**1. Introduction:**

Renting a house assists people to live in a comfortable house when they do not have access to build their own personal homes/houses or the individual who want to rent a house/room/apartment/home must first contact the House rental company for the desire House/Home/apartment. This can be done online. At this point, this person has to supply some information such as; dates of rental, and type of house. After these details are worked out, the individual renting the house must present a valid Identification Card.

**1.1 Purpose:**

The advancement in Information Technology and internet penetration has greatly enhanced various business processes and communication between companies (services provider) and their customers of which Real Estate/House Rentals industry is not left out. This House Rental System is developed to provide the following services:

**Enhance Business Processes:** To be able to use internet technology to project the rental company to the global world instead of limiting their services to their local domain alone, thus increase their return on investment.

**Online House/Room Booking:** A tools through which customers can book available Rooms/House/Apartment online prior to their date of using the house instead of walking around and asking for a vacant house.

**Customer’s registration:** A registration portal to hold customer’s details, monitor their transaction and used same to offer better and improve services to them and user account where he/she can view her/his details instead of the poor existing systems where only the administrators control their customer details.

**Rentals Notice and Blog:** A tool where customers can see and view the details of nearby available House for rent/sale, and also view the current economic design of houses/apartments.

**1.2 Intended Audience:**

Our Main users mainly a Bachelor, Job holder, Students, Garments Workers who don’t get enough time to search home’s. By using this website, they can save time and enjoy their weekends.

**1.3 Intended Use:**

House Rental is a house/Apartment/home that can be used temporarily for a fee during a specified period. The individual who needs a house must contact a House Rental Owners through House rental Online System by first checking the available Houses, booking it then The system will contact the house owners to check the House and contract out for a room/home/apartment. This system increases customer retention and simplify House and staff management. The System can be used by Real Estate Companies to increase the house rental market around the world. The system will also help people to rent apartments/houses easily instead of walking and manually renting houses. It is also applicable for landlords who wants to expand their house rental business.

**1.4 Risk Definitions:**

With the current system recording the details of various activities of user is completely manual and entails a lot of paper work. Each house has a file that contains the house number, size, rent per month, expected deposit, occupant, and status. Rent payment table contains tenants: first name, last name, home number, date of payment, amount and balance if any. The existing system only provides test-based interface which is not as user friendly as graphical user interface. Since the system is implemented manually, the response is very slow. The transactions are not secure as papers may get lost or damaged. Hence, there is need of reformation of the system with more advantages and flexibility. The system eliminates most of the limitations of the existing system.

**2. Overall Description:**

1. This online house rental solution is fully functional and flexible.
2. It is very easy to use.
3. This online House rental system helps in back office administration by streamlining and standardizing the procedures.
4. It saves a lot of time, money and labor
5. Eco-friendly: The monitoring of the Housing activity and the overall business becomes easy and includes the least of paper work.
6. The software acts as an office that is open 24/7.
7. It increases the efficiency of the management at offering quality services to the customers.
8. It provides custom features development and support with the software

**2.1 User Classes and Characteristics:**

User classes represent an individual user who has unique requirements for the system or groups of users who have similar requirements for the system. There are three types of users that interact with the system: users of the mobile application, house owners and administrators. Each of these three types of users has different use of the system so each of them has their own requirements. The mobile application users can only use the application to find a house. This means the user have to be able to search for house, choose a house from that search and then navigate to it. Users to get a relevant search result there are multiple criteria the users can specify and all results matches all of those. The House owners will not use the mobile application but the web portal instead. There they will manage the information about their House, for example a description of the House, contact information and their facility. The administrators also only interact with the web portal. They are managing the overall system so there is no incorrect information within it. The administrator can manage the information for each house as well as the options for both the mobile application users and the house owners.

**2.2 Operating Environment:**

The user interface for the software shall be compatible to any browser such as Internet Explorer, Mozilla or Netscape Navigator by which user can access to the system. The user interface shall be implemented using any tool or software package like Java Applet, MS Front Page, EJB etc. Since the application must run over the internet, all the hardware shall require to connect internet will be hardware interface for the system. As for e.g. Modem, WAN – LAN, Ethernet Cross-Cable.

**A brief overview of the languages of our project:**

**Front end:** HTML, CSS, JavaScript, bootstrap

**HTML:** HTML is used to create and save web document. E.g. Notepad/Notepad++

**CSS:** (Cascading Style Sheets) Create attractive Layout

**JavaScript:** It is a programming language, commonly use with web browsers.

**Bootstrap:** Bootstrap is the most popular CSS Framework for developing responsive and mobile-first websites.

**Back end:** PHP, MySQL

**PHP:** Hypertext Preprocessor (PHP) is a technology that allows software developers to create dynamically generated web pages, in HTML, XML, or other document types, as per client request. PHP is open source software.

**MySQL:** MySQL is a database, widely used for accessing querying, updating, and managing data in databases. Software Requirement: XAMPP Server

**2.3 Constrains:**

The User Interface will be accessed through English (global language) Language for the convenience of most users. Only common words will be used to describe the system. Any Operating system will be able to run this webapp using any browser with intranet connection.

**2.4 Assumption:**

We assume that people of almost all ages can use this webapp as it has Bangla and English features. So, anyone who doesn’t know English can easily use this webapp.

**3. Requirements:**

**3.1 Functional Requirements:**

* Database (MySQL) for the information
* Have login platforms
* The web application shall be able to take, edit and update and later check them later on

**Use case Name: Add Rental Ad to the System**

**Actor:** Admin

**Scenario/Description:**

* User have to select what type of add he/she wants to give like Flat/ Single Room/ Double Room/ Roommate.
* Secondly, User have to give his/her Username/ Email Address /Mobile Number and a password for your future login.
* Thirdly, User have to give full detail address of user house like specially the House Number, Road, Block (If any), Area, Building color (Not mandatory. Just for identification of the client when he/she comes to see the house), Furnished/Non-Furnished, CCTV Camera Yes/No, Security Yes/No, Parking Yes/No, Rent Per Month, Generator Yes/No, and other information’s for client to easily find your location. The most important information User needs to give is the date when house will be available (Like user flat will be available from November, so click on the November icon. From that the client will be able to know that the room will be available from November).
* The next thing User have to give is his/her Full name/Nickname and Contact Number with whom the client will contact. Next, user have to give user or someone else’s NID No. and their Full name for the security purpose which will not be displayed to the clients.
* User need to upload some photos of the rooms or the photo of the room for which user want a roommate to give user client a clear perspective how user room looks like. The better the photos the better chances of attracting client easily.
* Lastly, user have to submit how much user house rent is. And if the house rent is negotiable do click on the negotiable tick mark.
* If user are giving an Ad for roommate user have to give some other information’s of users like user Occupation (Student/Job Holder). And if user student then user have to give user University/ College/ School name or if user is a job holder then give the name of the company in which user work in and the id card number of user’s company. Lastly, user have to give some information (Name + Contact) of someone else like user Relative/ Brother/ Friend for the security of the client. We are taking the info’s for the possible scenario’s like suppose client bag or something valuable got stolen and the roommate just flew somewhere or there’s something happened with User and the client need to contact some of your near ones so that he can inform them about your condition.
* User have to pay a small subscription fee for one month which is only 50 BDT. You can pay the amount through Bkash or Credit card. User have to give all this information once. After the submission of all user information’s user won’t be needing to give these information’s again. Just login and post Ad. And if you want to change the info you can always do that by login into our web application and edit them from the admin panel.

**Exception:**

* Page not found
* No database connection

**Precondition:**

* Admin must be accessed the URL of add course from the browser

**Post Condition:**

* Admin successfully added the House Rental Ad.
* Unsuccessful adding the House Rental Ad.
* Stay in same page showing error message.

**Exception:** Stay in the same page if possible.

**Use case Name: Delete Rental Ad from the System**

**Actor:** Admin

**Scenario/Description:**

Admin can delete Rental Ad from the system

**Exception**

* Page not found
* No database connection

**Precondition:**

Admin must be accessed the URL of delete course from the browser

**Post Condition:**

* Successfully deleted the Rental Ad.
* Unsuccessful deleting the Rental Ad.
* Stay in same page showing error message.

**Exception** Stay in the same page if possible.

**Use Case Name: House search to the System**

**Actor:** Admin

**Scenario/Description:**

* Searching feature allows user to find the accurate things user are searching for. User can search for Flat, Single room, Double Room, Roommate.
* There is a filtering bar. From the filtration bar you can filter your area and rent budget. So, if you live in Mohammadpur area you can search only Mohammadpur area available rooms.
* If user have a fixed budget for house rent user can fix user budget from the budget filter and after that user will be able to see only those houses rent Ads which are in user budget.
* After user searching is complete click any of the rental Ad to see detail information about that house like House Owner Name, Owner Contact, House Name (If Any), House Number, Road, Block (If any), Area, Building color (If Any), House Rent Possible Month, House agreement etc. You will be also able to see their reviews which were given by the people who had lived there before. By seeing the reviews, you can easily predict about the house owner, their facilities.

**Exception**

* Required page not found.
* No database connection.

**Precondition**

Admin must access the URL of login page from web browser.

**Post condition**

* Searched House details have been found successfully
* Buffering for slow connection
* Stay in the same page showing error message.

**Exception:**

Stay in the same page if possible

**3.2 Non-Functional Requirements:**

This part requires to be extra careful on the small details of the project such as:

**Sign-Up User name:**

1. The user name must have more than 3 characters and will not accept any punctuation marks for the teachers.
2. The user will log in with their individual IDs.
3. The field cannot be empty when login

**Sign-Up password:**

1. The passwords should be alphanumeric
2. There cannot be any empty field
3. The password must be between 4 to 10 characters
4. The password cannot be the username or user ID

**Sessions:**

1. When inactive for a long time, the user will be logged out automatically.
2. The page will reload itself every 5 minutes

**Cookies:**

1. Cookies implemented for better User Experience
2. Cookies will be implemented in login

**Other than all of those, we have to take care of the following aspects:**

1. Performance Parameters
2. Operation
3. User Interface
4. Resource management
5. Documentation
6. Reliability
7. Security
8. Quality
9. Safety
10. Verification
11. Recover ability
12. Maintainability
13. Environmental requirements

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