

REPORT

GH13 Online Merit based Hostel Management System

Smart Gujarat Hackathon 2018

TEAM ID-1224

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1.Introduction

Following documentation specifies the objective, aim and scope of the website exercise with an intent to assess the tools and techniques which shall support in establishing a reliable Hostel Management System and further help to allot the students appropriate hostel according to their merit, gender, caste and distance of student's hometown from the institute. The application form will require the students to enter their merit and personal details.

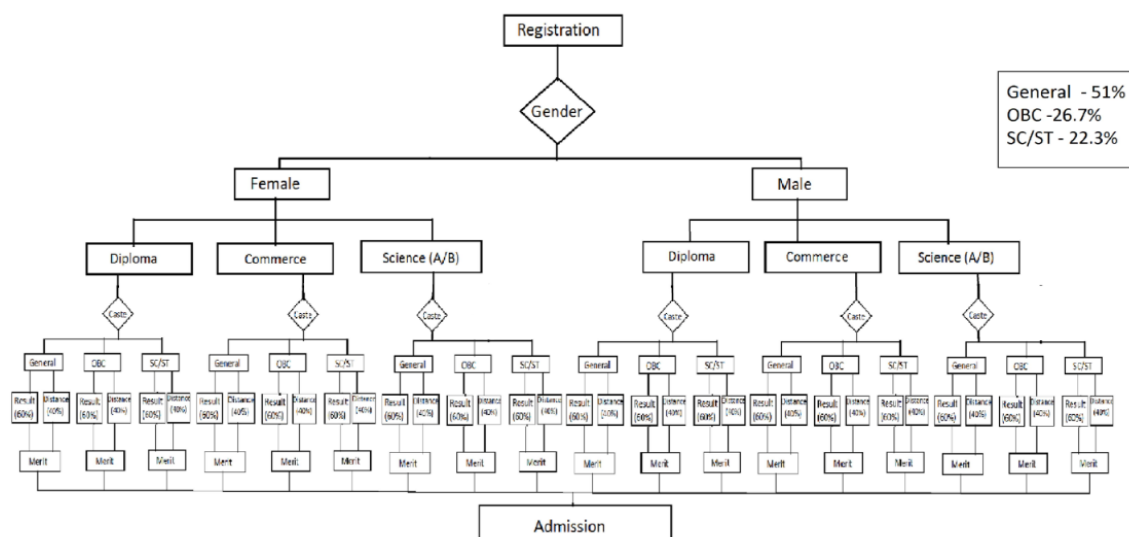
1.1 Objective/ Aim:

Our aim is to build a web based application that serves the purpose of admitting students to various government hostels based on mainly four factors.

1.2 Scope:

This Hostel Management System, will be able to ease the entire hostel admission process as everything could be done by few clicks. This system is applicable to private hostels as well. They may do the same processing by either eliminating or adding some factors.

2.Methodology



As described above in the flowchart, our website will provide an interface for users to fill in the relevant information.

Students will have to enter:

Aadhar number, full name , gender , college/school name address ,email-id , contact number , date of birth ,name of hostels, marks of the class on which their admission will be based on(10th/12th/ college/Diploma) and specifically respective RTO district codes.

Documents to be submitted when final confirmation of seat is done:

- Aadhar card
- Mark sheet copy
- Residential proof (Electricity bill)
- A passport size photograph
- Bonafide certificate for assuring their admission in the said school/college.

Entire data submitted by the candidate will be saved in the database for further processing.

Procedure: Firstly, the registration forms will be separated on the basis of gender and then same following processing is done on these forms regardless of their gender. Now, these application forms will be categorized on the basis of the course the student is pursuing i.e. diploma, commerce, science as shown in flowchart above. Further, these forms will be categorized based on their caste, so that students who belong to backward classes such as SC/ST/OBC could use some government provided benefit of lower cut-off. Presently, the application forms have been divided appropriately after evaluating their gender, caste, and enrolled course. So, now the following manipulation of data will be similar to all the forms.

We will calculate the distance of student's hometown to hostel's district by considering RTO district codes he/she submitted. To allot hostel admission we need a common parameter to compare the student's specifications. So, we take some predefined ratio of distance and merit marks , add them and store them in proper data structure.

This procedure is repeated for each and every student. Finally this list is then sorted and the students who possess highest number of final merit will be allotted with hostel accommodation in their respective categories. Note that if there are 100 seats for a particular category, then only the top 100 students belonging to that category will be accommodated, others will be rejected.

3.Description

3.1 Tools and techniques

- 1) Text Editor used – Atom,Sublime,Notepad++:

Atom is a text editor that's modern, approachable, yet hackable to the core—a tool we can customize to do anything but also use productively without ever touching a configuration file.

It will be used to write our code for HTML, CSS, JavaScript, etc.

2) Frontend - HTML, CSS (bootstrap framework), js

HTML: Hypertext Markup Language is the standard markup language for creating web pages and web applications.

CSS: *CSS* is a language that describes the style of an HTML document. *CSS* describes how HTML elements should be displayed.

JavaScript: *JavaScript* is the programming language of HTML and the Web.

With Cascading Style Sheets and JavaScript HTML forms a triad of cornerstone technologies for the World Wide Web.

3) Backend - MySQL,PHP

PHP: *PHP* technology is used to create web application. It can be thought of as an extension to servlet because it provides more functionality than servlet such as expression language, jstl etc. A *PHP* page consists of HTML tags and *PHP* tags.

MySQL: *MySQL* Enterprise Edition. The most comprehensive set of advanced features, management tools and technical support to achieve the highest levels of *MySQL* scalability, security, reliability, and uptime.

4) For testing – xampp

Xampp: XAMPP is a free and open source cross-platform web server solution stack package developed by Apache Friends, consisting mainly of the Apache HTTP Server, MariaDB database, and interpreters for scripts written in the PHP and Perl programming languages.^{[3][4]} XAMPP stands for Cross-Platform (X), Apache (A), MariaDB (M), PHP (P) and Perl (P).

XAMPP serves as a local host inside our own computer, including all functionalities that a *conventional server possesses and is used for testing the website locally.

5) Requirement - server for hosting

In computing, a *server* is a computer program or a device that provides functionality for other programs or devices, called "clients".

A server will be required for hosting website as well as storing data related to applicants. This data will be manipulated to allot rooms in hostel.

4. Outcome:

Final outcome will be displayed on the Website itself. Our system will allot seats to applicants on the basis of their merit, distance, caste and gender. Every selected candidate will be provided with a temporary ID and a confirmation message. Those who aren't admitted will be prompted with 'Not Admitted' message.

5. Work Done:

By integrating and incorporating the technologies we are familiar with, to give our idea a representation and simulation of exact website we have made, we have proceeded step by step. Initially, we have thought of how we can and cannot make the flow of our project by considering all the factors while allocating rooms. Several ideas struck to our mind. Prioritizing a factor was an important and problematic. We first tried to prioritize merit over distance. But that didn't work. We then tried to set a cut-off on merit, but that didn't work either. After making and rejecting many flowcharts and algorithms, discussions with the faculty guide, testing our algorithm on small scale, we finalised upon the flowchart displayed in Methodology section above. Based on that, we made a dummy program to check if it's working fine or not. In this program we implemented the logic which is similar to all the students. Program took dummy inputs of mainly gender, course, distance, merit and reservation and then outputted the list of students who were admitted.

6. Challenges (Risk) in implementing Final Prototype:

a) Sql injection-

SQL injection is a code injection technique, used to attack data-driven applications, in which nefarious SQL statements are inserted into an entry field for execution. The impact SQL injection can have on any system is far reaching. A successful attack may result in the unauthorized viewing of user lists, the deletion of entire tables and, in certain cases, the attacker gaining administrative rights to a database, all of which are highly detrimental to any system. When calculating the potential cost of a SQLI, it's important to consider the loss of applicants trust.

b) Malware, virus, Hack-

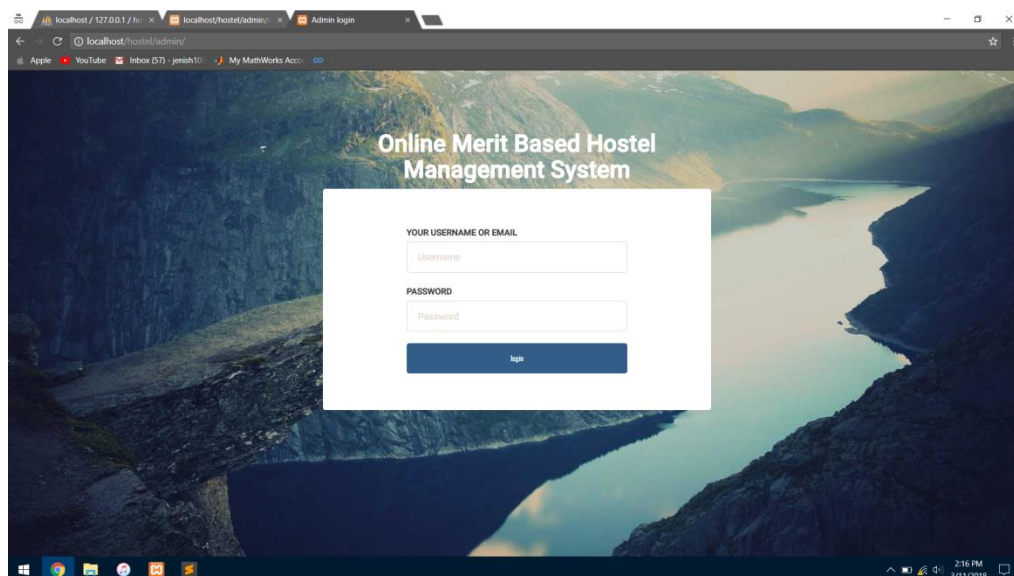
Hackers illegally access your hardware and data to use information such as credit card details for cyber fraud, and can corrupt or compromise the online security. Fraudsters use virus, malware, spyware, spams, and phishing techniques to gain access to sensitive personal information and commit financial crimes. In addition to financial loss or reputation damage, breaches can result in regulatory violations, fines and legal fees.

c) Human error –

It might happen that a user himself enter inaccurate details unintentionally. For example aadhar card number or his enrollment number in the respective college. Or on the authority side no concrete way of managing data is used then databases are susceptible to be mishandled .The root cause for 30 percent of data breach incidents is human negligence. Often this is due to the lack of expertise required to implement security controls, enforce policies or conduct incident response processes.

7.ScreenShots:

1) Admin login



2) Student Login

The screenshot shows a web browser window with the URL `localhost/127.0.0.1/hostel/index.php`. The page title is "Online Merit Based Hostel Management System". On the left, a sidebar menu contains "User Registration", "User Login", and "Admin Login". The main content area is titled "User Login" and contains a login form with the following fields:

- EMAIL:
- PASSWORD:
- A blue "login" button.
- A link "Forgot password?" below the button.

The Windows taskbar at the bottom shows the date and time as 2:16 PM on 3/11/2018.

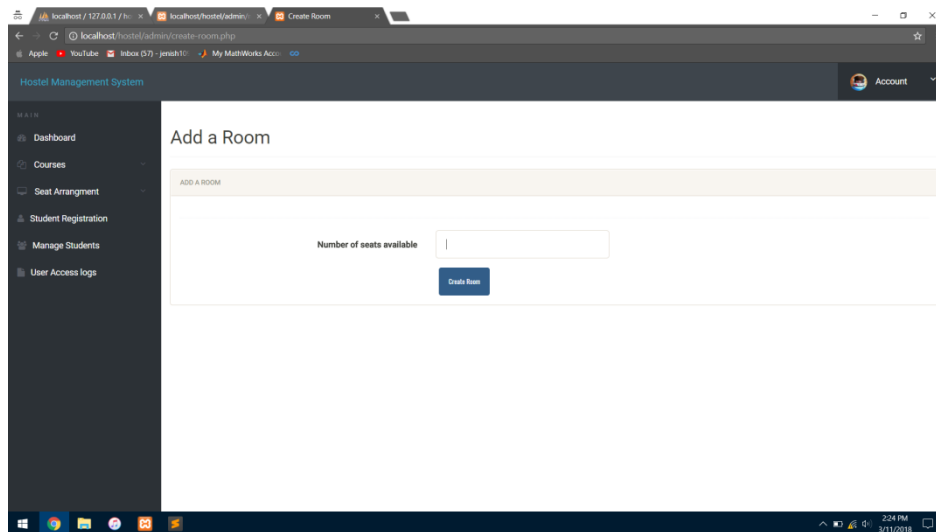
3) Student Registration

The screenshot shows a web browser window with the URL `localhost/127.0.0.1/hostel/registration.php`. The page title is "Online Merit Based Hostel Management System". On the left, a sidebar menu contains "User Registration", "User Login", and "Admin Login". The main content area is titled "Student Registration" and contains a registration form with the following fields:

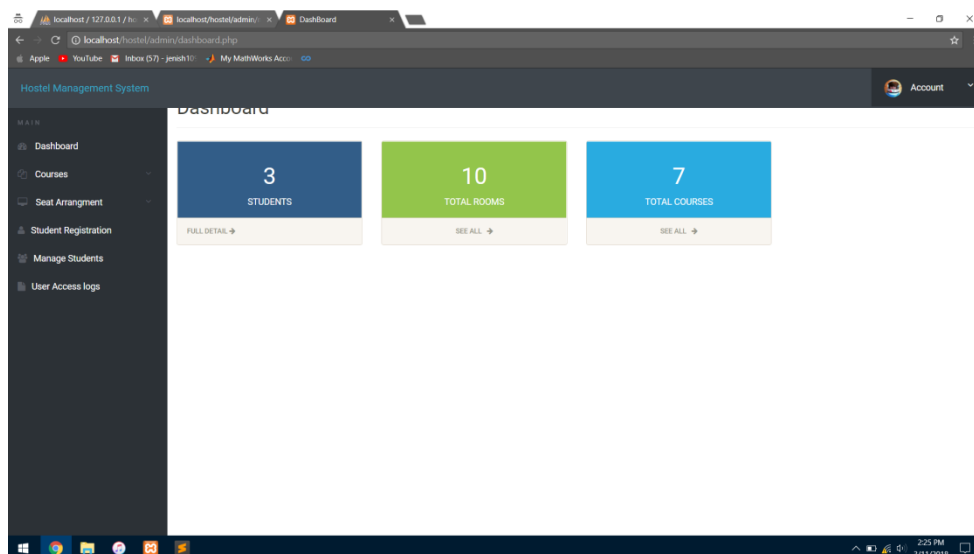
- A blue banner with the text "NOTE: ENTER INFO SAME AS AADHAR CARD".
- Aadhar Card No:
- Name:
- Date Of Birth:
- Gender:
- Contact No:
- Email id:
- Password:
- Confirm Password:

The Windows taskbar at the bottom shows the date and time as 2:16 PM on 3/11/2018.

4) Create Room



5) Dashboard for Admin



6) Student Registration-2

The screenshot shows a web browser window with the URL `localhost/127.0.0.1/book-hostel.php`. The page is titled "Registration" and is part of the "Hostel Management System". A sidebar on the left contains links: Dashboard, My Profile, Change Password, Book Hostel, Room Details, and Access log. The main content area is divided into two sections: "Room Related info" and "Personal info".

Room Related info

- College Name:
- Pincode:
- Hostel Name:

Personal info

- Aadhar Card No:
- Name:
- Date Of Birth:
- Gender:

7) Student Dashboard

The screenshot shows a web browser window with the URL `localhost/127.0.0.1/dashboard.php`. The page is titled "Dashboard" and is part of the "Hostel Management System". A sidebar on the left contains links: Dashboard, My Profile, Change Password, Book Hostel, Room Details, and Access log. The main content area displays two large buttons: "My Profile" and "My Room".

My Profile

[FULL DETAIL](#)

My Room

[SEE ALL](#)

8.Future Scope:

Capabilities of every product can be modified to make it more reachable. Similarly, this hostel management system can be upgraded with few more features. In future we may add a new factor of Income for determination of capable applicants. The students whose parent's annual income is less than a particular decided number (eg: 6 lakhs), will be granted a little higher priority when providing admission. Because of this new factor, this system could then be used within private hostels too.

9.References:

- Vehicle Registration (RTO) Codes in Indian States and Union Territories:

<http://vehicleregistration-rto-codes-india.blogspot.in/2013/08/gujarat.html>