

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
<p>Consolidated list of initial requirements:</p> <ol style="list-style-type: none">1) Privileges<ol style="list-style-type: none">1. The Admin shall have full access to the System.2. The Staff shall have access to manage Students.3. The Students shall have access to limited fields of the System.2) Account Generation<ol style="list-style-type: none">1. Users shall Generate Account ID First by filling Application form.2. The Admin shall be able to manage Staff and students.3. The Admin shall be able to modify data.3) Registration / Login<ol style="list-style-type: none">1. Users shall be able to login and logout in the system.2. The Admin Shall be able to approve Applications.4) Student Profile<ol style="list-style-type: none">1. Users Shall be able to manage their Profile.2. The Staff shall be able to manage Students5) Student Requirements<ol style="list-style-type: none">1. The Students shall be able to specify their requirements and durations of stay of the room.6) Availability of rooms<ol style="list-style-type: none">1. The Students Shall be able to know the availability of the rooms.2. The Staff can manage the Availability of the rooms.3. The Students are liable to pay the fees online only.7) Allocating Finalized room<ol style="list-style-type: none">1. The Admin Shall be able to allocate Finalized rooms.2. The Staff shall be able to manage finalized rooms.8) Manage Rooms<ol style="list-style-type: none">1. The Staff shall be able to manage rooms.2. The Students shall be able to report damages and repairs in a room.	

9) Packages

1. The Students shall be able to view Room Packages as types of Rooms.
2. The Students shall be able to pay fees according to their Package online only.

10) Features

1. The Students shall be able to generate requests and complains.
2. The Students shall be able to search Hostel based on location
3. The Staff and Students shall be able to download Receipts PFA.
4. The Staff shall be able to scan Student Account ID.
5. The Staff shall be able to generate reports like :
 - i. Package wise.
 - ii. Semester wise.
 - iii. Department wise.
 - iv. Room wise.
 - v. Complaint wise.
 - vi. Request wise.
 - vii. Due date wise.

11) Mess Information

1. The Staff member as Mess worker shall be able to manage Mess information.
2. The Staff member as Mess worker shall be able to view total number of Students.

12) Notice/Instructions

1. 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])
2. Table Name : tblStudent
tblStudent (user_id[PK], Club_id[FK])
3. Table Name : tblStaff
tblStaff (user_id[PK], role_id[FK],)
4. Table Name : tblRole
tblRole(role_id[PK], role_type)
5. Table Name : tblUserType
tblType (UType_id[PK], UType)
6. Table Name : tblHostel
tblHostel (Hostel_id[PK], Capacity, Hostel_Name, Available_Rooms, user_id[FK], Mess_ID[FK])
7. Table Name : tblRoom
tblRoom (Room_id[PK], Room_Type_id[FK], Hostel_id[FK], Room_Facilities_id[FK])
8. Table Name : tblRoomType
tblRoom (Room_Type_id[PK], Room_Type, Room_Capacity, Room_Facilities_id[FK])
9. Table Name : tblRoomFacilities
tblRoomFacilities (Room_Facilities_id[PK], Room_Facilities)
10. Table Name : tblMess
tblMess(Mess_id[PK], Caterer_Name, user_id[FK], role_id[FK], MessMenu_id[FK])
11. Table Name : tblMess_Menu
tblMess_Menu(MessMenu_id[PK], Day, Time, Dish_id[FK])
12. Table Name : tblDish
tblMess(Dish_id[PK], DishName)
13. Table Name : tblPackage
tblPackage (Package_id[PK], Package_Name, Package_Description, Package_Valid_Year)

14. 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)
15. 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)
16. Table Name : tblComplain
tblComplain (Cmp_id[PK], Cmp_Type_id[FK], user_id[FK], Cmp_Timestamp, Cmp_Brief, Cmp_Reply, Cmp_Status)
17. Table Name : tblComplain_Type
tblComplain_Type (Cmp_Type_id[PK], Cmp_Type)
18. Table Name : tblRequest
tblRequest (Req_id[PK], user_id[FK], Req_Timestamp, Req_Brief, Req_Remarks, Req_Status)
19. Table Name : tblFeedback
tblFeedback (Fdb_id[PK], user_id, Fdb_Timestamp, Fdb_Brief)
20. Table Name : tblEvent
tblEvent (Event_id[PK], Event_Name, Event_Date)
21. Table Name : tblClub
tblClub (Club_id[PK], Club_Name, user_id, Event_id)
22. Table Name : tblNotice
tblNotice (Notice_id[PK], Notice_Brief, user_id, Notice_Timestamp)
23. 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

2. 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

3. 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

4. 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

5. 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	

6. 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

7. 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

8. 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

9. 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

10. 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

11. 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

12. 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

13. 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

14. 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

15. 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

16. 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

17. 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

18. 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

19. 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

20. 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

21. 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

22. 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

23. 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