**Hostel Management System**

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(Semester - 5, Division - A)

**1.Introduction**

**1.1 Problem Definition**

A Hostel/Chain of Hostel is an essential part of an Institute along with educational curriculum. Every year hundreds of students takes admission and decides to stay in Hostel. It Provides a space to students who are unable to travel a lot or who are living much far away from the institute or are unaware of the surroundings to live with. The best hostel management systems not only allow the admin, owner or staff members to manage the various aspects of the business from one location, they offer the possibility for employees to access the system remotely, and the information that is updated within the system to all the employees automatically.

Finding a PG is not easy sometimes because there are lots of essential tasks that are needed to be done in order to finalize a place to live-in such as finding a good PG situated not very far from the institute, availability of the life essential things, amenities etc. and importantly, living in a Hostel helps students save their traveling time and utilize this time into many different useful areas. Therefore, a good platform must be required to provide all the useful privileges to find a Hostel and book a place that comforts them.

**1.2 Initial Requirement Document**

|  |  |
| --- | --- |
| Title of the project | Hostel Management System |
| Stakeholders involved in capturing requirements | Hostel Staff, Student, Project Guide |
| Techniques used for requirement capturing | Brainstorming, Agile Method |
| Name of the person along with designation |  |
| Date | June, 2022 |
| Users of the system | Admin, Staff, student |
| Version | 1.0 |
| Consolidated list of initial requirements:   1. Privileges 2. The Admin shall have full access to the System. 3. The Staff shall have access to manage Students. 4. The Students shall have access to limited fields of the System. 5. Account Generation 6. Users shall Generate Account ID First by filling Application form. 7. The Admin shall be able to manage Staff and students. 8. The Admin shall be able to modify data. 9. Registration / Login 10. Users shall be able to login and logout in the system. 11. The Admin Shall be able to approve Applications. 12. Student Profile 13. Users Shall be able to manage their Profile. 14. The Staff shall be able to manage Students 15. Student Requirements 16. The Students shall be able to specify their requirements and durations of stay of the room. 17. Availability of rooms 18. The Students Shall be able to know the availability of the rooms. 19. The Staff can manage the Availability of the rooms. 20. The Students are liable to pay the fees online only. 21. Allocating Finalized room 22. The Admin Shall be able to allocate Finalized rooms. 23. The Staff shall be able to manage finalized rooms. 24. Manage Rooms 25. The Staff shall be able to manage rooms. 26. The Students shall be able to report damages and repairs in a room. 27. Packages 28. The Students shall be able to view Room Packages as types of Rooms. 29. The Students shall be able to pay fees according to their Package online only. 30. Features 31. The Students shall be able to generate requests and complains. 32. The Students shall be able to search Hostel based on location 33. The Staff and Students shall be able to download Receipts PFA. 34. The Staff shall be able to scan Student Account ID. 35. The Staff shall be able to generate reports like : 36. Package wise. 37. Semester wise. 38. Department wise. 39. Room wise. 40. Complaint wise. 41. Request wise. 42. Due date wise. 43. Mess Information 44. The Staff member as Mess worker shall be able to manage Mess information. 45. The Staff member as Mess worker shall be able to view total number of Students. 46. Notice/Instructions 47. The Admin and Staff shall be able to release Notices/Instructions. | |

**1.3 Project Definition / Objective**

Dormzz: The Hostel Management System allows to use wide range of loaded features online which are usually not provided to the students or staff members due to unapproachable resources. Given below are the key features of the system that the students and staff will be able to use:

* Booking Rooms
* Online Payment
* Saving Transportation Time
* Daily Activities and Games
* Cleanliness and Hygiene
* Counseling
* Events
* Proper Maintained Schedule
* Immediate Health assist/support.

**1.4 Scope / Boundaries**

The Scope of the system is limited to the stack holders of the Uka Tarsadia University, Bardoli. Viz. Admin, Staff and Students. This system is designed to be used for the long period of time over the number of new batches.

**2. Overall Description**

**2.1 Product Perspective / Environment Description**

**2.1.1 Hardware Interface / Hardware Specification**

|  |  |
| --- | --- |
| Device name | PARTHs-DESKTOP |
| Processor | Intel(R) Core (TM) i5-1035G1 CPU @ 1.00GHz 1.19 GHz |
| Installed RAM | 16.0 GB |
| System type | 64-bit operating system, x64-based processor |
| Hard Disk | 512 GB |

**2.1.2 Software Interface / Software Specification**

|  |  |
| --- | --- |
| Operating System | Microsoft Windows 11 |
| Front End | HTML, CSS, JS, Bootstrap |
| Back End | Mysql, Php |
| Input Device | Keyboard, Mouse |
| Output Device | Monitor, Printer |
| Software Used | Visual Studio Code (Version 1.69.0), Apache NetBeans IDE 14 |
| Tools | Xampp (Version 3.3.0) |

**3. System Specific Requirements**

**3.1 Functional Requirements**

* Registration
* Login
* Add contact details
* View Dashboard
* Add / Update Posts/Notices
* Manage User Profiles (All users)
* Manage Packages
* Manage Rooms
* Book Rooms
* Manage Mess Information
* Manage Events / Activities
* Manage Leaves
* Manage Requests
* Manage Complains
* Manage Duties
* View Feedbacks, Ratings, Portfolio

**3.2 Non-Functional Requirements**

* Security : The System will be able to Manage stored Payment Options
* Reliability : The System will be reliable on Enrollment Number and Institute Id.
* Compatibility : The System will be compatible with different OS and Devices.
* Useability : The System will be able to Provide Easy-to-Use Interface to for Users.
* Availability : The System will be able to provide all the necessary data under regular traffic as well as critical situations.
* Simplicity : The System will be able to perform simple tasks and Operations.

**4. System Design**

**4.1 Database Design :**

**4.1.1 Database Schema**

1. Table Name : tblRegister

tblRegister (user\_id[PK], EnrollmentNo, CourseName, DepartmentName, Username, Password, FirstName, LastName, Email, PhoneNo, UType\_id[FK])

1. Table Name : tblStudent

tblStudent (user\_id[PK], Club\_id[FK])

1. Table Name : tblStaff

tblStaff (user\_id[PK], role\_id[FK],)

1. Table Name : tblRole

tblRole(role\_id[PK], role\_type)

1. Table Name : tblUserType

tblType (UType\_id[PK], UType)

1. Table Name : tblHostel

tblHostel (Hostel\_id[PK], Capacity, Hostel\_Name, Available\_Rooms, user\_id[FK], Mess\_ID[FK])

1. Table Name : tblRoom

tblRoom (Room\_id[PK], Room\_Type\_id[FK], Hostel\_id[FK], Room Facilities\_id[FK])

1. Table Name : tblRoomType

tblRoom (Room\_Type\_id[PK], Room\_Type, Room\_Capacity, Room\_Facilities\_id[FK])

1. Table Name : tblRoomFacilities

tblRoomFacilities (Room\_Facilities\_id[PK], Room\_Facilities)

1. Table Name : tblMess

tblMess(Mess\_id[PK], Caterer\_Name, user\_id[FK], role\_id[FK], MessMenu\_id[FK])

1. Table Name : tblMess\_Menu

tblMess\_Menu(MessMenu\_id[PK], Day, Time, Dish\_id[FK])

1. Table Name : tblDish

tblMess(Dish\_id[PK], DishName)

1. Table Name : tblPackage

tblPackage (Package\_id[PK], Package\_Name, Package\_Description, Package\_Valid\_Year)

1. Table Name : tblHostel\_Record

tblHostel\_Record (Record\_id[PK], user\_id[FK], Room\_id[FK], Room\_Type\_id[FK], Timestamp\_Check\_Out, Timestamp\_Check\_In, User\_Status)

1. Table Name : tblTransaction

tblTransaction (Trn\_id[PK], user\_id[FK], Record\_id[FK], Package\_id[FK], Trn\_Timestamp, Trn\_Amount, Trn\_Mode, Trn\_refference\_id, Trn\_Status)

1. Table Name : tblComplain

tblComplain (Cmp\_id[PK], Cmp\_Type\_id[FK], user\_id[FK], Cmp\_Timestamp, Cmp\_Brief, Cmp\_Reply, Cmp\_Status)

1. Table Name : tblComplain\_Type

tblComplain\_Type ( Cmp\_Type\_id[PK], Cmp\_Type)

1. Table Name : tblRequest

tblRequest (Req\_id[PK], user\_id[FK], Req\_Timestamp, Req\_Brief, Req\_Remarks, Req\_Status)

1. Table Name : tblFeedback

tblFeedback (Fdb\_id[PK], user\_id, Fdb\_Timestamp, Fdb\_Brief)

1. Table Name : tblEvent

tblEvent (Event\_id[PK], Event\_Name, Event\_Date)

1. Table Name : tblClub

tblClub (Club\_id[PK], Club\_Name, user\_id, Event\_id)

1. Table Name : tblNotice

tblNotice (Notice\_id[PK], Notice\_Brief, user\_id, Notice\_Timestamp )

1. Table Name : tblLeave

tblLeave (Leave\_id[PK], user\_id[FK], Leave\_Reason, Leave\_From, Leave\_To, Leave\_Status)

**4.1.2 Data Dictionary**

1. Table Name : tblRegister

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| tblRegister | | | | |
| Field Name | Datatype | Size | Constraint | Description |
| user\_id | int | 7 | Primary Key | Unique id of Users |
| EnrollmentNo | big int | 9 | Not Null | Enrollment Numbers of User |
| CourseName | Varchar | Max | Not Null | Current Course Pursuing |
| DepartmentName | Varchar | Max | Not Null | Department Name |
| Username | Varchar | 100 | Not Null | User Account id |
| Password | Varchar | 50 | Not Null | User Account Password |
| FirstName | Varchar | 100 | Not Null | First Name of the User |
| LastName | Varchar | 100 | Not Null | Last Name of the User |
| Email | Varchar | Max | Not Null | Email id of the User |
| PhoneNo | Numeric | 10 | Not Null | Phone number of the User |

1. Table Name : tblStudent

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| tblStudent | | | | |
| Field Name | Datatype | Size | Constraint | Description |
| user\_id | int | 7 | Primary Key | Unique id of Users |
| Club\_id | int | 6 | Foreign Key | Unique id of Club |

1. Table Name : tblStaff

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| tblStudent | | | | |
| Field Name | Datatype | Size | Constraint | Description |
| user\_id | int | 7 | Primary Key | Unique id of Users |
| Role\_id | int | 5 | Foreign Key | Unique id of Role |

1. Table Name : tblRole

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| tblRole | | | | |
| Field Name | Datatype | Size | Constraint | Description |
| Role\_id | Int | 5 | Primary Key | Unique id of Role Type |
| Role\_Type | Varchar | 100 | Not Null | Type of Role |

1. Table Name : tblUserType

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| tblUserType | | | | |
| Field Name | Datatype | Size | Constraint | Description |
| UType\_id | Int | 3 | Primary Key | Unique id of Type Users |
| UType | Varchar | 8 | Not Null |  |

1. Table Name : tblHostel

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| tblHostel | | | | |
| Field Name | Datatype | Size | Constraint | Description |
| Hostel\_id | Int | 7 | Primary Key | Unique id of Hostel |
| Capacity | Int | 3 | Not Null | Capacity of a Hostel |
| Hostel\_Name | Varchar | 500 | Not Null | Name of the Hostel |
| Available\_Rooms | Int | 100 | Not Null | Availability of the Rooms |
| user\_id | Int | 7 | Foreign Key | Unique Staff id of Rector |
| Mess\_id | Int | 3 | Foreign Key | Unique Mess id of Mess |

1. Table Name : tblRoom

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| tblRoom | | | | |
| Field Name | Datatype | Size | Constraint | Description |
| Room\_id | Varchar | 5 | Primary Key | Unique id of Room |
| Room\_Type\_id | Varchar | 4 | Foreign Key | Unique id of Room Type |
| Hostel\_id | int | 7 | Foreign Key | Unique id of Hostel |

1. Table Name : tblRoomType

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| tblRegister | | | | |
| Field Name | Datatype | Size | Constraint | Description |
| Room\_Type\_id | Varchar | 5 | Primary Key | Unique id of Room Type |
| Room\_Type | Varchar | 20 | Not null | Type of Room |
| Room\_Capacity | int | 2 | Not null | Capacity of the Room |
| Room\_Facilities\_id | Varchar | 25 | Foreign Key | Unique id of Facilities Provided |

1. Table Name : tblRoomFacilities

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| tblRoomFacilities | | | | |
| Field Name | Datatype | Size | Constraint | Description |
| Room\_Facilities\_id | Varchar | 5 | Primary Key | Unique id of Facilities Provided |
| Room\_Facilities | Varchar | Max | Not Null | Facilities Provided in Rooms |

1. Table Name : tblMess

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| tblMess | | | | |
| Field Name | Datatype | Size | Constraint | Description |
| Mess\_id | int | 3 | Primary Key | Unique id of Mess |
| Cateres\_Name | Varchar | Max | Not Null | Name of Mess Cateres |
| user\_id | int | 7 | Foreign Key | Unique id of Staff Members only |
| Role\_id | int | 5 | Foreign Key | Unique id of Role Type |
| MessMenu\_id | Varchar | 5 | Foreign Key | Unique id of Mess Menu |

1. Table Name : tblMess\_Menu

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| tblMess\_Menu | | | | |
| Field Name | Datatype | Size | Constraint | Description |
| MessMenu\_id | Varchar | 5 | Primary Key | Unique id of Mess Menu |
| Day | Date |  | Not Null | Day of Menu Applicable |
| Time | DateTime |  | Not Null | Time of Day Menu Applicable |
| Dish\_id | Varchar | 6 | Foreign Key | Unique id of Dishes |

1. Table Name : tblDish

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| tblDish | | | | |
| Field Name | Datatype | Size | Constraint | Description |
| Dish\_id | Varchar | 6 | Primary Key | Unique id of Dishes |
| DishName | Varchar | Max | Not Null | Name of Dishes |

1. Table Name : tblPackage

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| tblPackage | | | | |
| Field Name | Datatype | Size | Constraint | Description |
| Package\_id | Varchar | 7 | Primary Key | Unique id of Packages |
| Package\_Name | Varchar | 50 | Not Null | Name of Package |
| Package\_Description | Varchar | Max | Not Null | Description about Package |
| Package\_Valid\_Year | Date |  | Not Null | Date of Package Validity |

1. Table Name : tblHostel\_Record

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| tblHostel\_Record | | | | |
| Field Name | Datatype | Size | Constraint | Description |
| Record\_id | Varchar | 10 | Primary Key | Unique id of Hostel Record |
| user\_id | int | 7 | Foreign Key | Unique id of Users |
| Room\_id | Varchar | 5 | Foreign Key | Unique id of Room |
| Timestamp\_Check\_Out | DateTime |  | Not Null | Timestamp of Check out |
| Timestamp\_Check\_In | DateTime |  | Not Null | Timestamp of Check in |
| User\_Status | Varchar | 7 | Not Null | Status of User Account |

1. Table Name : tblTransaction

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| tblRegister | | | | |
| Field Name | Datatype | Size | Constraint | Description |
| Trn\_id | Varchar | 12 | Primary Key | Unique id of Transaction |
| user\_id | int | 7 | Foreign Key | Unique id of Users |
| Record\_id | Varchar | 10 | Foreign Key | Unique id of Hostel Record |
| Trn\_Timestamp | Date |  | Not Null | Timestamp of Transaction |
| Trn\_Amount | Double | 6 | Not Null | Amount of Hostel Fees / Package |
| Trn\_Mode | Varchar | 20 | Not Null | Mode of Transaction / Payment |
| Trn\_refference\_id | Varchar | 15 | Not Null | Reference number of Transaction |
| Trn\_Status | Varchar | 10 | Not Null | Status of the Transaction |

1. Table Name : tblComplain\_Type

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| tblComplain\_Type | | | | |
| Field Name | Datatype | Size | Constraint | Description |
| Cmp\_Type\_id | Varchar | 5 | Primary Key | Unique id of Complain Type |
| Cmp\_Type | Varchar | 9 | Not Null | Type of Complain |

1. Table Name : tblComplain

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| tblComplain | | | | |
| Field Name | Datatype | Size | Constraint | Description |
| Cmp\_id | Varchar | 9 | Primary Key | Unique id of Complain |
| Cmp\_Type\_id | Varchar | 5 | Foreign Key | Unique id of type of Complain |
| user\_id | int | 7 | Foreign Key | Unique id of Users |
| Cmp\_Timestamp | DateTime |  | Not Null | Timestamp of Complain Generated |
| Cmp\_Brief | Varchar | Max | Not Null | Complain in Brief |
| Cmp\_Remarks | Varchar | Max | Null | Reply of the Complain |
| Cmp\_Status | Varchar | 10 | Not Null | Status of the Complain |

1. Table Name : tblRequest

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| tblRequest | | | | |
| Field Name | Datatype | Size | Constraint | Description |
| Req\_id | Varchar | 9 | Primary Key | Unique id of Request |
| user\_id | int | 7 | Foreign Key | Unique id of Users |
| Req\_Timestamp | DateTime |  | Not Null | Timestamp of Request Generated |
| Req\_Brief | Varchar | Max | Not Null | User Account Password |
| Req\_Remarks | Varchar | Max | Null | Reply of the Request |
| Req\_Status | Varchar | 10 | Not Null | Status of the Request |

1. Table Name : tblFeedback

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| tblFeedback | | | | |
| Field Name | Datatype | Size | Constraint | Description |
| Fdb\_id | Varchar | 9 | Primary Key | Unique id of Feedback |
| user\_id | int | 7 | Primary Key | Unique id of Users |
| Fdb\_Timestamp | DateTime |  | Not Null | Feedback Timestamp |
| Fdb\_Brief | Varchar | Max | Not Null | Feedback of the User |

1. Table Name : tblEvent

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| tblFeedback | | | | |
| Field Name | Datatype | Size | Constraint | Description |
| Event\_id | Varchar | 8 | Primary Key | Unique id of Events |
| Event\_Name | Varchar | Max | Not Null | Name of the Event |
| Event\_Date | DateTime |  | Not Null | Date and Time of the Event |

1. Table Name : tblClub

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| tblFeedback | | | | |
| Field Name | Datatype | Size | Constraint | Description |
| Club\_id | int | 7 | Primary Key | Unique id of Club |
| Club\_Name | Varchar | 100 | Not Null | Name of the Club |
| user\_id | int | 7 | Foreign Key | Unique id of Users |
| staff\_id | int | 7 | Foreign Key | Unique id of Staff Member |

1. Table Name : tblNotice

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| tblNotice | | | | |
| Field Name | Datatype | Size | Constraint | Description |
| Notice\_id | Varchar | 9 | Primary Key | Unique id of Notice |
| Notice\_Brief | Varchar | Max | Not Null | Notice in Brief |
| user\_id | int | 7 | Foreign Key | Unique id of Users |
| Notice\_Timestamp | Datetime |  | Not Null | Timestamp of Notice Generated |

1. Table Name : tblLeave

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| tblLeave | | | | |
| Field Name | Datatype | Size | Constraint | Description |
| Leave\_id | Varchar | 9 | Primary Key | Unique id of Blog |
| User\_id | int | 7 | Foreign Key | Unique id of User |
| Leave\_Reason | Varchar | 100 | Not Null | Title of the Blog |
| Leave\_From | DateTime |  | Not Null | Timestamp of Leave Starting Day |
| Leave\_To | DateTime |  | Not Null | Timestamp of Leave Ending Day |
| Leave\_Status | Varchar | 10 | Not Null | Status of the Leave |