Design and Implementation of Hostel Management System (HOMASY): LASU as Case Study.

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ABSTRACT

A hostel management system (HOMASY) was designed to provide a computerized process that is stress free, reliable and quick through the use of PHP computer programming language and MySQL database application to both the students and the staff in charge of the registration and hostel management processes. HTML would be at the front-end and provide the graphical user interface that relates with the user, while the MySQL database will be at the back-end to handle the data storage process. The porter and students' affairs officers will also be able to access and create student records with ease and regular update of student profile is enhanced when adopted.

The usual practice of filing and procedures involved in students' registration and hostel accommodation in Lagos State University and other university was appraised for efficiency, economics and time management. The existing procedure was formed to be manually carried out. This is associated with inadequacies as more personnel are often required and a lot of times are wasted while the semester is on with lectures and other activities.

(Keywords: allocation, hostel, management, MySQL, porter, records, registration, accomodation)

INTRODUCTION

The usual practices in accommodating students at Lagos State University, as well as other universities, involve students going to the Students' Affairs office to fill out a form for registration. Thereafter, students are registered for the new session by providing a bank teller/receipt of payment and a new hostel accommodation would be allocated to the student. After registration, students' profiles are transferred to the porter's lodge where students will receive a mattress, pillow, and so on. Unfortunately, these processes are carried out manually with pen and papers; an unreliable procedure which is associated with inefficiencies.

The process of hostel registration in many universities employs a parochial system that involves students going to the Students' Affairs Office to fill out a form for registration. This form seeks to find out details of the student. Thereafter, students will register for the new session by providing a bank teller receipt to show payment has been made and a new hostel would be allocated to the student. After registration, students' profiles would be transferred to the porter's lodge where students will receive a mattress, pillow, chairs, and tables. Unfortunately, these processes are carried out manually with pen and papers, an unreliable procedure which also wastes time. A scheme of such traditional practices is shown in Figure 1.

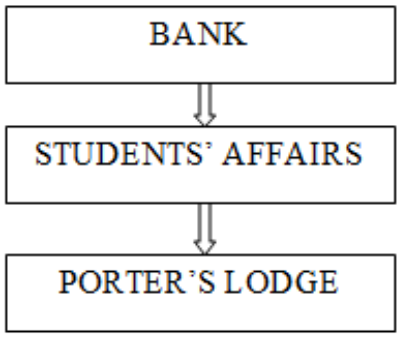

Figure 1: Traditional Registration System

The proposed user interface is illustrated in Figure 2 in block diagram.

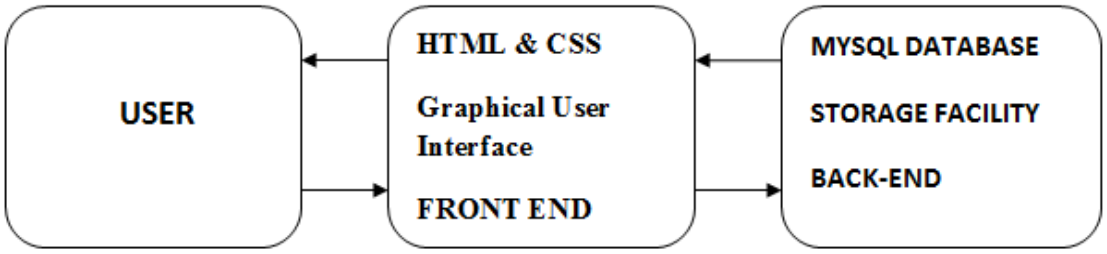

Figure 2: Block Diagram of the Front and Back End Relationship.

E-Registration refers to a new class of registration system that enables students' registration without or with little use of paper work. It is a software package developed to facilitate the processes involved in the registration of hostel. Since the conventional hostel registration system makes use of tedious administrative tasks, lots paper work and time, the goal of the hostel management system is to provide a computerized process that is stress free, reliable and quick through the use of PHP computer programming language and MySQL database application to both the students and the staff in charge of the registration and hostel management processes. HTML would be at the front-end and provide the graphical user interface that relates with the user, while the MySQL database will be at the back-end to handle the data storage process.

The objective of this project is to implement an electronic hostel management system that will streamline registration process, reduce administrative tasks and paper work so as to improve the registration cycle process flow.

LITETRATURE REVIEW

E-registration seeks to simplify the students' affairs / porters' operation. The stages involved in the registration process must be reduced to nearest minimum if it is to be faster and more convenient. Paper-based processes of registration are time consuming and expensive. The student usually has go through several layers of authorization, generating many documents along the way. An increase in the number of student will obviously mean more paper work and less efficiency of the traditional registration system, hence, many Universities are finding the e-registration a better and more effective way of catering for the inconvenience and inefficiency of the traditional system of registration.

E-registration for hostel accommodation plays a vital role in the transition and if effectively implemented, it will achieve the following:

- Reduce paper work and redundancy thereby improving productivity and lowering cost of printing and purchasing registration materials annually.
- Aid the school in data management and integration of students' profiles.
- Provide the school's statistics on the need of students (e.g., mattress, pillows, tables, chairs, etc.).
- Aid the school to give account of student with ease at any time.

MATERIALS AND METHODS

System Analysis and Design

System analysis is a method of problem-solving that deals with the breaking down of a system into components parts in order to study how well the individual parts work and interact to accomplish their purpose. It involves the process of enumerating the existing problems, analyzing the proposed system for costs and benefits, analyzing the system and user requirements, and considering possible alternative system.

System analysis is important in the design of subsequent systems. System design consists of design activities that produce system specifications which satisfy the functional requirements that have been developed in the system analysis process. System design is basically the structural implementation of system analysis. The proposed system is being designed in such a way that students only need

to input their data online which is then entered into a computer database. Students will also upload a passport photograph to their profile for easy identification.

TOOLS

Graphical User Interface

Hypertext Markup Language (HTML) is the basic language used for creating web pages and other information that can be displayed in a web browser. The purpose of a web browser is to read HTML documents and compose them into visible or audible web pages. The browser doesn't display the HTML tags, but uses the tags to interpret the concept of the page.

Hypertext Markup Language

HTML elements form the building blocks of all websites, allows images and objects to be embedded and can to be used to create interactive forms. It provides a means to create structured documents by denoting structural semantics for txt such as heading, paragraphs, lists, links, quotes, and so on. It can also embed scripts written in languages such as JavaScript which affect the behavior of HTML web pages. HTML consists of several key components, including tags and their attributes, character-based data types, character references and entity references. An important component is the document type declaration, which triggers standards mode rendering.

Cascading Style Sheets

CSS is a style sheet language used for describing the look and formatting of a document written in a markup language. While most often used to style web pages and interfaces written in HTML and XHTML, the language can be applied to any kind of XML document, including plain XML, SVG and XUL. CSS is designed basically to enable the separation of document content from document presentation, including elements such as layout, colors, and fonts. This improves content accessibility, provides flexibility and control in the specification of presentation characteristics, enable multiple pages to share formatting and reduce complexity and repetition in the structural content, for instance, allowing tableless web design. CSS can also allow the same markup page to be presented in different styles for different rendering methods such as on-screen, in print and on Braille-based, tactile devices. CSS specifies a priority scheme to determine which style rules apply if more than one rule matches against a particular element. Priorities are calculated and assigned to rules, so that the results are predictable.

Hypertext Preprocessor

PHP is a server-side scripting language designed for web development but also used as a general-purpose programming language. PHP code may be embedded into HTML code, or it can be used in combination with various Web template systems and web frameworks. PHP code is usually processed by a PHP interpreter (computing) interpreter implemented as a plug-in (computing) module in the web server or as a Common Gateway Interface (CGI) executable. The web server combines the results of the interpreted and executed PHP code, which may be any type of data, including images, with the generated web page.

MySQL

MySQL (structured query language) is an open-source relational database management system (RDBMS), the world's second most used relational database following SQLite. It is deployed with every Android (operating system) and iPhone device along with the Google Chrome and Firefox browsers. The MySQL development project has made its source code available under the terms of the GNU General Public License, as well as under a variety of proprietary software agreements. MySQL is a popular choice of database for use in web applications, and is a central component of the widely used LAMP (software bundle) open source web application software stack and other list of AMP packages. Free software-open source projects that require a full-featured database management system often use MySQL.

System Requirement

System requirement is a description of the needs of a user for an information system. The unique requirements of a user are identified here.

User Requirements

To gain access to the e-registration system, the user would need:

- A personal computer
- A username
- A genuine password

User-Interface Requirements

User interfaces are the registration pages developed for the students to register and the porters to manage the students. They consist of the following:

- Home page (students and porters)
- Allocation page (porter)
- Check available and taken hostels (porter)
- Manage hostel (porter)
- Search for student (porter)
- Register a new user or administrator (porter)
- Fill in credentials
- Search available hostels
- Download documents

Modeling the System

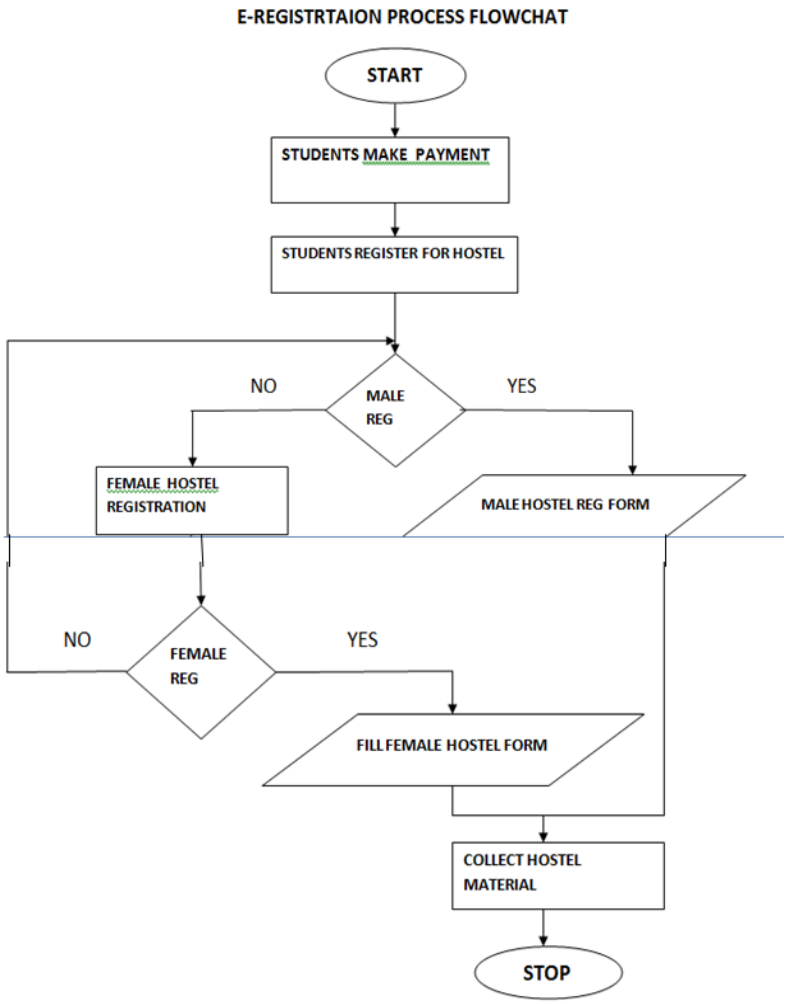

Figure 3: E-Registration Process Flowchart.

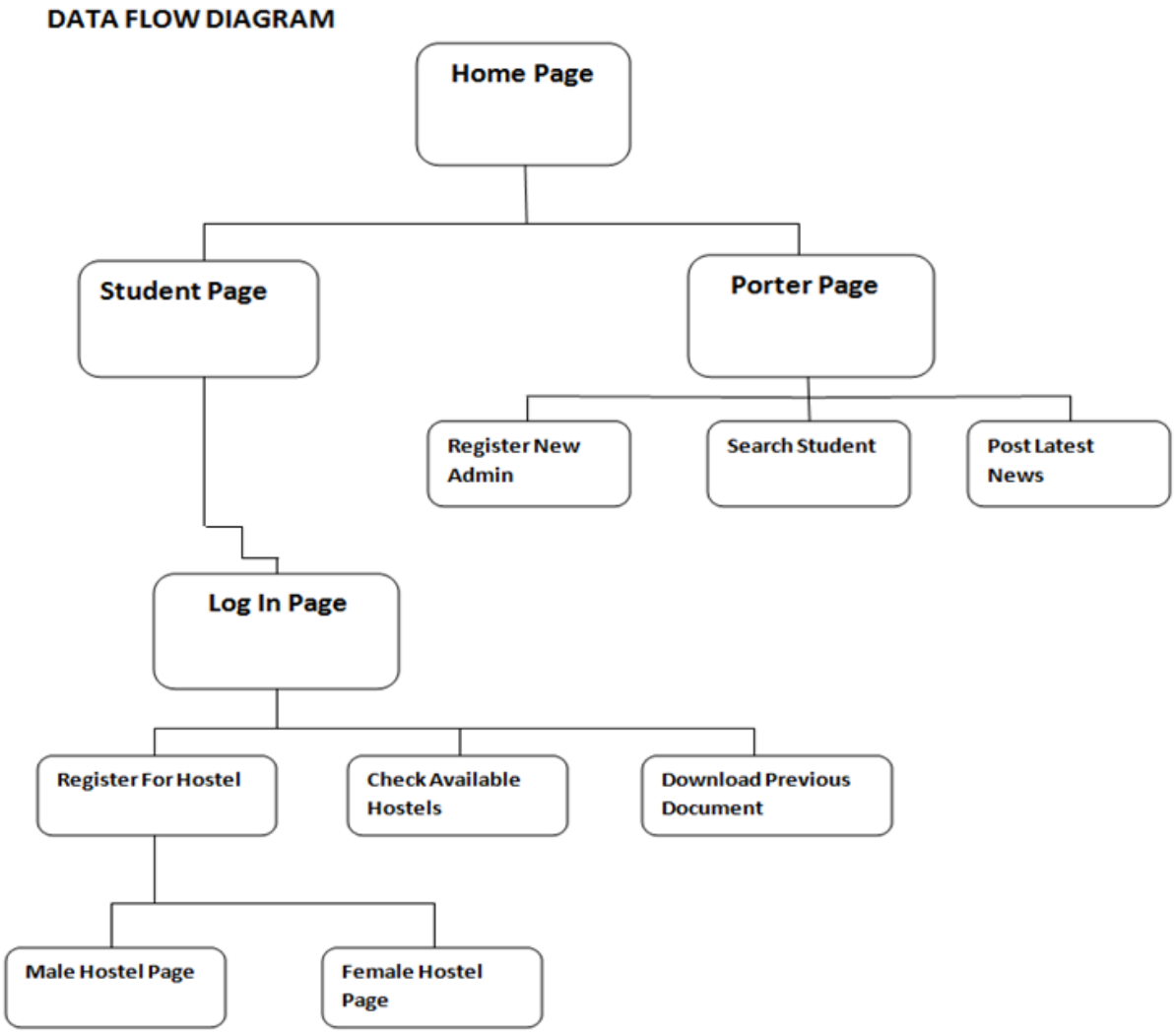

Figure 4: Data Diagram.

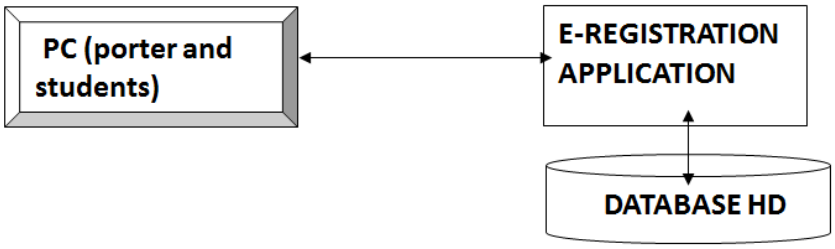

Figure 5: System Design and Architecture.

DESIGN IMPLEMENTATION & RESULTS

Design implementation refers to the real live running of the designed program. This section consists of the program modules, showing what they represent, and how the system can be deployed.

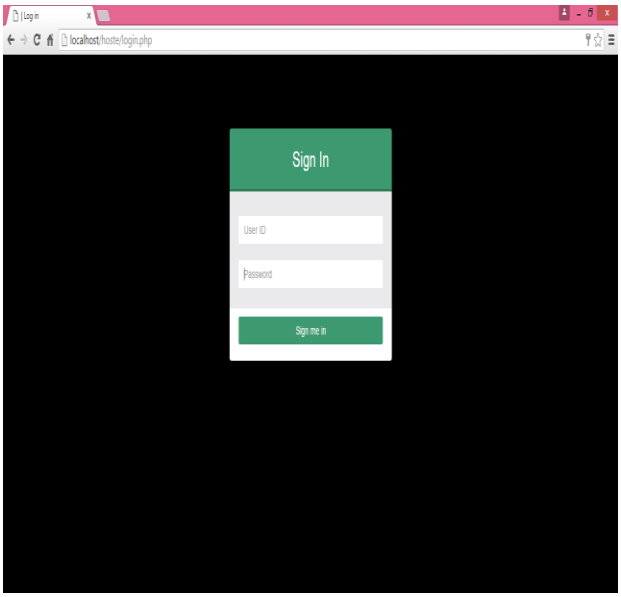

Figure 6: Home Page.

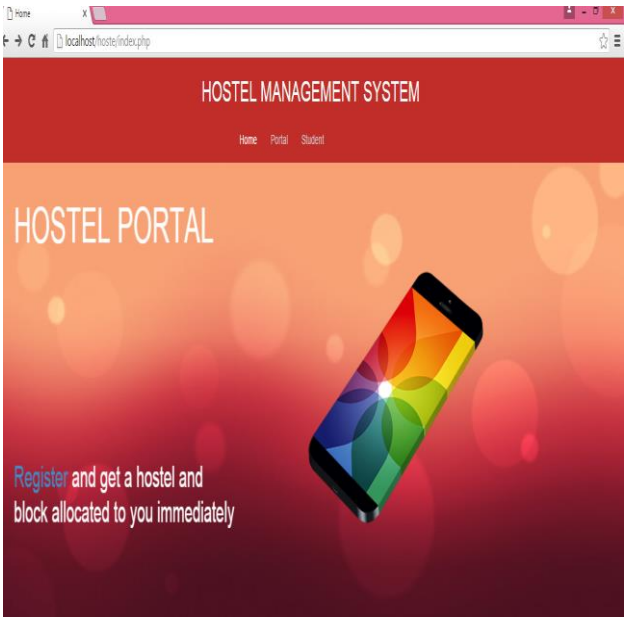

Figure 7: Porter Login Page.

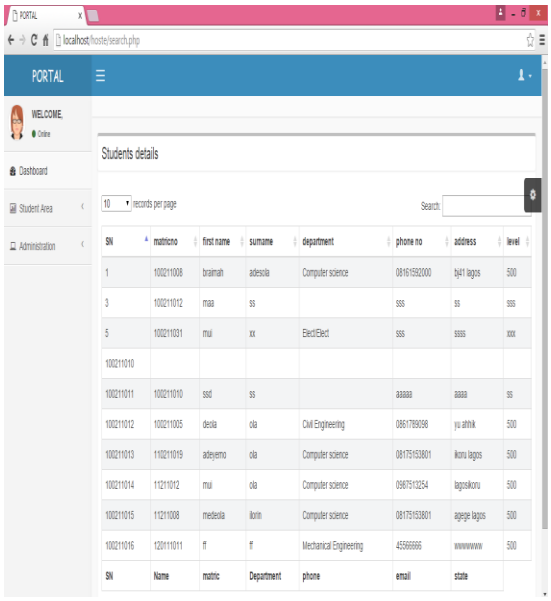

Figure 8: Search Student Page.

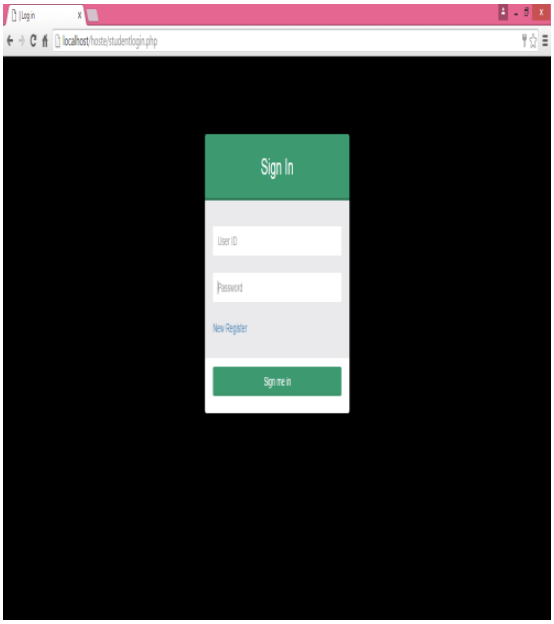

Figure 9: Student Login Page.

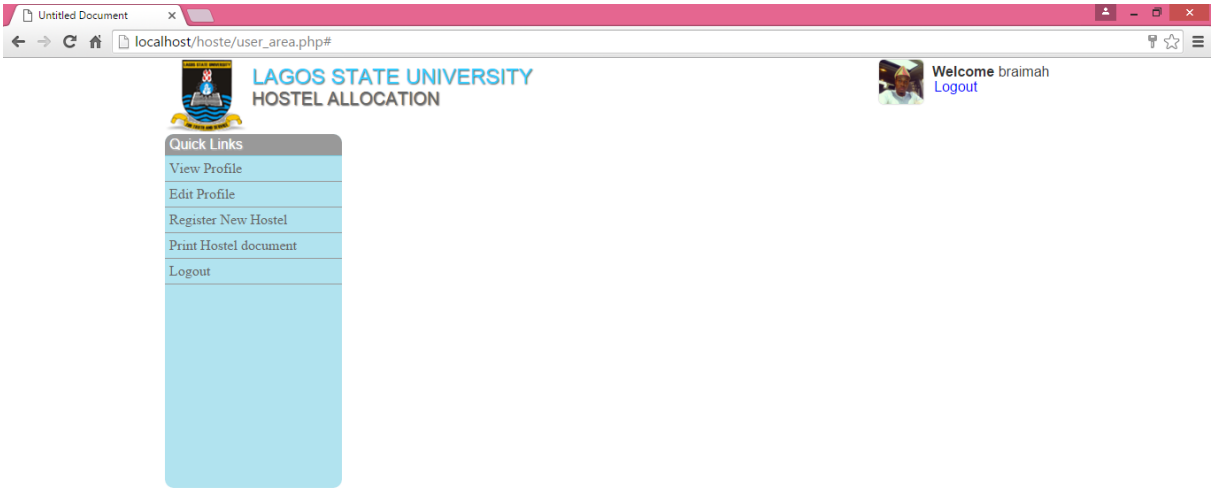

Figure 10: Student Welcome Page.

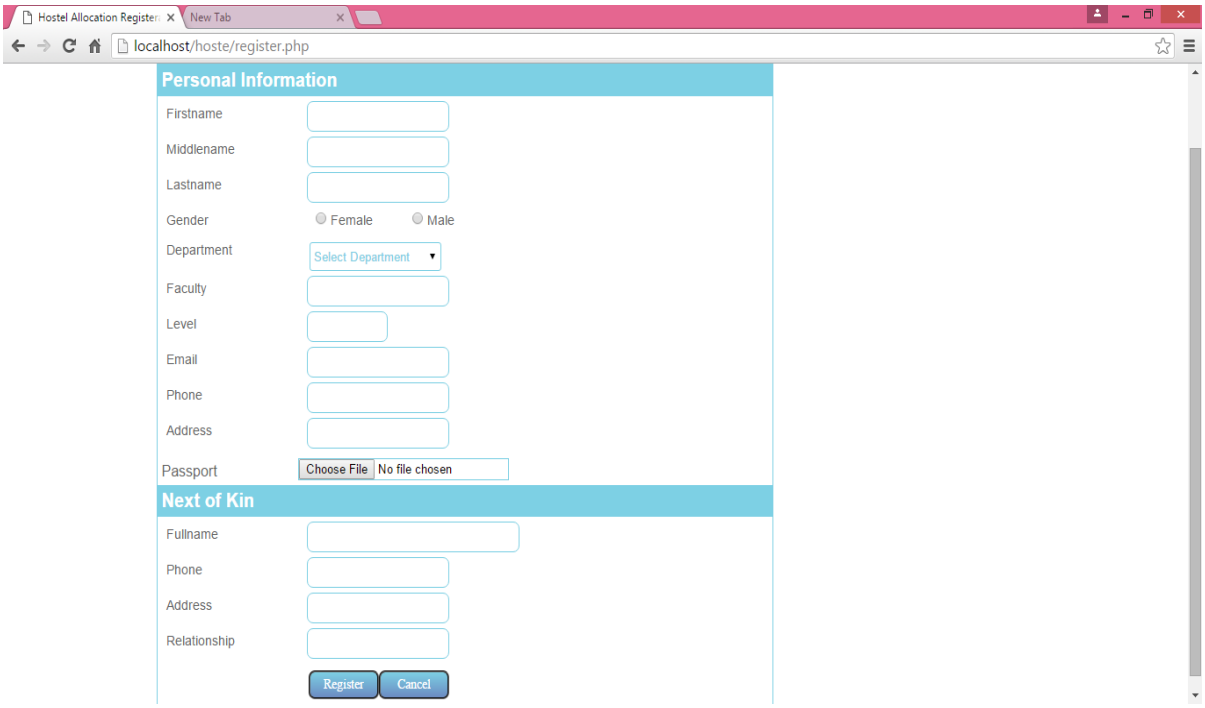

Figure 11: Register New Student Page.

CONCLUSION

The introduction of an electronic system of registration focuses on saving cost, improving the efficiency of the processes involved in both registration and management of hostels and makes the overall procedure stress free. The hostel management system is aimed at streamlining the registration and management process of hostels for both students and the administrators in charge of the procedures involved. It is to eliminate unnecessary administrative tasks and reduce or even avoid paper work. This system will help improve productivity and reliability of the hostel registration and management process in a more efficient manner.

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