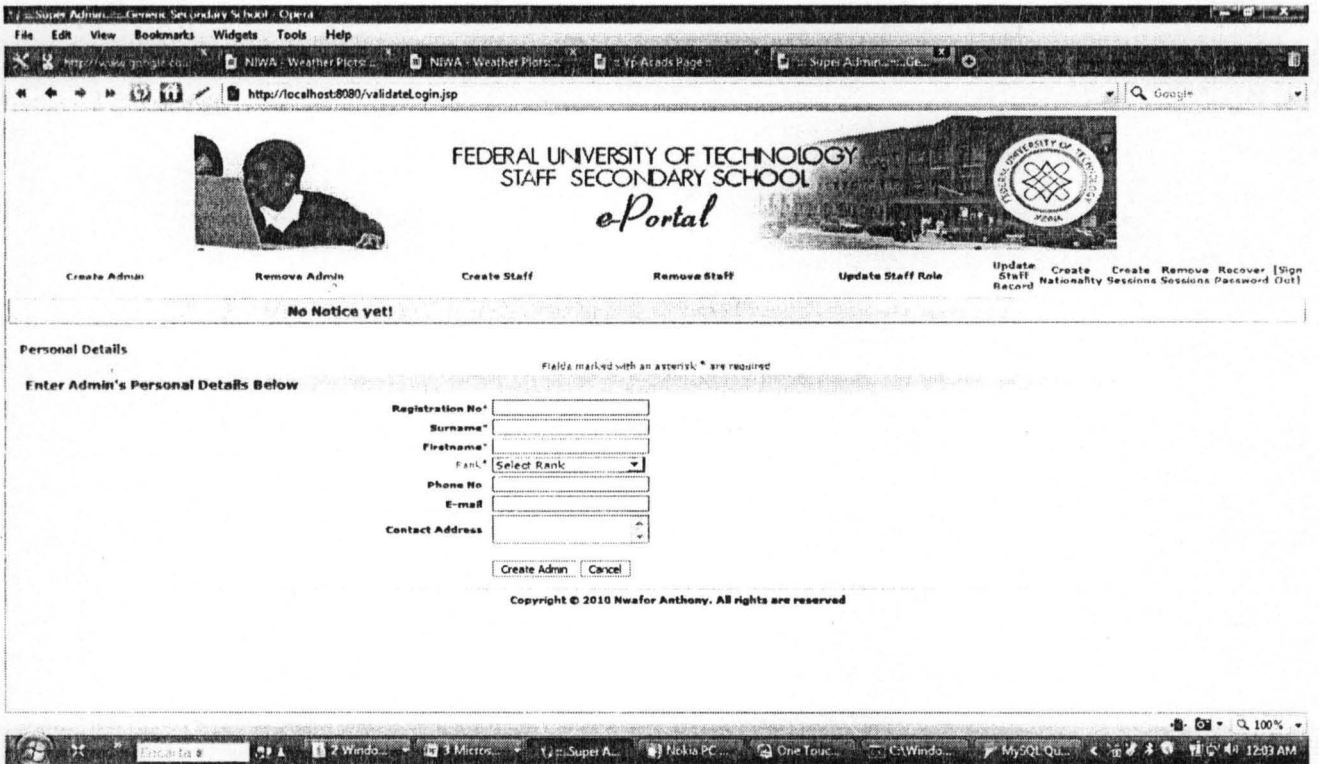
Fig. 4.21 Super Admin web page
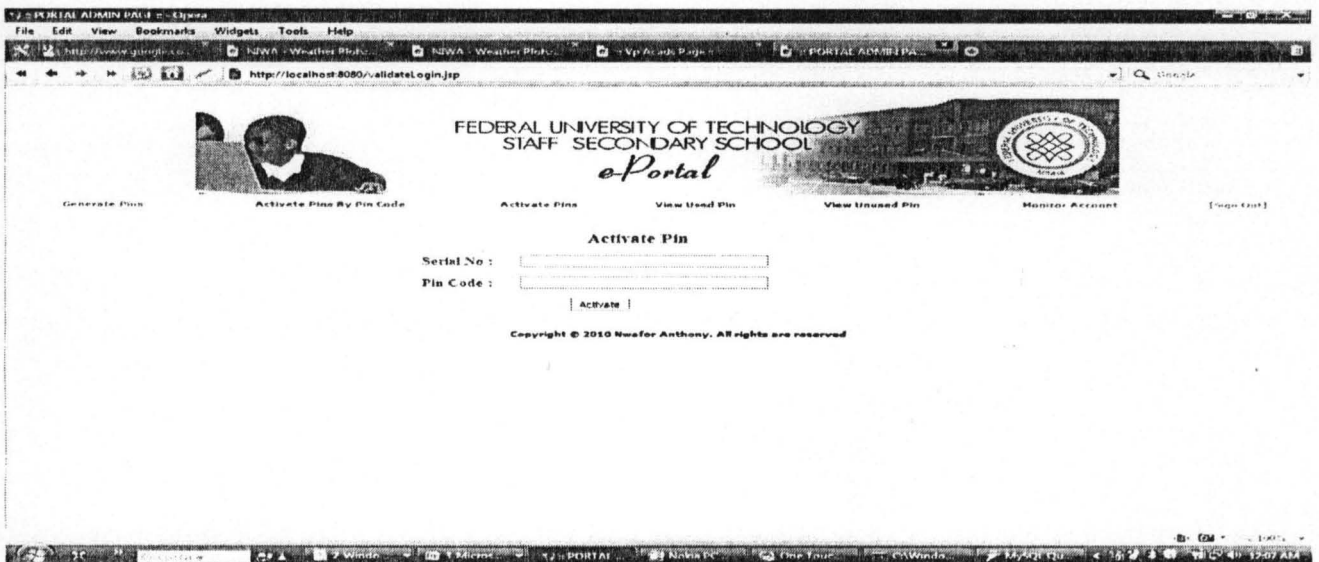
Fig. 4.22 Portal admin web page

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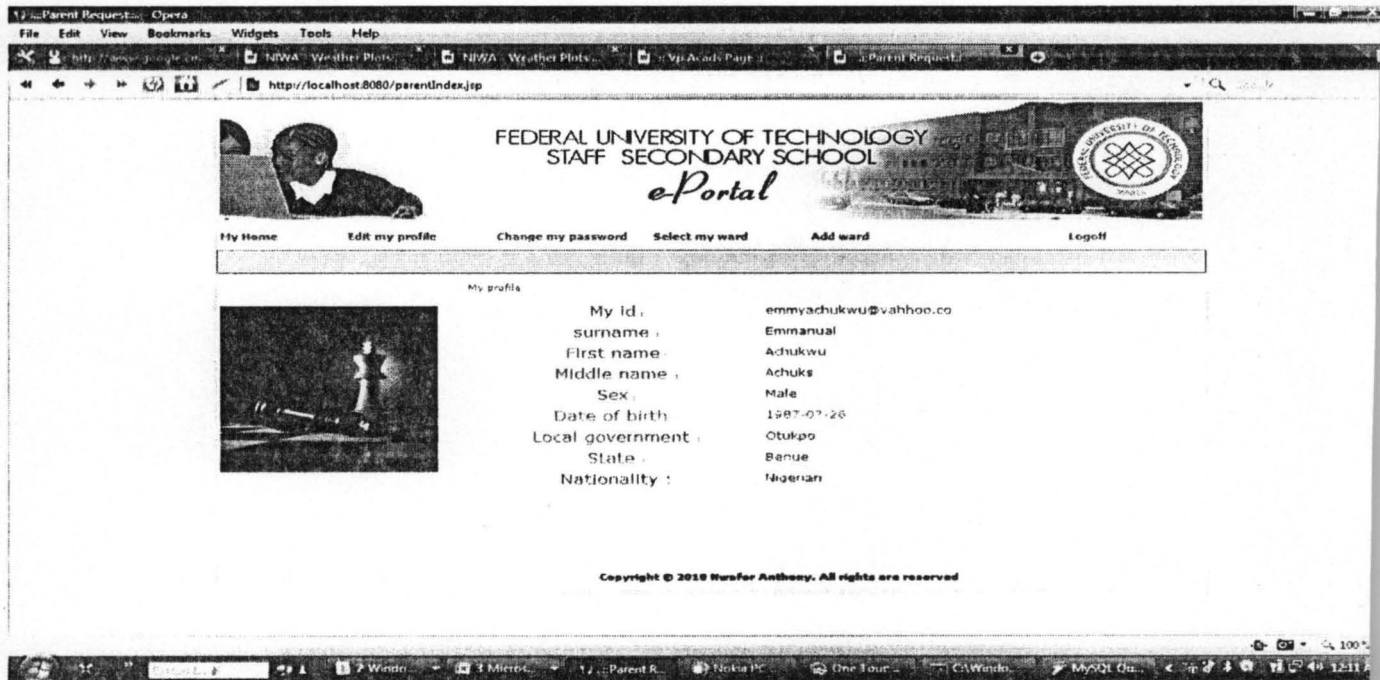
Fig. 4.23 Parent web page
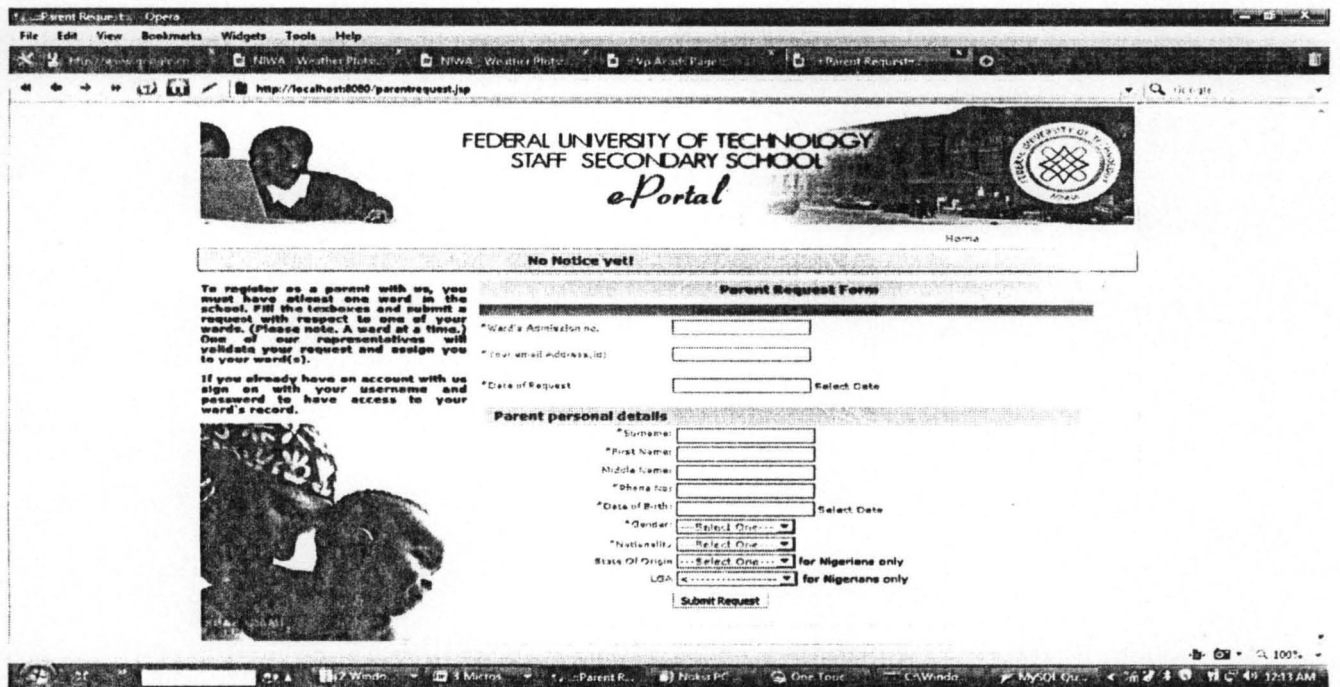
Fig. 4.24 Parent registration web page

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4.3 Discussion of Results

The web pages and its contents above was as a result of the interaction between the SQL databases, the JAVA code, JSP and the piloting machine which is the JBOSS server. Once the JBOSS is running the JAVA codes can retrieve data's to and fro the database. This process is further divide into sections below for detailed explanations.

Student section

The intending students can now login and apply for admission online by login with a pin-code that be obtained from the School or Bank, ensuring that key information is provided by completing a simplified application form, as basic information can retrieved from the student. After a successful application and entrance exams the will then check for his/her entrance result and interview date and subsequently interview result. Successful candidates after been duly congratulated by the School authority will be asked to proceed with payment of fees, after which he is admitted as a Student of the School and will be given a user name and password.

Registered student can login with his/her authentic user name and password, the Java Server Page (JSP) with the help of the JAVA code will verify the user name and password from the Database, if it is not authentic he/she will be denied access to the next page but if authentic, the student will be given access to the following information; check termly result and SSCE result online, view list of clubs/sports activities and joined and any of his/her choice, have excess to their facilities in the system e.g. library, update personal records, view time table, view notice, pay his/her fees, course registration, and view personal records.

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Teachers section

A teacher after going through the employment processes we be given a login User name and Password. After verifying the authenticity of the User name and Password he/she can access the library, join clubs/sports, post and view notices, view time table, view list of club join (and their activities), view personal records, view students result, update personal record, and view students by subjects offered.

Form Master Section

A form-masters after verification of the authenticity of his/her User name and Password can perform addition function like computation of results, view student in his/her class, update results.

Liberian section

Liberian after login can add, modify and remove books (according to category), can view and update his/her personal record, and view posted notice.

Vice Principal Admin section

The Vice Principal Admin after verification of authenticity of User name and Password can perform all principal roles except expelling students.

Vice Principal academics section

Vice Principal Academics can now login and create classes, clubs and sports. He/she can also remove classes, clubs and sports. And also performs all teachers' roles.

Principal Section

The Principal also has his/her own User name and Password that must be verified before he/she will have access to, view sport/club activities (and their regular activities), view notice, post notice, update personal profile, view student results, view personal profile, view all expelled students, view student results (per class or individually), view timetable (per class), expel students, view payment (based on criteria), view all staff (based on criteria), view all students (based on criteria), view library and all teachers role.

Proprietor Section

The Proprietor can also login and after verification of User name and Password, will be able to view staffs, update password, view payment status (by category), employ and update staffs (by promotion, etc), remove staffs and also view students (based on category).

Super Admin Section

Super Admin creates and removes a Portal Admin, he/she also recovers password and also creates nationality.

Portal Admin Head Section

Portal Admin Head login's and generate activates application and fees pins, activate pins, view used and unused pins and also monitors account.

Parent Section

Parents can also register, provided he/she has at least a ward in the school, after registration he/she will be provided a user name and password that give he/she access to view ward's personal records, view payment status, view time, update password, view notices, check results and also view list of clubs/sports joined by ward.

CHAPTER FIVE

5.1 Conclusion

A prototype Secondary school web portal for Federal University of Technology Minna Staff Secondary School system has been designed and implemented. All the inefficiencies with the existing system like manual administrative management and manual application has been dealt with. With this new system developed, the following functionalities has been achieved online, application for admission by intending candidates, registration of students, successful candidates can be admitted automatically into different classes by mere clicking of the mouse, Online posting of results, automatic computation of results, online result checking and printing. Parents view of students details, registering of clubs and sport membership, etc.

This system which was developed using J2EE technology and MySQL is based on the requirement specification of the user and the analysis of the existing system, with flexibility for future enhancement. The software is easy to use and deploy. Users who are not conversant with the database management system can use the software through a user-friendly interface. The use of web to achieve this is a developmental strategy.

The set of objectives of this project have been achieved. All manual processes involved in Secondary school management has been automated and computerized. Some drawback of the existing system that was overcome are, current cumbersome paper-based processes, paper applications which are expensive and time consuming to print, applicants do not always correctly complete these forms and return them on time, received paper forms which requires manual processing, sorting and data entry, manual computation of results that is time consuming and

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prone to errors, difficulty for management to get an overview of progress, low security of data, difficulty in update data and problem of repetition of same procedures.

5.2 Recommendation

With the e-portal system developed for Federal University of Technology Minna Staff Secondary School, it is recommended that the University should embark on establishing a University Staff Secondary School where this software will be useful.

For future version of this software it is strongly recommended that the Alumni section should be included, the e-library should be made more flexible and other shortcomings should be taken care of. It is also recommended that any future work on this software should be developed using MYSQL and J2EE technology to ensure that the portal is secured and allow for compatibility.

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APPENDIX

Java Server Page (JSP) Codes

```
<%@page import="com.panet.myschoolportal1_0_entities.*"%>
<%@page import="com.panet.myschoolportal1_0_sessions.*"%>
<%@page import="com.panet.myschoolportal1_0_utils.*"%>
<%@page import="java.util.Collection"%>
<%@page import="java.util.Calendar"%>
<%@page import="javax.ejb.*"%>
<%@page import="java.rmi.RemoteException"%>
<%@page import="javax.naming.NamingException"%>
<%@page import="javax.rmi.PortableRemoteObject"%>
<%@page import="javax.naming.InitialContext"%>
<%@page import="java.lang.Integer"%>
<%@page import="java.util.ArrayList"%>
<%@page import="java.util.Iterator"%>


<%--
The taglib directive below imports the JSTL library. If you uncomment
it,
you must also add the JSTL library to the project. The Add Library...
action
on Libraries node in Projects view can be used to add the JSTL 1.1
library.
--%>
<%--
<%@taglib uri="http://java.sun.com/jsp/jstl/core" prefix="c"%>
--%>

<!DOCTYPE HTML PUBLIC "-//W3C//DTD HTML 4.01 Transitional//EN"
    "http://www.w3.org/TR/html4/loose.dtd">

<html>
    <head>
    <link href="css/web-default.css" rel="stylesheet" type="text/css">
    <style type="text/css">
<!--
.style4 {
    color: #009900;
    font-weight: bold;
}
-->
    </style>
    </head>

        <meta http-equiv="Content-Type" content="text/html; charset=UTF-
8">

        <style type="text/css">
<!--
@import url("general_css/myschoolportal2_0.css");
-->
        </style>
            <SCRIPT language="JavaScript1.2" type="text/javascript">
            var message="Welcome to eportal for Secondary School
Portal"    //specifys the title
            var message=message+"              "
            //gives a pause at the end,1 space=1 speed unit, here I used
```

```
                //gives a pause at the end,1 space=1 speed unit, here I used
10 spaces@150 each = 1.5seconds.
                i="0"                            //declares the variable and sets
it to start at 0
            var temptitle=""                    //declares the variable and
sets it to have no value yet.
            var speed="150"                      //the delay in milliseconds
between letters

            function titler()
            {
                if (!document.all&&!document.getElementById)
                return
                document.title=temptitle+message.charAt(i)   //sets the
initial title
                temptitle=temptitle+message.charAt(i)
//increases the title by one letter
                i++                                   //increments the
counter
                if(i==message.length)                     //determines
the end of the message
                {
                    i="0"                                 //resets the
counter at the end of the message
                    temptitle=""                              //resets
the title to a blank value
                }
                setTimeout("titler()",speed)            //Restarts.
Remove line for no-repeat.
            }
            window.onload=titler
    </SCRIPT>
 <%!
        sessions005Local s005l2 = null;
        sessions005LocalHome s005lh2 = null;

    //String cnt005 = "No Notice yet!";



 %>
<%
        InitialContext ic0052 = new InitialContext();
        Object obj0052 = ic0052.lookup
("java:comp/env/ejb/sessions005Bean");
        s005lh2 = (sessions005LocalHome)PortableRemoteObject.narrow
(obj0052, sessions005LocalHome.class);
        s005l2 = s005lh2.create();
        //str4 = s005l2.UploadCurrentNotice();
        String str4 = "No Notice yet!";
        String arc21 = "";
 %>


<%
        /*
        try{

        msg = nlocal.viewCurrentNotice();
          }catch(Exception r){
            System.out.println("I caused an erroor in vienotice "
+r.getMessage());
```

```
            }
          if(msg!=null && msg!=""){
              notice = msg;
          }else{
              notice = "No notice yet!";
          }

**/

          try{
          java.util.ArrayList lists1 = s0051z.ChechNoticeBoard();
          Iterator i1 = lists1.iterator();
          while(i1.hasNext())
          {
              NoticeDetails005 gg1 =(NoticeDetails005)i1.next();
              //arc += gg.getDate()+"\n"+gg.getNotice()+"\n\n";
              arc21 += gg1.getNotice()+"\n\n";

          }
          lists1.clear();
          //arc2 = "";
         // listl.
          if ((arc21 != null) && (arc21 != ""))
          str4 = arc21;
      }
         // lists1
        catch(Exception ex)
      {
          //String error1 = "These is no notice on "+dat;
      }

         %>

     <body class="body">

     <table width="99%" border="0" cellpadding="0" cellspacing="0"
class="main">
       <tr>
         <td width="50%" class="bg1"></td>
         <td class="bg2"></td>
         <td bgcolor="#FFFFFF" valign="top" class="main"><table
width="832" height="366%" border="0" cellpadding="0" cellspacing="0"
class="main">
             <tr>
               <td colspan="2"><%@ include file="headers/header.jsp"%>
</td>
             </tr>
             <tr>
               <td colspan="2" class="bg7"><div align="center"><span
class="style1"><%@ include  file="WEB-INF/links/home.jsp"%></span></div>
</td>
             </tr>
             <tr>
               <td valign="top" width="174" class="lightback"
align="center"><span class="pgname">Current Notice(s) </span>
                     <FORM name="news" action="" method="get">
                       <table height="128">
                         <tr>
                           <td width="151" class="news2"><textarea
name="news2" cols="30" rows="20" class="frshinfo" id="news2"><%=str4%>
</textarea>
```

```html
                    </textarea>
                  </td>
                </tr>
              </table>
            </FORM></td>
            <td valign="top" width="800" ><table width="100%"
height="383"  border="0" cellpadding="3" cellspacing="0">
              <tr>
                <td width="64%" valign="top"><table width="100%"
border="0" cellspacing="0" cellpadding="3">
                  <tr>
                    <td height="10"></td>
                  </tr>
                </table>
                <table width="100%" height="131"  border="0"
cellpadding="3" cellspacing="0">
                  <tr>
                    <td height="10"> <table width="100%"
border="0" cellspacing="3" cellpadding="0">
  <tr>
    <td><table width="100%" border="0" cellspacing="3" cellpadding="0">
     <tr>
       <td class="mspSecondaryTab" align="center">Welcome to FUT Minna
Staff Secondary School ePortal, FUT Minna </td>
     </tr>
    </table></td>
  </tr>
  <tr>
    <td><table width="100%" border="0" cellspacing="3" cellpadding="0"
class="textbold">
      <tr>
        <td class="textbold"><p align="center" class="pgname"><strong>
<em>ePortal<sup>TM</sup></em></strong></p>
          <p align="justify" class="bodytext"><span
class="coperateSmall"><strong><em>ePortal<sup>TM</sup></em></strong>
</span> is an Online School  Management Portal made up of web
applications that automates all manual processes involved in schools
management. It identifies stakeholders within the  school system and
provides functionalities that enable them perform their  duties online.
Among others the stakeholders include students, teachers,  principal and
management staff, parents, members of governing board and  proprietors.
The portal is richly packed with the following features:</p>
          <div align="justify">
            <ul type="disc">
              <li class="bodytext"><strong>Single Sign-On:</strong> A
user signs        on once and has access to all his/her functionalities
within the portal. </li>
              <li class="bodytext"><strong>Easy to Use: </strong>The
portal        provides easy to understand and controllable menus to
access the various        features provided. </li>
              <li class="bodytext"><strong>Functionalites:</strong> The
functionalities of the portal include application for admission by
intending candidates, registration of students, Online posting of
results        by teachers, automatic computation of results,
online result checking and printing, Parents        view of students
details, joining sporting and extracurricular activities        by
students to mention a few.</li>
            </ul>
          </div>
          <p align="justify" class="bodytext"><span
class="coperateSmall"><strong><em>ePortal<sup>TM</sup></em></strong>
```

```
</span> is a final year project developed by <span class="style4">Nwafor
Anthony Valentine Onyinye</span>, under the supervision of <span
class="style4"> Engr. Abolarinwa Joshua</span>. It was developed using
the J2EE enterprise application  development platform.</p>
          <p><br>
          </p></td>
      </tr>
    </table></td>
  </tr>
</table>
</td>
                            </tr>
                        </table></td>
                    <td width="36%" valign="top"><table width="100%"
height="168"  border="0" cellpadding="3" cellspacing="0">
                        <tr>
                          <td width="3%" height="18" class="lightback">
 </td>
                          <td width="97%" class="lightback textbold">
<strong>Apply/Check  Admission </strong></td>
                        </tr>
                        <tr>
                          <td height="150" colspan="2" valign="top"
class="lightlineubox"><!--<div id="Admission">-->
                            <table width="100%"  border="0"
cellspacing="0" cellpadding="0">
                              <tr >
                                <td > </td>
                                <td class="lightlineb"> </td>
                                <td width="3%" class="lightlineb">
 </td>

                                <td width="57%"> </td>
                              </tr>
                              <tr>

                                <td width="39%" valign="top"><table
width="126%"  border="0" cellspacing="0" cellpadding="5">
                                  <tr>

                                    <td nowrap="nowrap"><table><tr>
<td><a href="apply1.jsp">Online Application </a></td></tr></table></td>
                                  </tr>
                                  <tr>

                                    <td nowrap="nowrap"><table><tr>
                                      <td><a
href="interviewCheck.jsp">Check Entrance Exam Results </a></td>
                                      </tr></table></td>
                                  </tr>
                                  <tr>

                                    <td nowrap="nowrap"><table><tr>
                                      <td><a
href="checkAdmission.jsp">Check Interview Results </a></td>
                                      </tr></table></td>
                                  </tr>

                                </table></td>
                                <td width="3%" nowrap="nowrap"> 
</td>

                                <td colspan="2" valign="top"><div
```

```html
align="right"><table><tr><td><img src="./images006/panetbg1.jpg"
width="100" height="73" align="left" class="lightlineubox" /></td></tr>
</table></div></td>
                                            </tr>
                                        </table>
                                    <!-- </div>-->
                                        <table width="100%"  border="0"
cellspacing="0" cellpadding="3">
                                                <tr> </tr>
                                        </table></td>
                                </tr>
                            </table>
                                <table width="101%" height="163"  border="0"
cellpadding="3" cellspacing="0">
                                        <tr>
                                        <td width="3%" height="18"
class="lightback"> </td>
                                                <td width="97%" class="lightback textbold">
<strong> Registered User </strong></td>
                                        </tr>
                                        <tr>
                                        <td height="120" colspan="2" valign="top"
class="lightlineubox"><div id="showApply">
                                                <table width="100%"  border="0"
cellspacing="0" cellpadding="0">
                                                        <tr >
                                                        <td > </td>
                                                        <td class="lightlineb"> </td>
                                                        <td width="37%" class="lightlineb">
 </td>

                                                        <td width="20%"> </td>
                                                    </tr>
                                                    <tr>
                                                        <td width="1%" valign="top"> 
</td>
                                                        <td width="42%" valign="top"><table
width="100%"  border="0" cellspacing="0" cellpadding="5">
                                                            <tr>

                                                            <td width="65%"
nowrap="nowrap"><div id="showLogin"><table width="100%" border="0"
cellspacing="3" cellpadding="0">
                                                                <tr>
                                                                <td><div align="center"><a
href="javascript:showParameter();">  Login</a> </div></td>
                                                                </tr>
                                                            </table></div></td>
                                                        </tr>
                                                        <tr>

                                                            <td nowrap="nowrap" ><div
id="showParameter" style="display:none" >
                                                                <table width="100%"
border="0" cellspacing="3" cellpadding="0"><form id="loginform"
name="loginform" method="post" action="validateLogin.jsp">
                                                                    <tr>
                                                                    <td width="44%"
class="textbold" align="right">Reg No:  </td>
                                                                        <td width="56%"><input
name="username" type="text" class="myschoolportalButton" size="20"></td>
                                                                    </tr>
```

```
                                                    <tr>
                                                      <td class="textbold"
align="right">Password:  </td>
                                                      <td><input name="pwd"
type="password" class="myschoolportalButton" size="20"></td>
                                                    </tr>
                                                    <tr>
                                                      <td> </td>
                                                      <td><input
name="Submit" type="submit" class="myschoolportalButton" value="Login">
                                                        <input name="Submit2"
type="button" class="myschoolportalButton" onclick=javascript:showLogin
(); value="Close"></td>
                                                    </tr>
                                                  </form> </table>
                                                </div></td>
                                              </tr>

                          <%-- Here is the diagnostic when the user enters
an invalid username or password--%>
                              <%
                                      String message = (String)
session.getAttribute("message") ;
                                      String logoutMessage = request.getParameter
("logoutMessage");

                                      String msging = "";
                                      if ( message != null ) {
                                          msging = message;
                                      }else if(logoutMessage != null){
                                          msging = logoutMessage;
                                      }
                              %>
                                                <tr>
                                                  <td><div align="left">
<table><tr><td><font color="red"><%=msging%></font></td></tr></table>
</div></td>
                                                </tr>
                                              </table></td>
                                              <td colspan="2" valign="top"><div
align="right"><table><tr><td><img src="./images006/panetbg2.jpg"
width="100" height="73" class="lightlineubox" /></td></tr></table></div>
</td>
                                            </tr>
                                          </table>
                                        </div></td>
                                      </tr>
                                  </table></td>
                              </table></td>
                  </tr>
                  <tr>
                      <td colspan="2" height="42" class="bg7"><%@ include
file="footers/footer.jsp" %>
                      </tr>
                  </table></td>
                  <td width="50%" class="bg8"></td>
              </tr>
          </table>
          <h1> </h1>

          <%--
This example uses JSTL, uncomment the taglib directive above.
```

```jsp
     To test, display the page like this: index.jsp?
sayHello=true&name=Murphy
     --%>
     <%--
     <c:if test="${param.sayHello}">
         <!-- Let's welcome the user ${param.name} -->
         Hello ${param.name}!
     </c:if>
     --%>
     <SCRIPT language=javascript>
<!--
     var ttloop = 1; // Repeat forever? (1 = True; 0 = False)
     var tspeed = 150; // Typing speed in milliseconds (larger number =
slower)
     var tdelay = 1500; // Time delay between newsTexts in milliseconds
     // ------------- NO EDITING AFTER THIS LINE ------------- \\
     var dwAText, cnews=0, eline=0, cchar=0, mxText;
     var newsText ;
     function doNews()
     {
         newsText = document.news.news2.value;
         document.news.news2.value ="";
       mxText = newsText.length - 1;
       dwAText = newsText;//[cnews];
       setTimeout("addChar()",1000);
     }
     function addNews()
     {
       cnews = 1;
         newsText = document.news.news2.value;
         //document.news.news2.value ="";
       if (cnews <= mxText)
         {
             dwAText = newsText;//[cnews];
             if (dwAText.length != 0)
             {
             document.news.news2.value = "";
             eline = 0;
             setTimeout("addChar()",tspeed)
             }
         }
     }
     function addChar()
     {
       if (eline!=1)
         {
             if (cchar != dwAText.length) {
             nmttxt = "";
             for (var k=0; k<=cchar;k++)
             nmttxt += dwAText.charAt(k);
       document.news.news2.value = nmttxt;
       cchar += 1;
       if (cchar != dwAText.length) document.news.news2.value += "_";
       } else
         {
             cchar = 0;
             eline = 1;
         }
       if (mxText==cnews && eline!=0 && ttloop!=0)
         {
             cnews = 0;
```

```
                    setTimeout("addNews()",tdelay);
            }
              else setTimeout("addChar()",tspeed);
            }
              else
              {
                  setTimeout("addNews()",tdelay)
            }
        }
-->
</SCRIPT>
<SCRIPT language=javascript>
    <!--
    doNews();
    -->
</SCRIPT>
<SCRIPT language=javascript>
function showLogin() {
            document.getElementById("showLogin").style.display = "";
            document.getElementById("showParameter").style.display =
"none";

    }
function showParameter() {
            document.getElementById("showParameter").style.display = "";
            document.getElementById("showLogin").style.display = "none";
    }

            </SCRIPT>
            <script language="Javascript">
function giveFocus() {
    document.loginform.username.focus() ;
}

function submit() {
    document.loginform.submit() ;
}

function reset() {
    document.loginform.reset() ;
    document.loginform.username.focus() ;
}
</script>

    </body>
</html>
<%@ page contentType="text/html; charset=iso-8859-1" language="java"
import="java.sql.*" errorPage="" %>
<%@ page import="javax.ejb.*,java.lang.
*,javax.naming.InitialContext,javax.rmi.PortableRemoteObject, java.util.
*, com.panet.myschoolportal1_0_sessions.*, com.panet.myschoolportal1_0
_entities.*, com.panet.myschoolportal1_0_utils.*" %>
<%@page import="java.util.ArrayList"%>
<%@page import="java.util.Iterator"%>
<!DOCTYPE html PUBLIC "-//W3C//DTD XHTML 1.0 Transitional//EN"
"http://www.w3.org/TR/xhtml1/DTD/xhtml1-transitional.dtd">
<html xmlns="http://www.w3.org/1999/xhtml">
<head>
<meta http-equiv="Content-Type" content="text/html; charset=iso-8859-
1" />
<META http-equiv="Page-Enter" CONTENT="RevealTrans
```

```
(Duration=#,Transition=#)">
<META http-equiv="Page-Exit" CONTENT="RevealTrans
(Duration=#,Transition=#)">
<title>:: Application ::</title>
<link href="css/myschoolportal.css" rel="stylesheet" type="text/css" />
<script type="text/javascript">

<!--

function validate_form ( )
{
      valid = true;

        if ( document.apply1.sess.selectedIndex == 0 )
        {
                alert ( "Please select the session" );
                valid = false;
        }

        if ( document.apply1.clat.selectedIndex == 0 )
        {
                alert ( "Please select a class" );
                valid = false;
        }

        if ( document.apply1.pin.value == "" )
        {
                alert ( "Please enter the pincode" );
                valid = false;
        }

        return valid;
}

//-->

</script>
</head>

<body><table width="85%" border="0" cellspacing="0" cellpadding="0"
align="center">
  <tr>
    <td width="85%"><%@ include  file="headers/header.jsp" %></td>
  </tr>
</table>
<%!
    private sessions001Local sr = null;
%>
<%
  try{
      InitialContext ic = new InitialContext();
      Object objref = ic.lookup("java:comp/env/ejb/sessions001Bean");
      sessions001LocalHome srh = (sessions001LocalHome)
PortableRemoteObject.narrow(objref,sessions001LocalHome.class);
      sr = srh.create();
  }catch(Exception e){
      throw new EJBException(e.getMessage());
  }
%>
<table width="85%" border="0" cellspacing="0" cellpadding="0"
align="center">
```

JAVA CODES

```java
package com.msp_sessions;

import com.msp_entities.*;
import com.msp_dao.*;
import java.sql.Date;
import java.util.ArrayList;
import java.util.Collection;
import java.util.Iterator;
import java.util.Random;
import java.util.logging.Level;
import java.util.logging.Logger;
import javax.ejb.*;
import javax.naming.Context;
import javax.naming.InitialContext;
import javax.naming.NamingException;

/**
 * This is the bean class for the sessions001Bean enterprise bean.
 * Created Jun 12, 2007 1:01:11 PM
 * @author PANET
 */
public class sessions001Bean implements SessionBean,
sessions001RemoteBusiness, sessions001LocalBusiness {
    private SessionContext context;

    AdmissionnoLocalHome adlh = null;
    AdmittedstudentsLocalHome aslh = null;
    ApplicationsLocalHome aplh = null;
    ClassesLocalHome clh = null;
    ClubactivitiesLocalHome calh = null;
    ClubsLocalHome cllh = null;
    CourseregistrationLocalHome crlh = null;
    ExpulsionLocalHome elh = null;
    FeesregistrationLocalHome frlh = null;
    LgaLocalHome llh = null;
    MinmaxcoursesLocalHome mmlh = null;
    NationalityLocalHome nlh = null;
    ProspectusLocalHome plh = null;
    RegisteredstudentsLocalHome rlh = null;
    SchoolcalendarLocalHome sclh = null;
    SessionsLocalHome sslh = null;
    StateoforiginLocalHome solh = null;
    StudentclubLocalHome  sulh = null;
    StudentsportLocalHome stslh = null;
    StudentclassLocalHome stclh = null;
    SubjectsLocalHome slh = null;
    TimetableLocalHome ttlh = null;
    UnusedpinLocalHome uplh = null;
    UsedpinLocalHome ulh = null;
    UserLocalHome uslh = null;
    YearsLocalHome ylh = null;
    ClasssubjectsLocalHome csslh = null;
    SportsLocalHome sllh = null;
    TermlyresultLocalHome trlh = null;
    StaffclassLocalHome suclh = null;
    OverallresultLocalHome olh = null;
```

```java
    InterviewdateLocalHome ilh = null;
    ScskillsLocalHome sklh = null;
    NexttermLocalHome ntlh = null;
    NeatnessscaleLocalHome nslh = null;
    NeatnessLocalHome nnlh = null;
    MathsskillsLocalHome mslh = null;
    EngskillsLocalHome eslh = null;
    AbspresLocalHome aprlh = null;
    CommentsLocalHome cmlh = null;
    SkillsscaleLocalHome skslh = null;
    PaymentRequestLocalHome pprlh = null;
    ExternalexamsLocalHome eelh = null;
    ExambodyLocalHome exlh = null;
    OthercategoryLocalHome oclh = null;
    OtherclassLocalHome ocllh = null;
    // <editor-fold defaultstate="collapsed" desc="EJB infrastructure
methods. Click the + sign on the left to edit the code.">
    // TODO Add code to acquire and use other enterprise resources
(DataSource, JMS, enterprise bean, Web services)
    // TODO Add business methods or web service operations
    /**
     * @see javax.ejb.SessionBean#setSessionContext
(javax.ejb.SessionContext)
     */
    public void setSessionContext(SessionContext aContext) {
        context = aContext;
    }

    /**
     * @see javax.ejb.SessionBean#ejbActivate()
     */
    public void ejbActivate() {
        adlh = lookupAdmissionnoBean();
        aslh = lookupAdmittedstudentsBean();
        aplh = lookupApplicationsBean();
        clh = lookupClassesBean();
        calh = lookupClubactivitiesBean();
        cllh = lookupClubsBean();
        crlh = lookupCourseregistrationBean();
        elh = lookupExpulsionBean();
        frlh = lookupFeesregistrationBean();
        llh = lookupLgaBean();
        mmlh = lookupMinmaxcoursesBean();
        nlh = lookupNationalityBean();
        plh = lookupProspectusBean();
        rlh = lookupRegisteredstudentsBean();
        sclh = lookupSchoolcalendarBean();
        sslh = lookupSessionsBean();
        solh = lookupStateoforiginBean();
        sulh = lookupStudentclubBean();
        stslh = lookupStudentsportBean();
        stclh = lookupStudentclassBean();
        slh = lookupSubjectsBean();
        ttlh = lookupTimetableBean();
        uplh = lookupUnusedpinBean();
        ulh = lookupUsedpinBean();
        uslh = lookupUserBean();
        ylh = lookupYearsBean();
        csslh = lookupClasssubjectsBean();
        olh = lookupOverallresultBean();
        ilh = lookupInterviewdateBean();
```

```java
        sklh = lookupScskillsBean();
        ntlh = lookupNexttermBean();
        nslh = lookupNeatnessscaleBean();
        nnlh = lookupNeatnessBean();
        mslh = lookupMathsskillsBean();
        eslh = lookupEngskillsBean();
        aprlh = lookupAbspresBean();
        cmlh = lookupCommentsBean();
        skslh = lookupSkillsscaleBean();
        pprlh = lookupPaymentRequestBean();
        eelh = lookupExternalexamsBean();
        exlh = lookupExambodyBean();
        oclh = lookupOthercategoryBean();
        ocllh = lookupOtherclassBean();
    }

    /**
     * @see javax.ejb.SessionBean#ejbPassivate()
     */
    public void ejbPassivate() {
        adlh = lookupAdmissionnoBean();
        aslh = lookupAdmittedstudentsBean();
        aplh = lookupApplicationsBean();
        clh = lookupClassesBean();
        calh = lookupClubactivitiesBean();
        cllh = lookupClubsBean();
        crlh = lookupCourseregistrationBean();
        elh = lookupExpulsionBean();
        frlh = lookupFeesregistrationBean();
        llh = lookupLgaBean();
        mmlh = lookupMinmaxcoursesBean();
        nlh = lookupNationalityBean();
        plh = lookupProspectusBean();
        rlh = lookupRegisteredstudentsBean();
        sclh = lookupSchoolcalendarBean();
        sslh = lookupSessionsBean();
        solh = lookupStateoforiginBean();
        sulh = lookupStudentclubBean();
        stslh = lookupStudentsportBean();
        stclh = lookupStudentclassBean();
        slh = lookupSubjectsBean();
        ttlh = lookupTimetableBean();
        uplh = lookupUnusedpinBean();
        ulh = lookupUsedpinBean();
        uslh = lookupUserBean();
        ylh = lookupYearsBean();
        csslh = lookupClasssubjectsBean();
        trlh = lookupTermlyresultBean();
        suclh = lookupStaffclassBean();
        ilh = lookupInterviewdateBean();
        sklh = lookupScskillsBean();
        ntlh = lookupNexttermBean();
        nslh = lookupNeatnessscaleBean();
        nnlh = lookupNeatnessBean();
        mslh = lookupMathsskillsBean();
        eslh = lookupEngskillsBean();
        aprlh = lookupAbspresBean();
        cmlh = lookupCommentsBean();
        skslh = lookupSkillsscaleBean();
        pprlh = lookupPaymentRequestBean();
        eelh = lookupExternalexamsBean();
```

```java
            exlh = lookupExambodyBean();
            oclh = lookupOthercategoryBean();
            ocllh = lookupOtherclassBean();
        }

    /**
     * @see javax.ejb.SessionBean#ejbRemove()
     */
    public void ejbRemove() {

    }
    // </editor-fold>

    /**
     * See section 7.10.3 of the EJB 2.0 specification
     * See section 7.11.3 of the EJB 2.1 specification
     */
    public void ejbCreate() {
        // TODO implement ejbCreate if necessary, acquire resources
        // This method has access to the JNDI context so resource
aquisition
        // spanning all methods can be performed here such as home
interfaces
        // and data sources.
        adlh = lookupAdmissionnoBean();
        aslh = lookupAdmittedstudentsBean();
        aplh = lookupApplicationsBean();
        clh = lookupClassesBean();
        calh = lookupClubactivitiesBean();
        cllh = lookupClubsBean();
        crlh = lookupCourseregistrationBean();
        elh = lookupExpulsionBean();
        frlh = lookupFeesregistrationBean();
        llh = lookupLgaBean();
        mmlh = lookupMinmaxcoursesBean();
        nlh = lookupNationalityBean();
        plh = lookupProspectusBean();
        rlh = lookupRegisteredstudentsBean();
        sclh = lookupSchoolcalendarBean();
        sslh = lookupSessionsBean();
        solh = lookupStateoforiginBean();
        sulh = lookupStudentclubBean();
        stslh = lookupStudentsportBean();
        stclh = lookupStudentclassBean();
        slh = lookupSubjectsBean();
        ttlh = lookupTimetableBean();
        uplh = lookupUnusedpinBean();
        ulh = lookupUsedpinBean();
        uslh = lookupUserBean();
        ylh = lookupYearsBean();
        csslh = lookupClasssubjectsBean();
        sllh = lookupSportsBean();
        trlh = lookupTermlyresultBean();
        trlh = lookupTermlyresultBean();
        suclh = lookupStaffclassBean();
        olh = lookupOverallresultBean();
        ilh = lookupInterviewdateBean();
        sklh = lookupScskillsBean();
        ntlh = lookupNexttermBean();
        nslh = lookupNeatnessscaleBean();
        nnlh = lookupNeatnessBean();
```

```java
        mslh = lookupMathsskillsBean();
        eslh = lookupEngskillsBean();
        aprlh = lookupAbspresBean();
        cmlh = lookupCommentsBean();
        skslh = lookupSkillsscaleBean();
        pprlh = lookupPaymentRequestBean();
        eelh = lookupExternalexamsBean();
        exlh = lookupExambodyBean();
        oclh = lookupOthercategoryBean();
        ocllh = lookupOtherclassBean();
    }


    // Add business logic below. (Right-click in editor and choose
    // "EJB Methods > Add Business Method" or "Web Service > Add
Operation")

    private AdmissionnoLocalHome lookupAdmissionnoBean() {
        try {
            Context c = new InitialContext();
            AdmissionnoLocalHome rv = (AdmissionnoLocalHome) c.lookup
("java:comp/env/ejb/AdmissionnoBean");
            return rv;
        }
        catch(NamingException ne) {
            Logger.getLogger(getClass().getName()).log
(Level.SEVERE,"exception caught" ,ne);
            throw new RuntimeException(ne);
        }
    }

    private AdmittedstudentsLocalHome lookupAdmittedstudentsBean() {
        try {
            Context c = new InitialContext();
            AdmittedstudentsLocalHome rv = (AdmittedstudentsLocalHome)
c.lookup("java:comp/env/ejb/AdmittedstudentsBean");
            return rv;
        }
        catch(NamingException ne) {
            Logger.getLogger(getClass().getName()).log
(Level.SEVERE,"exception caught" ,ne);
            throw new RuntimeException(ne);
        }
    }

    private ApplicationsLocalHome lookupApplicationsBean() {
        try {
            Context c = new InitialContext();
            ApplicationsLocalHome rv = (ApplicationsLocalHome) c.lookup
("java:comp/env/ejb/ApplicationsBean");
            return rv;
        }
        catch(NamingException ne) {
            Logger.getLogger(getClass().getName()).log
(Level.SEVERE,"exception caught" ,ne);
            throw new RuntimeException(ne);
        }
    }

    private ClassesLocalHome lookupClassesBean() {
```

```java
        try {
            Context c = new InitialContext();
            ClassesLocalHome rv = (ClassesLocalHome) c.lookup
("java:comp/env/ejb/ClassesBean");
            return rv;
        }
        catch(NamingException ne) {
            Logger.getLogger(getClass().getName()).log
(Level.SEVERE,"exception caught" ,ne);
            throw new RuntimeException(ne);
        }
    }

    private ClubactivitiesLocalHome lookupClubactivitiesBean() {
        try {
            Context c = new InitialContext();
            ClubactivitiesLocalHome rv = (ClubactivitiesLocalHome)
c.lookup("java:comp/env/ejb/ClubactivitiesBean");
            return rv;
        }
        catch(NamingException ne) {
            Logger.getLogger(getClass().getName()).log
(Level.SEVERE,"exception caught" ,ne);
            throw new RuntimeException(ne);
        }
    }

    private ClubsLocalHome lookupClubsBean() {
        try {
            Context c = new InitialContext();
            ClubsLocalHome rv = (ClubsLocalHome) c.lookup
("java:comp/env/ejb/ClubsBean");
            return rv;
        }
        catch(NamingException ne) {
            Logger.getLogger(getClass().getName()).log
(Level.SEVERE,"exception caught" ,ne);
            throw new RuntimeException(ne);
        }
    }

    private CourseregistrationLocalHome lookupCourseregistrationBean() {
        try {
            Context c = new InitialContext();
            CourseregistrationLocalHome rv =
(CourseregistrationLocalHome) c.lookup
("java:comp/env/ejb/CourseregistrationBean");
            return rv;
        }
        catch(NamingException ne) {
            Logger.getLogger(getClass().getName()).log
(Level.SEVERE,"exception caught" ,ne);
            throw new RuntimeException(ne);
        }
    }

    private ExpulsionLocalHome lookupExpulsionBean() {
        try {
            Context c = new InitialContext();
            ExpulsionLocalHome rv = (ExpulsionLocalHome) c.lookup
("java:comp/env/ejb/ExpulsionBean");
```

```java
                return rv;
        }
        catch(NamingException ne) {
            Logger.getLogger(getClass().getName()).log
(Level.SEVERE,"exception caught" ,ne);
            throw new RuntimeException(ne);
        }
    }

    private FeesregistrationLocalHome lookupFeesregistrationBean() {
        try {
            Context c = new InitialContext();
            FeesregistrationLocalHome rv = (FeesregistrationLocalHome)
c.lookup("java:comp/env/ejb/FeesregistrationBean");
            return rv;
        }
        catch(NamingException ne) {
            Logger.getLogger(getClass().getName()).log
(Level.SEVERE,"exception caught" ,ne);
            throw new RuntimeException(ne);
        }
    }

    private LgaLocalHome lookupLgaBean() {
        try {
            Context c = new InitialContext();
            LgaLocalHome rv = (LgaLocalHome) c.lookup
("java:comp/env/ejb/LgaBean");
            return rv;
        }
        catch(NamingException ne) {
            Logger.getLogger(getClass().getName()).log
(Level.SEVERE,"exception caught" ,ne);
            throw new RuntimeException(ne);
        }
    }

    private MinmaxcoursesLocalHome lookupMinmaxcoursesBean() {
        try {
            Context c = new InitialContext();
            MinmaxcoursesLocalHome rv = (MinmaxcoursesLocalHome)
c.lookup("java:comp/env/ejb/MinmaxcoursesBean");
            return rv;
        }
        catch(NamingException ne) {
            Logger.getLogger(getClass().getName()).log
(Level.SEVERE,"exception caught" ,ne);
            throw new RuntimeException(ne);
        }
    }

    private NationalityLocalHome lookupNationalityBean() {
        try {
            Context c = new InitialContext();
            NationalityLocalHome rv = (NationalityLocalHome) c.lookup
("java:comp/env/ejb/NationalityBean");
            return rv;
        }
        catch(NamingException ne) {
            Logger.getLogger(getClass().getName()).log
(Level.SEVERE,"exception caught" ,ne);
```

```java
                throw new RuntimeException(ne);
            }
        }

    private ProspectusLocalHome lookupProspectusBean() {
        try {
            Context c = new InitialContext();
            ProspectusLocalHome rv = (ProspectusLocalHome) c.lookup
("java:comp/env/ejb/ProspectusBean");
            return rv;
        }
        catch(NamingException ne) {
            Logger.getLogger(getClass().getName()).log
(Level.SEVERE,"exception caught" ,ne);
            throw new RuntimeException(ne);
        }
    }

    private RegisteredstudentsLocalHome lookupRegisteredstudentsBean() {
        try {
            Context c = new InitialContext();
            RegisteredstudentsLocalHome rv =
(RegisteredstudentsLocalHome) c.lookup
("java:comp/env/ejb/RegisteredstudentsBean");
            return rv;
        }
        catch(NamingException ne) {
            Logger.getLogger(getClass().getName()).log
(Level.SEVERE,"exception caught" ,ne);
            throw new RuntimeException(ne);
        }
    }

    private SchoolcalendarLocalHome lookupSchoolcalendarBean() {
        try {
            Context c = new InitialContext();
            SchoolcalendarLocalHome rv = (SchoolcalendarLocalHome)
c.lookup("java:comp/env/ejb/SchoolcalendarBean");
            return rv;
        }
        catch(NamingException ne) {
            Logger.getLogger(getClass().getName()).log
(Level.SEVERE,"exception caught" ,ne);
            throw new RuntimeException(ne);
        }
    }

    private SessionsLocalHome lookupSessionsBean() {
        try {
            Context c = new InitialContext();
            SessionsLocalHome rv = (SessionsLocalHome) c.lookup
("java:comp/env/ejb/SessionsBean");
            return rv;
        }
        catch(NamingException ne) {
            Logger.getLogger(getClass().getName()).log
(Level.SEVERE,"exception caught" ,ne);
            throw new RuntimeException(ne);
        }
    }
```

```java
                return rv;
            }
        catch(NamingException ne) {
            Logger.getLogger(getClass().getName()).log
(Level.SEVERE,"exception caught" ,ne);
            throw new RuntimeException(ne);
            }
    }

    private TimetableLocalHome lookupTimetableBean() {
        try {
            Context c = new InitialContext();
            TimetableLocalHome rv = (TimetableLocalHome) c.lookup
("java:comp/env/ejb/TimetableBean");
            return rv;
        }
        catch(NamingException ne) {
            Logger.getLogger(getClass().getName()).log
(Level.SEVERE,"exception caught" ,ne);
            throw new RuntimeException(ne);
        }
    }

    private UnusedpinLocalHome lookupUnusedpinBean() {
        try {
            Context c = new InitialContext();
            UnusedpinLocalHome rv = (UnusedpinLocalHome) c.lookup
("java:comp/env/ejb/UnusedpinBean");
            return rv;
        }
        catch(NamingException ne) {
            Logger.getLogger(getClass().getName()).log
(Level.SEVERE,"exception caught" ,ne);
            throw new RuntimeException(ne);
        }
    }

    private UsedpinLocalHome lookupUsedpinBean() {
        try {
            Context c = new InitialContext();
            UsedpinLocalHome rv = (UsedpinLocalHome) c.lookup
("java:comp/env/ejb/UsedpinBean");
            return rv;
        }
        catch(NamingException ne) {
            Logger.getLogger(getClass().getName()).log
(Level.SEVERE,"exception caught" ,ne);
            throw new RuntimeException(ne);
        }
    }

    private UserLocalHome lookupUserBean() {
        try {
            Context c = new InitialContext();
            UserLocalHome rv = (UserLocalHome) c.lookup
("java:comp/env/ejb/UserBean");
            return rv;
        }
        catch(NamingException ne) {
            Logger.getLogger(getClass().getName()).log
(Level.SEVERE,"exception caught" ,ne);
```