Application Requirements Document

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Project Topic: Engineering a Student Hostel Management System Application

Software Process Model: Incremental Agile

User Requirements Specification

Functional Requirements

1. The application should keep track of student personal information.
2. The application should keep track of student guardian information (a person like the student’s father or older brother).
3. It should keep track of room booking/reservation information.
4. The application should keep track of room information.
5. It should make it possible for a new customer to sign up.
6. The application should make it possible for existing customers and the administrator to log in and change passwords if they want to.
7. It should make it possible for students to manage their room/rooms (view rooms and reservation details, make another reservation, cancel reservations, and edit them).
8. The application should make it possible for students to manage their profiles (view and edit them).
9. The application should make it possible for the hostel administrator to manage students (view, add, edit, remove students).
10. It should make it possible for the hostel administrator to manage student guardians (view, add, edit, remove student guardians).
11. The application should make it possible for the hostel administrator to manage rooms (view, add, edit, remove hostel rooms).
12. It should make it possible for the hostel administrator to manage booking information (view, add, edit, remove hostel room reservations).
13. The application should make it possible for the administrator to view and change his/her username and password.

Non-functional requirements

*Product requirements*

*Usability requirements*

The application users should be able to use the application without the need to train.

*Space and Performance requirements*

1. The devices on which the application is going to run should have at least 4GB (Gigabytes) of RAM (Random Access Memory).
2. The user web browsers should be using at least HTML5.
3. The user web browsers should also recognize and allow JavaScript code.

*Security requirements*

1. The application should be fully protected from HTML injections.
2. The application should be fully protected from SQL injections.

*Organizational requirements*

The application should be developed by using HTML, CSS, JavaScript, PHP and MySQL and without the need to use other programming languages or frameworks.

*External requirements*

The user and administrator passwords should not be visible on the database.

*System requirements specification*

Functional Requirements

1. The application should keep track of student personal information like the student id, name, surname, email address, phone number, gender, guardian relationship, age, education, address and password.
2. The application should keep track of student guardian information (a person like the student’s father or older brother) like the guardian id, name, surname, phone number, email address and age.
3. It should keep track of room booking/reservation information like the student who has made the reservation, the room reserved/booked, the stay duration, the stay start date and end date, the food status (which meals the customer wants to consume at the hostel every day) and the total price of the booking.
4. The application should keep track of room information like the room number, price per meal, price of the room reservation without meals, the capacity in number of people that can stay in the room at the same time and the number of students that are currently occupying the room.
5. It should make it possible for a new customer to sign up by providing their name, surname, email address, phone number, gender, age, current education level, address, password, guardian name, surname, age, phone number, relationship and email address.
6. The application should make it possible for existing customers and the administrator to log in by providing a username and password and change their passwords if they want to.

Non-functional requirements

*Product requirements*

*Security requirements*

1. The application should be fully protected from HTML injections by using functions for filtering and cleaning user input before printing it in the browser.
2. The application should be fully protected from SQL injections by using functions that prevent queries that are provided as user input from running in the database.

*External requirements*

The user and administrator passwords should not be visible on the database. The passwords’ hash versions should be stored in the database tables instead of the passwords themselves.

Database Entity Relationship Diagram (ERD)

Diagram

Description automatically generated

Database Relational Schema (RS)

Diagram

Description automatically generated