Design and Implementation of an Internet Based Hostel Accommodation System

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Abstract: *The "DESIGN AND IMPLEMENTATION OF AN INTERNET BASED HOSTEL ACCOMODATION SYSTEM" is designed to manage all the hostel activities like hostel admissions, fees, room, mess allotment, hostel stores & generates related reports for smooth transactions. This is all about the activities which is regulated on this website and is maintained by the admin as well. Less human error, Strength and strain of manual labour can be reduced, High security, Data redundancy can be avoided to some extent, Data consistency, Easy to handle, Easy data updating, Easy record keeping, Backup data can be easily generated.*
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Keywords: Accommodation System

I. SOFTWARE SPECIFICATION

1.1 Front End
In this project we use HTML, CSS, and Java script for front end. The "Front End" is the stuff you see on the website in your web browser.

1.2 Back End
In this project we use as MYSQL,PHP for back end . They manipulate date appropriately to make sure the front end as what it needs. This can became more complicated as things scale.

1.3 Software Description
Front End
HTML
Hypertext Mark-up Language (HTML) is the standard mark-up language for creating web pages and web applications.HTML elements are the building blocks of HTML pages.

CSS
CSS is designed to enable the separation of presentation and content, including layout, colours, and fonts.

JAVA
Both languages use syntaxes influenced by that of C syntax, and JavaScript copies many Java names and naming conventions.

PHP
The original release of PHP was designed by RasmusLedorf back in the Middle of the 90s as a way of making various common web tasks easier and less respective. order to achieve results, and this led to PHP begin HTML -centric-that is, PHP code was embedded inside HTML.
- PHP supports many databases (MYSQL, Informix, Oracle, Sybase, Solids, PostgreSQL, Generic ODBC,etc.)
- PHP is mainly focused on server-side scripting, so you can do any think any other CGI program can do, such as form data, dynamic page content, or send and receive cookies. But PHP can do much more.

- PHP is a widely-used Open Source general-purpose scripting language that is especially suited for web development and can be embedded into HTML. (including HP-UX, Solaris and Opens), Microsoft Windows, Mac OS X,RISC OS, and probably others. PHP has also support for most of the web servers today. This include Apache, Microsoft Internet Information Server, Personal Webserver Netscape and iPlanet servers, orielly Website Pro server, Caladium, Xitami, OmniHTTPd, and many others.

MY SQL:
One of the most powerful SQL servers out there is called MySQL and surprisingly enough, it's free.

Some of the features of MySQL Include
- The MySQL Database server is very fast, reliable, and easy to use. If that is what we are looking for, we should give it try; MySQL Server also has a practical set of features developed in close cooperation with users.
- Passwords are secure since all password traffic when connecting to a server is encrypted. Even several corporate web sites have started using MySQL
- MySQL is a powerful Relational Database Management System (RDBMS) which we will use to learn the basic principles of database and data manipulation using Structured Query Language (SQL) statements.
- SQL is a database language that is used to retrieve, insert, delete and update stored data.
- This is achieved by constructing conditional statements that conform to a specific syntax (i.e. the strict order required of elements for a statement to work).
- Although it is assumed that most people reading this know what a database and SQL are (if not necessarily how to use them), there follows a little recap that it does no harm.

1.4 Application Server
WAMP
WAMP Stands for "Windows, Apache, MySQL, and PHP." WAMP is a variation of LAMP for windows system and is often installed as a software bundle (Apache, MySQL, and PHP). It is often used for web development and internal testing, but may also be used to serve live websites.
The most important part of the WAMP package is Apache (or "Apache HTTP Server") which is used run the web server within Windows. By running a local Apache web server on a Windows machine, a web developer can test webpages in a web browser without publishing them live on the Internet.
WAMP also includes MySQL and PHP, which are two of the most common technologies used for creating dynamic websites. MySQL is a high-speed database, while PHP is a scripting language that can be used to access data from the database. By installing these two components locally, a developer can build and test a dynamic website before publishing it to a public web server.
While Apache, MySQL, and PHP are open source components that can be installed individually, they are usually installed together. One popular package is called "WampServer," which provides a user-friendly way to install and configure the "AMP" components on Windows.

II. SYSTEM ANALYSIS
The Systems analysis is a process of collecting factual data, understanding the processes involved, identifying problems and recommending feasible suggestions for improving the functionality of the system. This involves studying the business processes, entity relationships gathering operational data, understand the information flow, finding out bottlenecks and evolving solutions for overcoming the weaknesses of the system so as to achieve the organizational goals. System Analysis also includes decoupling of complex processes that make up the entire system, identification of manual processes.

2.1 Existing System

The population of students gaining admission to higher institutions is increasing on yearly basis. This is putting enormous pressure on the facilities in these institutions. Adopting the conventional manual scheduling methods to the facility management job is the common practice in most institutions here in developing world. This method is characterized by numerous drawbacks, some of which are human error, low security, data redundancy, difficulty in management, difficulty in data update, difficulty in recordkeeping, difficulty in data recovery in case of disaster etc.

Advantages of the Existing System

- Power supply does not affect the operation of the current system.
- The current system can be used by both computer literates and non-computer literates.

2.2 Proposed System

This project is aimed at developing a system for keeping records and showing information about or in a hostel. This system will help the hostel officer to be able to manage the affairs of the hostel.

This system will provide full information about a student in the hostel. It will show rooms available or not and number of people in a particular room. This will also provide information on students who have paid in full are still owing. This system will also provide a report on the summary detail regarding fees and bills students are owing. Also included is a user module for employees or the hostel officer. There will also be an administrator module which will access by the administrator and has the ability to delete, add and edit records.

This system will be developed based on Software Development Life Cycle (SDLC) with PHP and My SQL server. PHP is good for the development and design of web based programs whiles My SQL is good for databases because of its security and its advanced features and properties.

2.3 Benefits

- It is less time and effort consuming.
- It makes the process of updating the data is fast.
- It automates mundane tasks.
- It secures the data of the students.
- It reduces the manual work of management.
- It enhances the reputation of the educational institute.

Managing a hostel is a tedious task that needs a lot of supervision and can be time consuming. The hostel management system is a dynamic as well as practical approach as it makes managing the boarding and other related facilities a lot easier. It also helps securely store and manage the data of the students, allowing access to a few authorized staff members only.

Another important benefit of implementing such a system is that it brings in the transparency in the entire management which helps to develop a trust between the students and the management.

III. PROJECT DESCRIPTION

3.1 Module Description

The modules that can be included in the hostel accommodation system are as follows:

- **USER:** This module will help in creating the new users with the login credentials.
- **CHANGE PASSWORD:** This module will help in changing the password of the user.
- **FORGET PASSWORD:** This module will help inresetting the password of the account of the user.
- **REGISTRATION:** This module will help in maintaining the details like academic information, personal information, room details etc.,
- **ROOM DETAILS:** The module will help the user to add the room details and update the status of the rooms like whether it is vacant or occupied.
- **FEES:** This module will help to add the fees of the students and also allow updating or deleting the fees entered.

- **MANAGE STUDENT:** The manage student module will contain two sub modules, that is manage existing student and add new student. In manage existing student module we can manipulate the existing student information, and update.
- **MANAGE COURSE**: In manage course module we have to modules. In manage existing subject module we can manipulate and update the existing subjects.
- **LOGOUT:** After the student is done using the system, they can Logs out.
- **SYSTEM DESIGN:** The system design is divided in to two portions. The Administrator section and the User (student's) section.

Administrator
1. The Administrator can allot different students to the different hostels.
2. He can vacate the students for the hostels.
3. He can control the status of the fee payment.
4. He can edit the details of the students. He can change their rooms, edit and delete the student records.

A process of converting user originated inputs to a computer-based format. Input design is an important part of development process since inaccurate input data are the most common cause of errors in data processing. Erroneous entries can be controlled by input design. It consists of developing specifications and procedures for entering data into a system and must be in simple format. The goal of input data design is to make data entry as easy, logical and free from errors as possible. In input data design, we design the source document that capture the data and then select the media used to enter them into the computer.

3.2 Input Design
Input design is the link that ties the information system into the world of its users. The input design involves determining the inputs, validating the data, minimizing the data entry and provides a multi – user facility. In accurate inputs are the most common cause of errors in data processing. Errors entered by the data entry operators can be controlled by input design. The user- originated inputs are converted to a computer based format in the input design.
Input data are collected and organized into groups of similar data. Once identified, the appropriate input media are selected for processing. All the input data are validated and is any if data violates any conditions, the user is warned by a message. If the data satisfied all the conditions, it is transferred to the appropriate tables in the database. In this project the student details are to be entered at the time of registration. A page is designed for this purpose which is user friendly and easy to use. The design is done such that users get appropriate messages when exceptions occur.

3.3 Output Design
Computer output is the most important and direct source of information to the user. Output design user is a very important phase since the output needs to be efficient manner. Efficient and intelligible output design improves the system relationship with the user and helps in decision making.

3.4 Data Flow Diagram
A data flow diagram (DFD) maps out the flow of information for any process or system. It uses defined symbols like rectangles, circles and arrows, plus short text labels, to show data inputs, outputs, storage points and the routes between each destination. Data flowcharts can range from simple, even hand-drawn process overviews, to in-depth, multi-level DFDs that dig progressively deeper into how the data is handled. They can be used to analyse an existing system or model a new one. Like all the best diagrams and charts, a DFD can often visually "say" things that would be hard to explain in words, and they work for both technical and nontechnical audiences, from developer to CEO. That's why DFDs remain so popular after all these years. While they work well for data flow software and systems, they are less applicable nowadays to visualizing interactive, real-time or database-oriented software or systems.

IV. SYSTEM TESTING AND IMPLEMENTATION

4.1 Testing

Testing is the process or activity that checks the functionality and correctness of software according to specified user requirements in order to improve the quality and reliability of system. It is an expensive, time consuming, and critical approach in system development which requires proper planning of overall testing process.

A successful test is one that finds the errors. It executes the program with explicit intention of finding error, i.e., making the program fail. It is a process of evaluating system with an intention of creating a strong system and mainly focuses on the weak areas of the system or software.

4.2 Unit Testing

A unit test is a way of testing a unit - the smallest piece of code that can be logically isolated in a system. In most programming languages, that is a function, a subroutine, a method or property. The isolated part of the definition is important. In his book "Working Effectively with Legacy Code", author Michael Feathers states that such tests are not unit tests when they rely on external systems: "If it talks to the database, it talks across the network, it touches the file system, it requires system configuration, or it can't be run at the same time as any other test."

4.3 Integration Testing

Integration testing is a type of testing meant to check the combinations of different units, their interactions, and the way subsystems unite into one common system, and code compliance with the requirements.Integration testing is performed using the black box method. This method implies that a testing team interacts with an app and its units via the user interface – by clicking on buttons and links, scrolling, swiping, etc. They don't need to know how code works or consider the backend part of the components.

V. CONCLUSION

The project entitled "Design and implantation of an internet based hostel accommodation system" was completed successfully. To conclude the description about the project, the project developed using PHP and MySQL is based on the requirement specification of the user and the analysis of the existing system, with flexibility for future enhancement. The expanded functionality of today's software requires an appropriate approach towards software development.   This hostel management software is designed for people who want to manage various activities in the hostel. For the past few years the number of educational institutions is increasing rapidly. Thereby the number of hostels is also increasing for the accommodation of the students studying in this institution. And hence there is a lot of strain on the person who are running the hostel and software's are not usually used in this context. This particular project deals with the problems on managing a hostel and avoids the prob6glems which occur when carried manually. Identification of the drawbacks of the existing system leads to the designing of computerized system that will be compatible to the existing system with the system which is more users friendly and more GUI oriented.

FUTURE ENHANCEMENT

Hostel Accommodation System (HAS).The hostel management software is designed for people who want to manage various activities in the hostel. This project is designed to fulfil the need of the future generation. This project is a small package which includes different category as well as having all the possible features. We have expected that it will helpful to the, administrative member. We will improve this project in future with online room reservation system and also improve in security. We are waiting for your best suggestion and encouragement which could make us improve the future programming much better than one we have carried out.

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