

## **LAB REPORT**

*Submitted by*

**Saurabh Pandey Naimish Pandey Samarth Pandey**  
**RA2011003010207 RA2011003010147 RA2011003010194**

*Under the Guidance of*

**Ms. S. Priya**

**Assistant Professor (Sr.G), CTECH**

*In partial satisfaction of the requirements for the degree of*

**BACHELOR OF TECHNOLOGY  
in  
COMPUTER SCIENCE ENGINEERING**

**with specialization in CSE-Core**



**SCHOOL OF COMPUTING  
COLLEGE OF ENGINEERING AND TECHNOLOGY  
SRM INSTITUTE OF SCIENCE AND TECHNOLOGY  
KATTANKULATHUR - 603203**

**JUNE 2022**



# SRM

INSTITUTE OF SCIENCE & TECHNOLOGY  
Deemed to be University u/s 3 of UGC Act, 1956

## SRM INSTITUTION OF SCIENCE AND TECHNOLOGY KATTANKULATHUR-603203

### BONAFIDE CERTIFICATE

Certified that this lab report titled "**Hostel Management System**" is the bonafide work done by Saurabh Pandey (RA2011003010207), Naimish Pandey (RA2011003010147), Samarth Pandey (RA2011003010194) who carried out the lab exercises under my supervision. Certified further, that to the best of my knowledge the work reported herein does not form part of any other work.

#### SIGNATURE

Ms. S. Priya

**SEPM – Course Faculty**

Assistant Professor (Sr.G)

Department of CTECH

## **ABSTRACT**

This Project “**HOSTEL MANAGEMENT SYSTEM**” targeted for the College Hostel integrates the transaction management of the Hostel for better control and timely response. This eliminates time delay and paper transactions being marked. The warden is provided with a better control over the transactions like adding the details of new students in the hostel, modifying the details of the students, deleting the students, viewing the students details in the Hostel. This project’s main motto is to reduce the effort of Wardens and provide better service to the students. The goal of this project is to develop a system for the computerization of the Hostel. The common transactions of the hostel includes the maintenance of mess bills, information about students in the hostel, enrolling of new students and their payments and dues etc are stored into the databases and reports are generated according to the user requirements.

## TABLE OF CONTENTS

CHAPTER NO	TITLE	PAGE NO
	<b>ABSTRACT</b>	
	<b>LIST OF FIGURES</b>	
	<b>LIST OF ABBREVIATION</b>	
1	<b>PROBLEM STATEMENT</b>	1-3
2	<b>STAKEHOLDERS &amp; PROCESS MODELS</b>	4-7
3	<b>IDENTIFYING REQUIREMENTS</b>	8-10
4	<b>PROJECT PLAN &amp; EFFORT</b>	11-15
5	<b>WORK BREAKDOWN STRUCTURE &amp; RISK ANALYSIS</b>	16-20
6	<b>SYSTEM ARCHITECTURE, USE CASE &amp; CLASS DIAGRAM</b>	21-23
7	<b>ENTITY RELATIONSHIP DIAGRAM</b>	24-29
8	<b>DATA FLOW DIAGRAM</b>	30-33
9	<b>SEQUENCE &amp; COLLABORATION DIAGRAM</b>	34-36
10	<b>DEVELOPMENT OF TESTING FRAMEWORK/USER INTERFACE</b>	37-40
11	<b>TEST CASES &amp; REPORTING</b>	41-44
12	<b>ARCHITECTURE/DESIGN/FRAMEWORK/IMPLEMENTATION</b>	45-47
	<b>CONCLUSION</b>	
	<b>REFERENCES</b>	
	<b>APPENDIX (CODE)</b>	

## List Of Figures:

Figure Number	Title	Page Number
1	One page business case template	3
2	Internal Stakeholder	5
3	External Stakeholder	6
4	Project Management Plan	12
5	Effort and Cost Estimation	12
6	Infrastructure/Resource Cost	13
7	Maintenance and Support Cost	13
8	Identification of Team members	14
9	Responsibility Assignment Matrix	14
10	Gantt Chart	18
11	Swott & RMMM	19
12	System Architecture	22
13	Use Case Diagram	22
14	Class Diagram	23
15	DFD Level 0	31
16	DFD Level 1	32
17	Sequence Diagram	35

<b>18</b>	<b>Collaboration Diagram</b>	<b>36</b>
<b>19</b>	<b>Functional Requirements</b>	<b>39</b>
<b>20</b>	<b>Non Functional Requirements</b>	<b>40</b>
<b>21</b>	<b>Functional Testing</b>	<b>41</b>
<b>22</b>	<b>Non-Functional Testing</b>	<b>42</b>



## Department of Computing Technologies

**SRM IST, Kattankulathur – 603 203**

**Course Code: 18CSC206J**

**Course Name: Software Engineering and Project Management**

<b>Experiment No</b>	1
<b>Title of Experiment</b>	To identify the Software Project, Create Business Case, Arrive at a Problem Statement
<b>Team Leader</b>	Saurabh Pandey
<b>Team Members</b>	Saurabh Pandey, Naimish Pandey, Samarth Pandey
<b>Register Number</b>	RA2011003010207, RA2011003010147, RA2011003010194
<b>Date of Experiment</b>	08/03/2022

### Mark Split Up

<b>S.No</b>	<b>Description</b>	<b>Maximum Mark</b>	<b>Mark Obtained</b>
1	Exercise	5	
2	Viva	5	
<b>Total</b>		<b>10</b>	

**Staff Signature with date**

## Aim

To Frame a project team, analyze and identify a Software project. To create a business case and Arrive at a Problem Statement for the Hostel Management System.

## Team Members:

Sl No	Register No	Name	Role
1	RA2011003010207	SAURABH PANDEY	Lead
2	RA2011003010194	SAMARTH PANDEY	Member
3	RA2011003010147	NAIMISH PANDEY	Member

## Project Title: HOSTEL MANAGEMENT SYSTEM

**Project Description:** The Hostel Management System is a system that manages the student records, staff records, mess facility, laundry details, housekeeping, hostel allocation, fees and receipts, biometric attendance details, and behavioral report. It is one of the important projects that will simplify the work of the institutions in allocating hostels and rooms with great ease. It will help the students and the hostel staff both to get details about everything and maintain transparency. The interface we will be creating in this project would be simple, adequate and accurate.

**Result:** Thus, the project team formed, the project is described, the business case was prepared and the problem statement was arrived.

# ONE PAGE BUSINESS CASE TEMPLATE

DATE	08/03/2022
SUBMITTED BY	Saurabh Pandey, Samarth Pandey, Naimish Pandey
TITLE / ROLE	HOSTEL MANAGEMENT SYSTEM/Team Leader



## THE PROJECT

In bullet points, describe the problem this project aims to solve or the opportunity it aims to develop.

- It aims to provide transparency for students and staff.
- It helps the admin to manage the following:
  - ❖ Student Details
  - ❖ Staff Details
  - ❖ Room allocation
  - ❖ Fee & Receipts
  - ❖ Mess Details
  - ❖ Laundry Services
  - ❖ Housekeeping
  - ❖ Attendance
  - ❖ Behavioral Report

## THE HISTORY

In bullet points, describe the current situation.

- The existing system is a manually maintained system.
- All the details are entered, updated and retrieved manually.
- The manual process is way too time consuming and not efficient enough.
- Manual work increases the risk of inaccuracy of the data.
- With a lot of data to be stored, it is not possible to have everything handy and updating anything is very difficult.

## LIMITATIONS

List what could prevent the success of the project, such as the need for expensive equipment, bad weather, lack of special training, etc.

- Server issue
- Time management
- Data collapse
- Double entry

## APPROACH

List what is needed to complete the project.

- Hardware Requirements
  - ❖ Processor: Pentium
  - ❖ RAM: 512MB
  - ❖ Hard Disk: 8GB
- Software Requirements
  - ❖ Language: JAVA
  - ❖ Operating System: Windows XP Professional
  - ❖ Software: JAVA (Swings)
  - ❖ Tool: Command Prompt
  - ❖ Database: Oracle 8.010
  - ❖ We need Authorization Schemes for the successful development of the project.

## BENEFITS

In bullet points, list the benefits that this project will bring to the organization.

- The proposed system is the computerized version of the existing system.
- Provides easy and quick access over the data.
- Centralized database.
- Good Security for user information.
- User friendly.
- Easier and flexible.



## Department of Computing Technologies

**SRM IST, Kattankulathur – 603 203**

**Course Code: 18CSC206J**

**Course Name: Software Engineering and Project Management**

<b>Experiment No</b>	<b>2</b>
<b>Title of Experiment</b>	<b>Identification of Project Methodology and Stakeholder Description</b>
<b>Team Leader</b>	<b>SAURABH PANDEY</b>
<b>Team Members</b>	<b>SAURABH PANDEY, NAIMISH PANDEY, SAMARTH PANDEY</b>
<b>Register Number</b>	<b>RA2011003010207, RA2011003010147, RA2011003010194</b>
<b>Date of Experiment</b>	<b>15/03/2022</b>

### Mark Split Up

<b>S.No</b>	<b>Description</b>	<b>Maximum Mark</b>	<b>Mark Obtained</b>
1	Presentation	5	
2	Project Methodology	2.5	
3	Stakeholder Identification	2.5	
<b>Total</b>		<b>10</b>	

## **Staff Signature with date**

### **Aim**

To identify the appropriate Process Model for the project and prepare Stakeholder and User Description.

### **Team Members:**

<b>Sl No</b>	<b>Register No</b>	<b>Name</b>	<b>Role</b>
<b>1</b>	<b>RA2011003010207</b>	<b>Saurabh Pandey</b>	<b>Lead</b>
<b>2</b>	<b>RA2011003010194</b>	<b>Samarth Pandey</b>	<b>Member</b>
<b>3</b>	<b>RA2011003010147</b>	<b>Naimish Pandey</b>	<b>Member</b>

### **Project Title: HOSTEL MANAGEMENT SYSTEM**

#### **1. Executive Summary**

##### **1.1 Project Methodology:**

Agile Methodology is a people-focused, results-focused approach to software development that respects our rapidly changing world.

It's centred around adaptive planning, self-organization, and short delivery times.

It's flexible, fast, and aims for continuous improvements in quality, to put in simple terms, Agile helps teams in delivering value to customers quickly and effortlessly.

Thus, developing such software management project, Agile methodology brings out the most effective growth out of it.

##### **1.2 Stakeholder Identification:**

###### **Internal stakeholders:**

The internal stakeholders include the team members, managers, executives who are all internally related.

<b>Project Role</b>	<b>Responsibilities</b>	<b>Team members assigned to</b>
Project Manager	Assigning and Managing Task	Saurabh Pandey
Technical Lead	Final call on the technical decisions, Manage Developers	Naimish Pandey
Business Analyst	Plan out usage strategies & bring in more investors	Samarth Pandey
Developer	Work on developing the project efficiently	Ananya Tripathy
Tester	Testing the project intensively	Shanvi Kayal

### **External stakeholders:**

<b>Project Role</b>	<b>Responsibilities</b>	<b>Team members assigned to</b>
Bank	To receive and make a record of the money paid by the students to book a hostel and avail all the facilities.	HDFC
Customers	Responsibility of the customer is to provide accurate feedback so that the team can improve from their mistakes.	SRMIST-Kattankulathur
Shareholders	People who buy stocks from the company and help invest in it.	Surya Pratap Singh
Creditors	Lend money to the company, and may or may not have a secured interest in the company's assets, under which they can be paid back from the sale of those assets.	Gauri Tripathi

## **2. Stakeholder Management**

### **2.1 Interest and Influence matrix**

<b>Interest</b>	<b>Influence</b>
High	High
Low	Low
Low	High
High	Low

## **2.2 STAKEHOLDER INTEREST, INFLUENCE, PRIORITY IDENTIFICATION**

Stakeholder	Responsibility	Interest	Influence	Estimated Priority
Owner	Achieve Targets, Improve Sales	high	high	1
Sponsor	Provides new markets to expand ventures. Negotiate funding for project	low	high	3
Team members	Demand incentives Retain and upgrade skills New product excitement	high	low	2
Project Manager	Lead the team in every aspect Accountable for entire project scope success and failure	high	low	2
Investors	Promoter of investment Provides necessary financial resources	low	high	3
Resource Manager	Resource planning and allocation Ensuring adequate resource according to project needs and budget	high	high	5
Suppliers	Ensuring feasible and realistic in every aspect Managing divergence from budgeted cost	high	low	6
End Users	Provides Feedback	low	high	4

### **Reference:**

<https://www.iitms.co.in/higher-education-erp/hostel-management/#:~:text=Hostel%20management%20system%20is%20designed,payroll%2C%20student%20certificates%2C%20etc.>

### **Result:**

Thus the Project Methodology was identified and stakeholders were described.



## Department Of Networking and Communications

**SRM IST, Kattankulathur – 603 203**

**Course Code: 18CSC206J**

**Course Name: Software Engineering and Project Management**

<b>Experiment No</b>	3
<b>Title of Experiment</b>	System, Functional and Non-Functional Requirements of the Project
<b>Team Leader</b>	Saurabh Pandey
<b>Team Members</b>	Saurabh Pandey, Samarth Pandey, Naimish Pandey
<b>Register Number</b>	RA2011003010207, RA2011003010194, RA2011003010147
<b>Date of Experiment</b>	22/03/22

### Mark Split Up

<b>S.No</b>	<b>Description</b>	<b>Maximum Mark</b>	<b>Mark Obtained</b>
1	Exercise	5	
2	Viva	5	
<b>Total</b>		<b>10</b>	

**Staff Signature with date**

## **Aim**

To identify the system, functional and non-functional requirements for the Hostel Management System.

## **Team Members:**

S No	Register No	Name	Role
1	RA2011003010207	Saurabh Pandey	Rep/Member
2	RA2011003010194	Samarth Pandey	Member
3	RA2011003010147	Naimish Pandey	Member

## **Project Title: HOSTEL MANAGEMENT SYSTEM**

### **User Requirements:**

The website should have a smooth transition. The website should give precise information which in turn saves time. The website should have a ham-burger menu for an easy navigation system and be user-friendly.

### **System Requirements:**

SR1: System must be secure from insider or outsider attackers.

SR2: System must be reliable.

SR3: System's service must be available 24/7.

SR4: Backup of the system must be available.

### **Functional Requirements:**

FR1: User shall generate the user's profile containing the following information: user account no, full name ,address, phone no & room no.

FR2: User allow the hostel staff members or guardians to scan the student's id and access its profile.

FR3: User must have the details of a mess of a student and stored in a database.

FR4: User must allow the warden to add new users to the system's database.

FR5: User must allow the guardian to cancel the registration from the system's database who will leave room.

**Non-Functional Requirements:**

N-FR1: Providing rating after request completion.

N-FR2: Select available time slot for response to issue.

N-FR3: Get predefined fields of question for better characterizing the main problem area.

**Result:**

Thus the requirements were identified and accordingly described.



## Department of Networking and Communications

**SRM IST, Kattankulathur – 603 203**

**Course Code: 18CSC206J**

**Course Name: Software Engineering and Project Management**

<b>Experiment No</b>	4		
<b>Title of Experiment</b>	Prepare Project Plan based on scope, Calculate Project effort based on resources and Job roles and responsibilities		
<b>Team Leader</b>	<b>Saurabh Pandey</b>		
<b>Team Members</b>	<b>Saurabh Pandey</b>	<b>Samarth Pandey</b>	<b>Naimish Pandey</b>
<b>Register Number</b>	<b>RA2011003010207</b>	<b>RA2011003010194</b>	<b>RA2011003010147</b>
<b>Date of Experiment</b>	28th March 2022		

### Mark Split Up

<b>S.No</b>	<b>Description</b>	<b>Maximum Mark</b>	<b>Mark Obtained</b>
1	Exercise	5	
2	Viva	5	
<b>Total</b>		<b>10</b>	

**Staff Signature with date**

## Aim

To Prepare Project Plan based on scope, Calculate Project effort based on resources, Find Job roles and responsibilities

## Team Members:

Sl No	Register No	Name	Role
1	RA2011003010207	Saurabh Pandey	Lead
2	RA2011003010194	Samarth Pandey	Member
3	RA2011003010147	Naimish Pandey	Member

## 1. Project Management Plan

Describe the key issues driving the project. [Min 3 Focus Areas]

Focus Area	Details
Scope Management	It is a fully computerized system. The use of this project in hostel can reduce all the problems faced in hostel management system which is still working manually (i.e., pen & paper)
Resource Management	In our team we'll require people with technical skills (JAVA, Kotlin, React, React Native, JavaScript, Angular)
Schedule Management	A proper monitoring will be done at the end of the day by close-up meeting. Certain goals will be set that should be achieved within the stipulated time.

## 2. Estimation

### 2.1. Effort and Cost Estimation

Activity Description	Sub-Task	Sub-Task Description	Effort (in hours)	Cost in INR
Design the user screen	E1R1A1T1 (Effort-Requiremen	Confirm the user requirements (acceptance criteria)	2	1000

	t-Activity-Task)			
	E1R1A1T2	Make the list for the features required.	2	1000
	E1R1A1T3	Take the review of the user.	2	1000
Developing Partnerships with Bloggers	E2R1A1T1	Talk and arrange with a group of wardens that are willing to let us know about the requirements for the project.	3	1500
	E2R1A1T2	Talk and arrange a partnership with a software company.	5	2500
Advertising	E3R1A1T1	Plan advertising with partner companies.	4	2000
	E3R1A1T2	Advertise through social media, television, radio.	2	1000

Effort (hr)	Cost (INR)
1	500

## 2.2. Infrastructure/Resource Cost [CapEx]

< OneTime Infra requirements >

Infrastructure Requirement	Qty	Cost per qty	Cost per item
IR1-Storage	10	500	5000
IR2-Server	1	5000	5000
IR3-Network	1	200	2000

## 2.3 Maintenance and Support Cost [OpEx]

Category	Details	Qty	Cost per qty per annum	Cost per item
People	Network, System, Middleware and DB admin  Developer, Support Consultant	3	2,000,000	6,000,000
License	Operating System	10	10000	100,000

	Database Middleware IDE			
Infrastructure S	Server, Storage and Network	20	20000	400,000

### 3. Project Team Formation

#### 3.1. Identification Team members

Name	Role	Responsibilities
Saurabh Pandey	Key Business User (Product Owner)	Provide clear business and user requirements
Samarth Pandey	Project Manager	Manage the project
Saurabh Pandey	Business Analyst	Discuss and Document Requirements
Ananya Tripathy	Technical Lead	Design the end-to-end architecture
Shanvi Kayal	UX Designer	Design the user experience
Naimish Pandey	Frontend Developer	Develop user interface
Sanjay Shaturvedi	Backend Developer	Design, Develop and Unit Test Services/API/DB
Gauri Tripathi	Cloud Architect	Design the cost effective, highly available and scalable architecture
Surya Pratap Singh	Cloud Operations	Provision required Services
Vaibhav Ganesh	Tester	Define Test Cases and Perform Testing

#### 3.2. Responsibility Assignment Matrix

RACI Matrix		Team Members		
Activity	Saurabh Pandey (BA)	Naimish Pandey (Developer)	Samarth Pandey (Project Manager)	Key Business User
Design the User Interface	A	C/I	I	R
Developing Partnerships with Bloggers	A	I	R	I
Advertising	I	I	A/R	C

A	Accountable
R	Responsible
C	Consult
I	Inform

## Reference

1. <https://www.pmi.org/>
2. <https://www.projectmanagement.com/>
3. <https://www.tpsgc-pwgsc.gc.ca/biens-property/sngp-npms/ti-it/ervcpgrm-dsfvpmpt-eng.html>



## Department of Networking and Communications

**SRM IST, Kattankulathur – 603 203**

**Course Code: 18CSC206J**

**Course Name: Software Engineering and Project Management**

<b>Experiment No</b>	5
<b>Title of Experiment</b>	Prepare Work breakdown structure, Timeline chart, Risk identification table
<b>Team Leader</b>	Saurabh Pandey
<b>Team Members</b>	Saurabh Pandey, Samarth Pandey, Naimish Pandey
<b>Register Number</b>	RA2011003010207, RA2011003010194, RA2011003010147
<b>Date of Experiment</b>	11/04/2022

### Mark Split Up

<b>S.No</b>	<b>Description</b>	<b>Maximum Mark</b>	<b>Mark Obtained</b>
1	Exercise	5	
2	Viva	5	
<b>Total</b>		<b>10</b>	

**Staff Signature with date**

## **Aim**

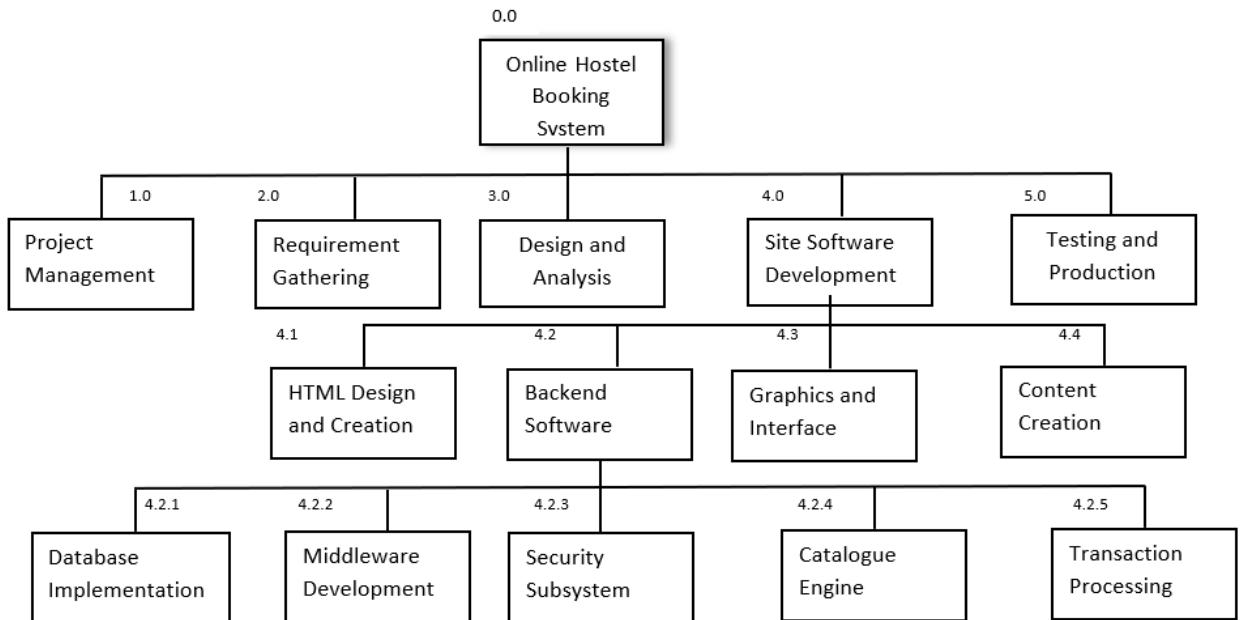
To Prepare Work breakdown structure, Timeline chart and Risk identification table

## **Team Members:**

<b>Sl No</b>	<b>Register No</b>	<b>Name</b>	<b>Role</b>
<b>1</b>	<b>RA2011003010207</b>	<b>Saurabh Pandey</b>	<b>Rep</b>
<b>2</b>	<b>RA2011003010194</b>	<b>Samarth Pandey</b>	<b>Member</b>
<b>3</b>	<b>RA2011003010147</b>	<b>Naimish Pandey</b>	<b>Member</b>

## **Result:**

Thus, the work breakdown structure with timeline chart and risk table were formulated successfully.



- 0.0 Online Hostel Booking System
- 1.0 Project Management
- 2.0 Requirements Gathering
- 3.0 Analysis & Design
- 4.0 Site Software Development
  - 4.1 HTML Design and Creation
  - 4.2 Backend Software
    - 4.2.1 Database Implementation
    - 4.2.2 Middleware Development
    - 4.2.3 Security Subsystems
    - 4.2.4 Catalog Engine
    - 4.2.5 Transaction Processing
  - 4.3 Graphics and Interface
  - 4.4 Content Creation
- 5.0 Testing and Production

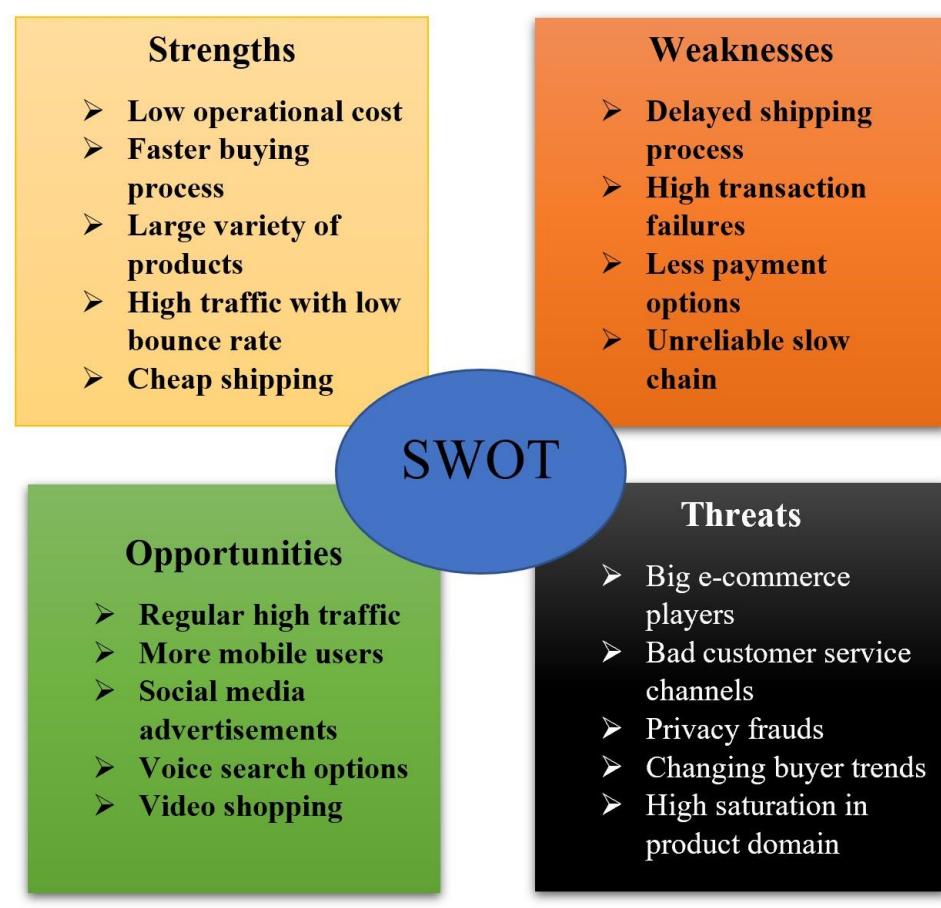
## TIMELINE – GANTT CHART

<b>Hostel Management System</b>	<b>Start</b>	<b>End</b>	<b>0h</b>	<b>49%</b>	<b>Duration</b>
<b>Initial Stage</b>	<b>08-03-2022</b>	<b>12-03-2022</b>	<b>0h</b>	<b>100%</b>	<b>4</b>
Understanding the goals	08-03-2022	12-03-2022	0h	100%	4
Identifying the approach	09-03-2022	10-03-2022	0h	100%	1
Project approach	10-03-2022	12-03-2022	0h	100%	2
<b>Identification of methodology</b>	<b>14-03-2022</b>	<b>20-03-2022</b>	<b>0h</b>	<b>100%</b>	<b>6</b>
Selection of methodology	14-03-2022	15-03-2022	0h	100%	1
Identification stakeholders	15-03-2022	19-03-2022	0h	100%	4
Communication plan	19-03-2022	20-03-2022	0h	100%	1
<b>Identification of Requirements</b>	<b>21-03-2022</b>	<b>27-03-2022</b>	<b>0h</b>	<b>100%</b>	<b>6</b>
Functional requirement	21-03-2022	22-03-2022	0h	100%	1
Non functional requirement	22-03-2022	25-03-2022	0h	100%	3
System requirements	25-03-2022	27-03-2022	0h	100%	2
<b>Project Management</b>	<b>29-03-2022</b>	<b>09-04-2022</b>	<b>0h</b>	<b>100%</b>	<b>11</b>
Project management plan	29-03-2022	02-04-2022	0h	100%	4
Cost estimation	02-04-2022	04-04-2022	0h	100%	2
Risk analysis	04-04-2022	08-04-2022	0h	100%	4
Project timeline reviewed	08-04-2022	09-04-2022	0h	100%	1
<b>Designing</b>	<b>10-04-2022</b>	<b>14-04-2022</b>	<b>0h</b>	<b>100%</b>	<b>4</b>
designing main page	10-04-2022	13-04-2022	0h	100%	3
review and finalizing	13-04-2022	14-04-2022	0h	100%	1
<b>Coding and Implementation front...</b>	<b>16-04-2022</b>	<b>30-04-2022</b>	<b>0h</b>	<b>0%</b>	<b>14</b>
developing basic HTML structure	16-04-2022	23-04-2022	0h	0%	7
developing user interface	23-04-2022	29-04-2022	0h	0%	6
reviewing and finalizing structure	29-04-2022	30-04-2022	0h	0%	1
<b>Back end</b>	<b>03-05-2022</b>	<b>03-06-2022</b>	<b>0h</b>	<b>0%</b>	<b>31</b>
developing basic functioning site	03-05-2022	12-05-2022	0h	0%	9
creating database for user	12-05-2022	17-05-2022	0h	0%	5
integrating the database	17-05-2022	21-05-2022	0h	0%	4
module implementation phase1	21-05-2022	26-05-2022	0h	0%	5
module phase implementation phase2	26-05-2022	01-06-2022	0h	0%	6
reviewing and ready for testing	02-06-2022	03-06-2022	0h	0%	1

Start	End	0h	49% Duration
08-03-2022	12-03-2022	0h	100%
08-03-2022	12-03-2022	0h	100%
09-03-2022	10-03-2022	0h	100%
10-03-2022	12-03-2022	0h	100%
			2
14-03-2022	20-03-2022	0h	100%
14-03-2022	15-03-2022	0h	100%
15-03-2022	19-03-2022	0h	100%
19-03-2022	20-03-2022	0h	100%
			1
21-03-2022	27-03-2022	0h	100%
21-03-2022	22-03-2022	0h	100%
22-03-2022	25-03-2022	0h	100%
25-03-2022	27-03-2022	0h	100%
			2
29-03-2022	09-04-2022	0h	100%
29-03-2022	02-04-2022	0h	100%
02-04-2022	04-04-2022	0h	100%
04-04-2022	08-04-2022	0h	100%
08-04-2022	09-04-2022	0h	100%
			1
10-04-2022	14-04-2022	0h	100%
10-04-2022	13-04-2022	0h	100%
13-04-2022	14-04-2022	0h	100%
			1
16-04-2022	30-04-2022	0h	0%
16-04-2022	23-04-2022	0h	0%
23-04-2022	29-04-2022	0h	0%
29-04-2022	30-04-2022	0h	0%
			1
03-05-2022	03-06-2022	0h	0%
03-05-2022	12-05-2022	0h	0%
12-05-2022	17-05-2022	0h	0%
17-05-2022	21-05-2022	0h	0%
21-05-2022	26-05-2022	0h	0%
26-05-2022	01-06-2022	0h	0%
02-06-2022	03-06-2022	0h	0%
			1



## RISK ANALYSIS – SWOT & RM



Response	Strategy	Examples
Avoid	Risk avoidance is a strategy where the project team takes action to remove the threat of the risk or protect from the impact	<ul style="list-style-type: none"> <li>• Extending the schedule</li> <li>• Change the execution strategy</li> <li>• Reducing scope</li> </ul>
Transfer	Risk transference involves shifting of transferring the risk threat and impact to a third party. Rather transfer the responsibility and ownership	<ul style="list-style-type: none"> <li>• Order cancellations</li> <li>• Shipping mishaps</li> </ul>
Mitigate	Risk mitigation is a strategy where the project team takes an action to reduce the probability of the risk occurring. This does not risk or potential impact, but rather reduces the likelihood of it becoming real	<ul style="list-style-type: none"> <li>• Increasing testing</li> <li>• Reduce process complexity</li> <li>• Stress test on the server</li> </ul>
Accept	Risk acceptance means the team acknowledges the risk and its potential impact, but decides not to take any pre-emptive action to prevent it. It is dealt with only if it occurs	<ul style="list-style-type: none"> <li>• Management schedule float</li> <li>• Contingency reserve budget</li> </ul>



## School of Computing

**SRM IST, Kattankulathur – 603 203**

**Course Code: 18CSC206J**

**Course Name: Software Engineering and Project Management**

<b>Experiment No</b>	6
<b>Title of Experiment</b>	Design a System Architecture, Use Case and Class Diagram
<b>Team Leader</b>	Saurabh Pandey
<b>Team Members</b>	Samarth Pandey, Samarth Pandey, Naimish Pandey
<b>Register Number</b>	RA2011003010207, RA2011003010194, RA2011003010147
<b>Date of Experiment</b>	05/05/2022

### Mark Split Up

<b>S.No</b>	<b>Description</b>	<b>Maximum Mark</b>	<b>Mark Obtained</b>
1	Exercise	5	
2	Viva	5	
<b>Total</b>		<b>10</b>	

## Staff Signature with date

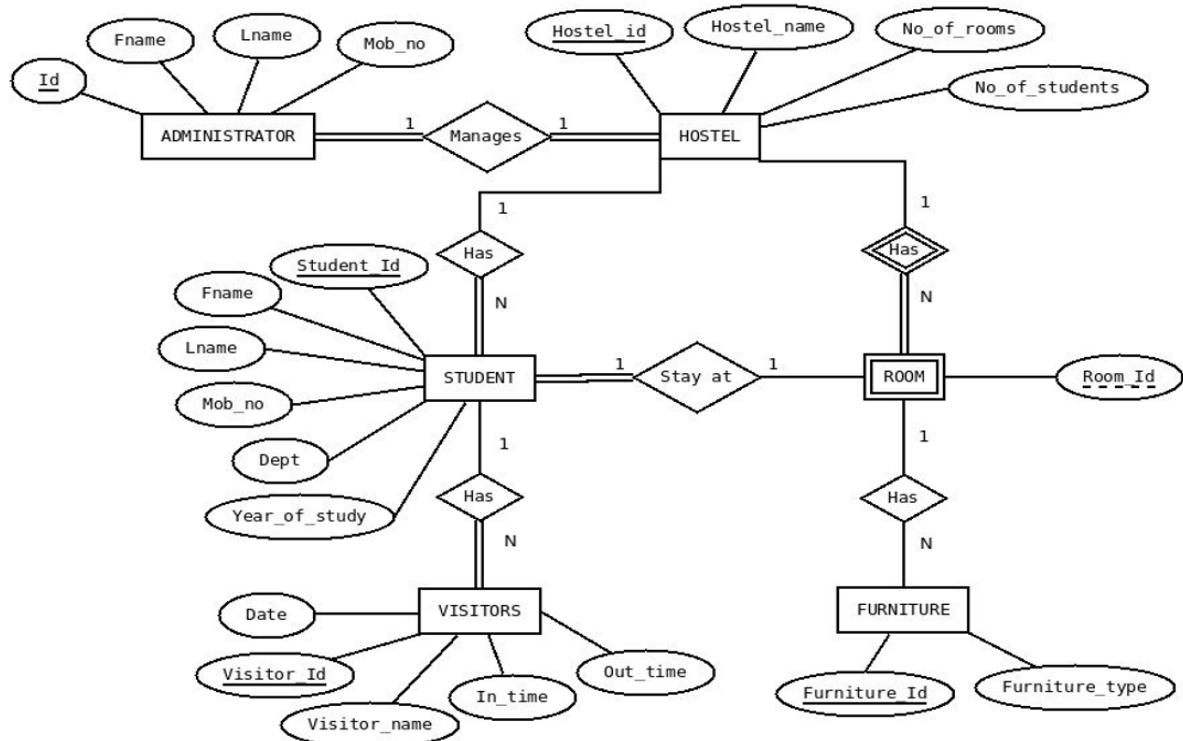
### Aim:

To Design a System Architecture, Use case and Class Diagram

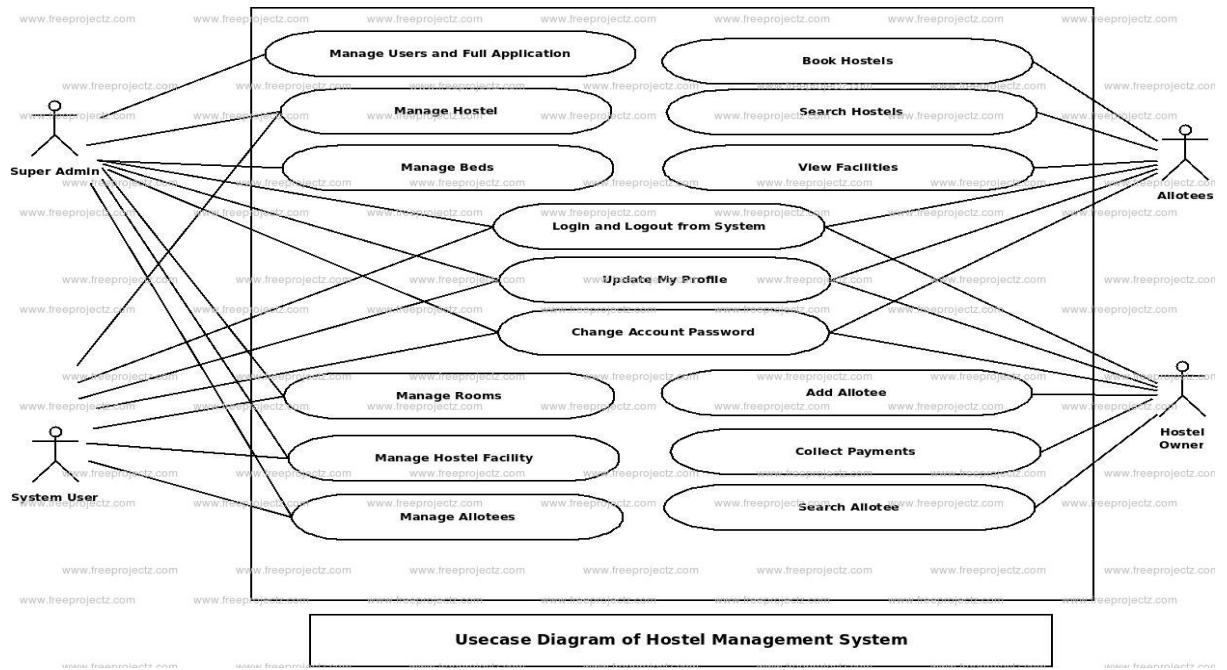
### Team Members:

Sl No	Register No	Name	Role
1	RA2011003010207	SAURABH PANDEY	Rep
2	RA2011003010194	SAMARTH PANDEY	Member
3	RA2011003010147	NAIMISH PANDEY	Member

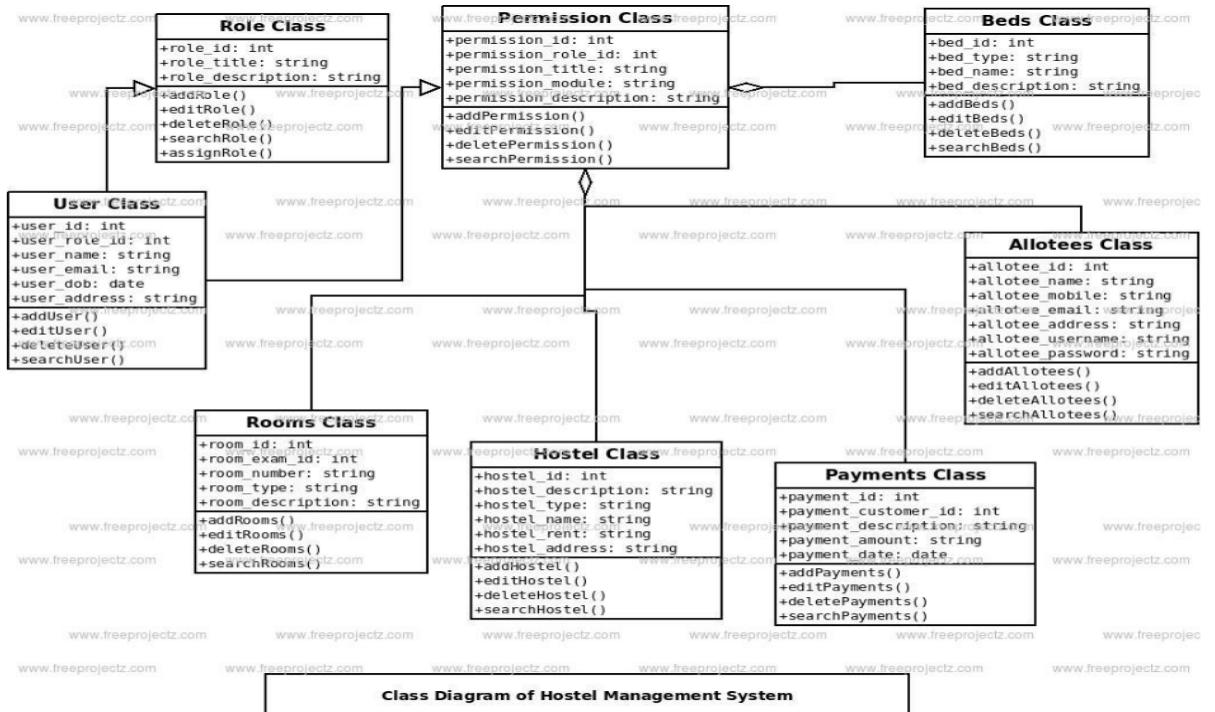
### System Architecture Diagram:



## Use Case Diagram:



## Class Diagram:



## Result:

Thus, the system architecture, use case and class diagram created successfully.



## School of Computing

**SRM IST, Kattankulathur – 603 203**

**Course Code: 18CSC206J**

**Course Name: Software Engineering and Project Management**

<b>Experiment No</b>	7
<b>Title of Experiment</b>	Design a Entity relationship diagram
<b>Team Leader</b>	SAURABH PANDEY
<b>Team Members</b>	SAURABH PANDEY, SAMARTH PANDEY, NAIMISH PANDEY
<b>Register Number</b>	RA2011003010207, RA2011003010194, RA2011003010147
<b>Date of Experiment</b>	05/05/2022

### Mark Split Up

<b>S. No</b>	<b>Description</b>	<b>Maximum Mark</b>	<b>Mark Obtained</b>
1	Exercise	5	
2	Viva	5	
<b>Total</b>		<b>10</b>	

**Staff Signature with date**

## Aim

To create the Entity Relationship Diagram

## Team Members:

S No	Register No	Name	Role
1	RA2011003010207	Saurabh Pandey	Rep
2	RA2011003010194	Samarth Pandey	Member
3	RA2011003010147	Naimish Pandey	Member

## \*/ ER Diagram, Notation and Example

### What is ER Diagram?

- ER Diagram stands for Entity Relationship Diagram, also known as ERD is a diagram that displays the relationship of entity sets stored in a database. In other words, ER diagrams help to explain the logical structure of databases. ER diagrams are created based on three basic concepts: entities, attributes and relationships.
- ER Diagrams contain different symbols that use rectangles to represent entities, ovals to define attributes and diamond shapes to represent relationships.
- At first look, an ER diagram looks very similar to the flowchart. However, ER Diagram includes many specialized symbols, and its meanings make this model unique. The purpose of ER Diagram is to represent the entity framework infrastructure.

### What is ER Model?

- ER Model stands for Entity Relationship Model is a high-level conceptual data model diagram. ER model helps to systematically analyze data requirements to produce a well-designed database.
- ER Model represents real-world entities and the relationships between them. Creating an ER Model in DBMS is considered as a best practice before implementing your database.
- ER Modeling helps you to analyze data requirements systematically to produce a well-designed database. So, it is considered a best practice to complete ER modeling before implementing your database.

### Why use ER Diagrams?

Here, are prime reasons for using the ER Diagram

- Helps you to define terms related to entity relationship modeling
- Provide a preview of how all your tables should connect, what fields are going to be on each table
- Helps to describe entities, attributes, relationships

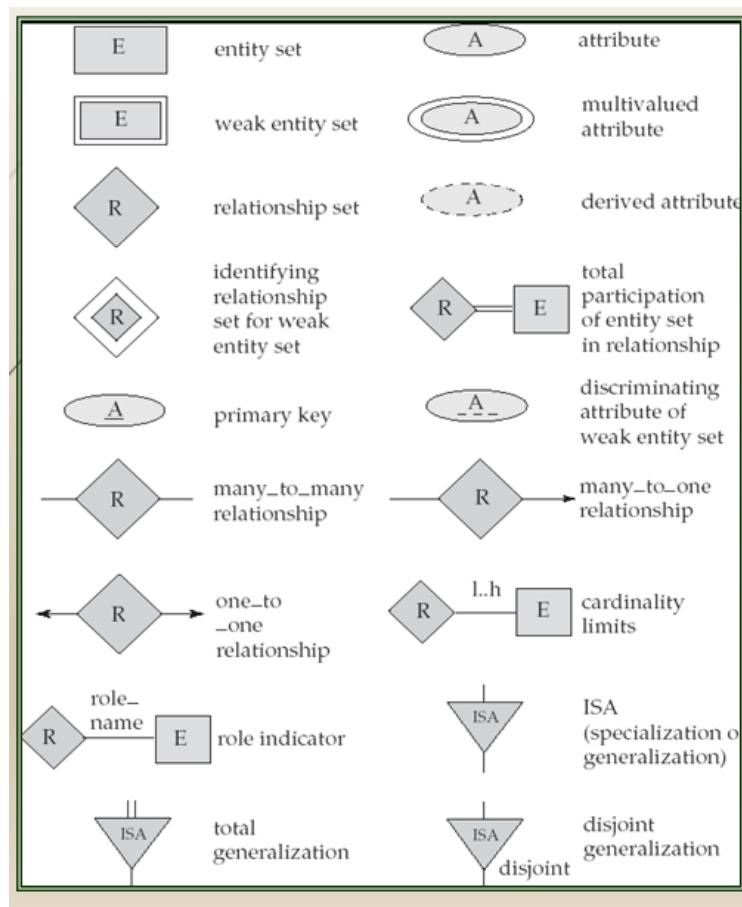
- ER diagrams are translatable into relational tables which allows you to build databases quickly
- ER diagrams can be used by database designers as a blueprint for implementing data in specific software applications
- The database designer gains a better understanding of the information to be contained in the database with the help of ERP diagram
- ERD Diagram allows you to communicate with the logical structure of the database to users

## Components of the ER Diagram

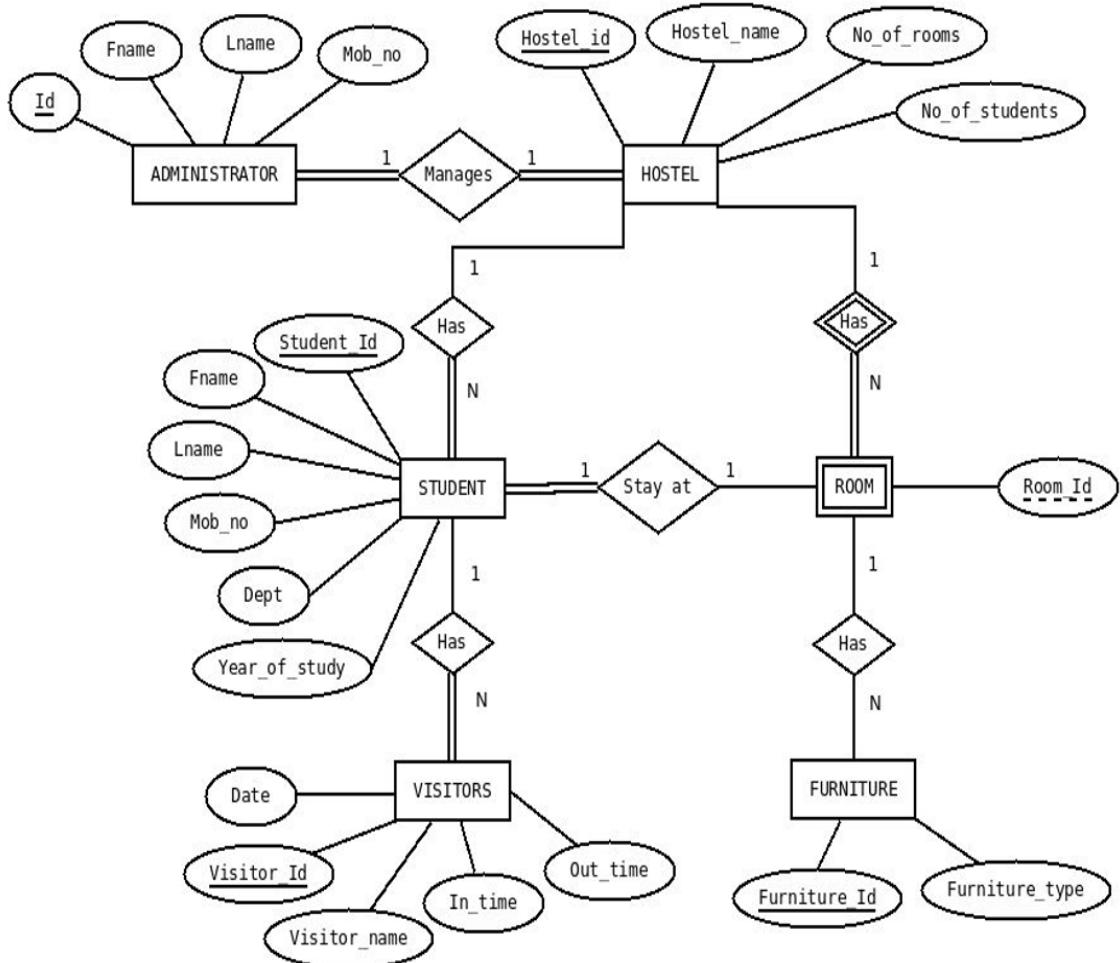
This model is based on three basic concepts: Entities, Attributes, Relationships

### ER Diagram – Notations

- Rectangles represent entity sets.
- Diamonds represent relationship sets.
- Lines link attributes to entity sets and entity sets to relationship sets.
- Ellipses represent attributes
- Double ellipses represent multivalued attributes.
- Dashed ellipses denote derived attributes.
- Underline indicates primary key attributes



## ER Diagram of Hostel Management System :



## Result:

Thus, the entity relationship diagram was created successfully.



## School of Computing

**SRM IST, Kattankulathur – 603 203**

**Course Code: 18CSC206J**

**Course Name: Software Engineering and Project Management**

<b>Experiment No</b>	8
<b>Title of Experiment</b>	Develop a Data Flow Diagram (Process-Up to Level 1)
<b>Team Leader</b>	SAURABH PANDEY
<b>Team Members</b>	SAURABH PANDEY, NAIMISH PANDEY, SAMARTH PANDEY
<b>Register Number</b>	RA2011003010207, RA2011003010147, RA2011003010194
<b>Date of Experiment</b>	26/05/22

### Mark Split Up

<b>S. No</b>	<b>Description</b>	<b>Maximum Mark</b>	<b>Mark Obtained</b>
1	Exercise	5	
2	Viva	5	
<b>Total</b>		<b>10</b>	

**Staff Signature with date**

### **Aim:**

To develop the data flow diagram up to level 1 for the Hostel Management System.

### **Team Members:**

S No	Register No	Name	Role
1	RA2011003010207	Saurabh Pandey	Rep
2	RA2011003010147	Naimish Pandey	Member
3	RA2011003010194	Samarth Pandey	Member

### **Data Flow Diagram**

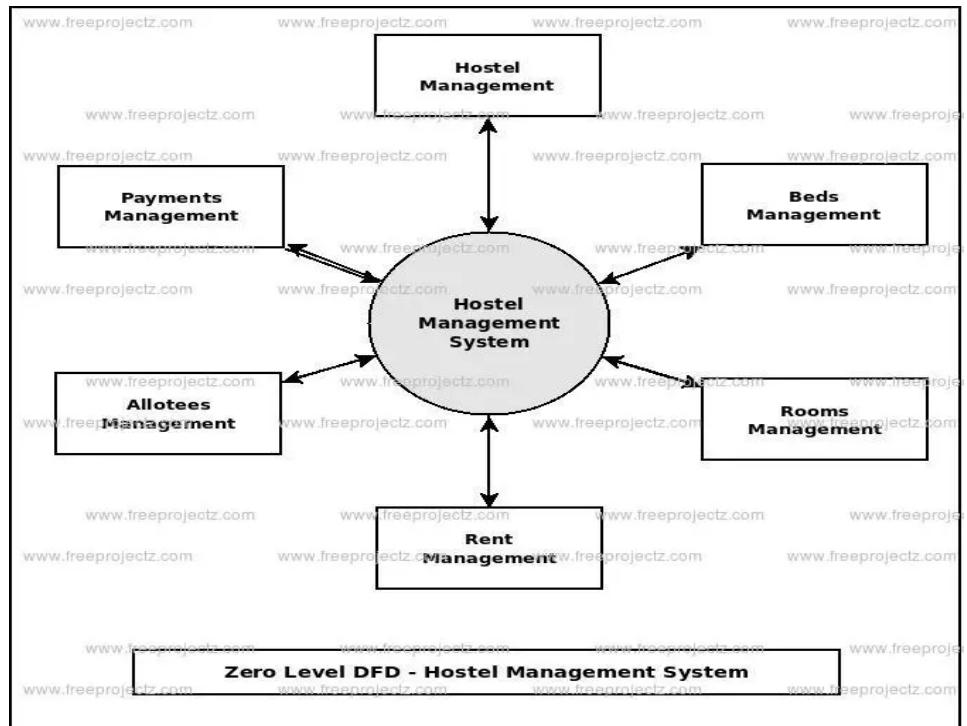
The DFD takes an input-process-output view of a system. That is, data objects flow into the software, are transformed by processing elements, and resultant data objects flow out of the software. Data objects are represented by labeled arrows, and transformations are represented by circles (also called bubbles). The DFD is presented in a hierarchical fashion. That is, the first data flow model (sometimes called a level 0 DFD or context diagram) represents the system as a whole. Subsequent data flow diagrams refine the context diagram, providing increasing detail with each subsequent level.

The data flow diagram enables you to develop models of the information domain and functional domain. As the DFD is refined into greater levels of detail, you perform an implicit functional decomposition of the system. At the same time, the DFD refinement results in a corresponding refinement of data as it moves through the processes that embody the application.

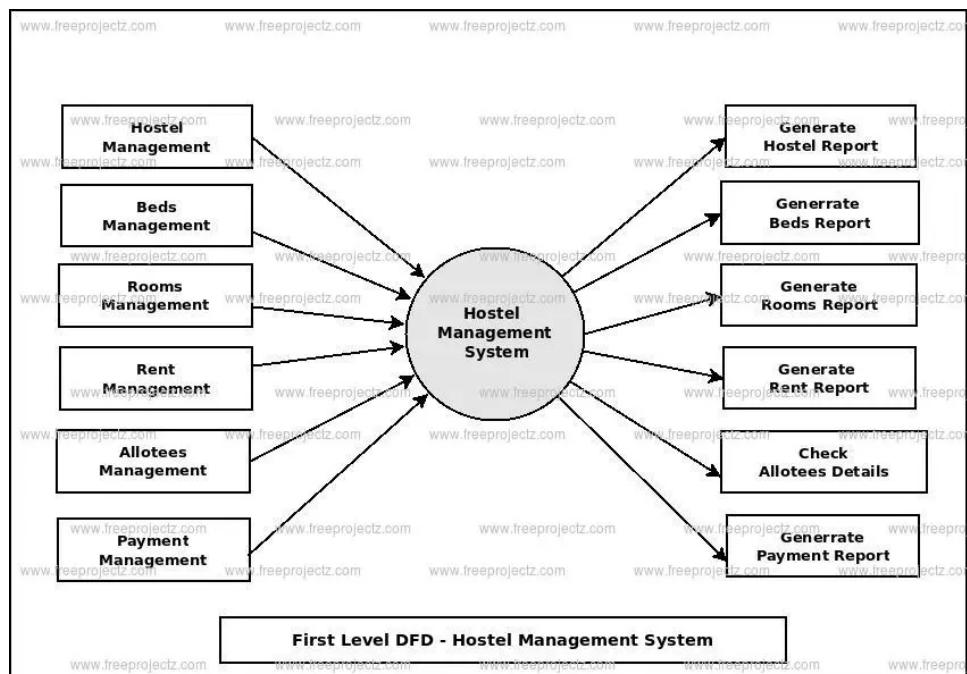
A few simple guidelines can aid immeasurably during the derivation of a data flow diagram:

- (1) Level 0 data flow diagram should depict the software/system as a single bubble;
- (2) Primary input and output should be carefully noted;
- (3) Refinement should begin by isolating candidate processes, data objects, and data stores to be represented at the next level;
- (4) All arrows and bubbles should be labeled with meaningful names;
- (5) Information flow continuity must be maintained from level to level and
- (6) One bubble at a time should be refined. There is a natural tendency to overcomplicate the data flow diagram. This occurs when you attempt to show too much detail too early or represent procedural aspects of the software in lieu of information flow.

## DFD Level 0



## DFD Level 1



## Result:

Thus, the data flow diagrams have been created for the Hostel Management System.



## School of Computing

**SRM IST, Kattankulathur – 603 203**

**Course Code: 18CSC206J**

**Course Name: Software Engineering and Project Management**

<b>Experiment No</b>	9
<b>Title of Experiment</b>	Design a Sequence and Collaboration Diagram
<b>Team Leader</b>	Saurabh Pandey
<b>Team Members</b>	Saurabh Pandey, Naimish Pandey, Samarth Pandey
<b>Register Number</b>	RA2011003010207, RA2011003010147, RA2011003010194
<b>Date of Experiment</b>	08/03/22

### Mark Split Up

<b>S. No</b>	<b>Description</b>	<b>Maximum Mark</b>	<b>Mark Obtained</b>
1	Exercise	5	
2	Viva	5	
<b>Total</b>		<b>10</b>	

**Staff Signature with Date**

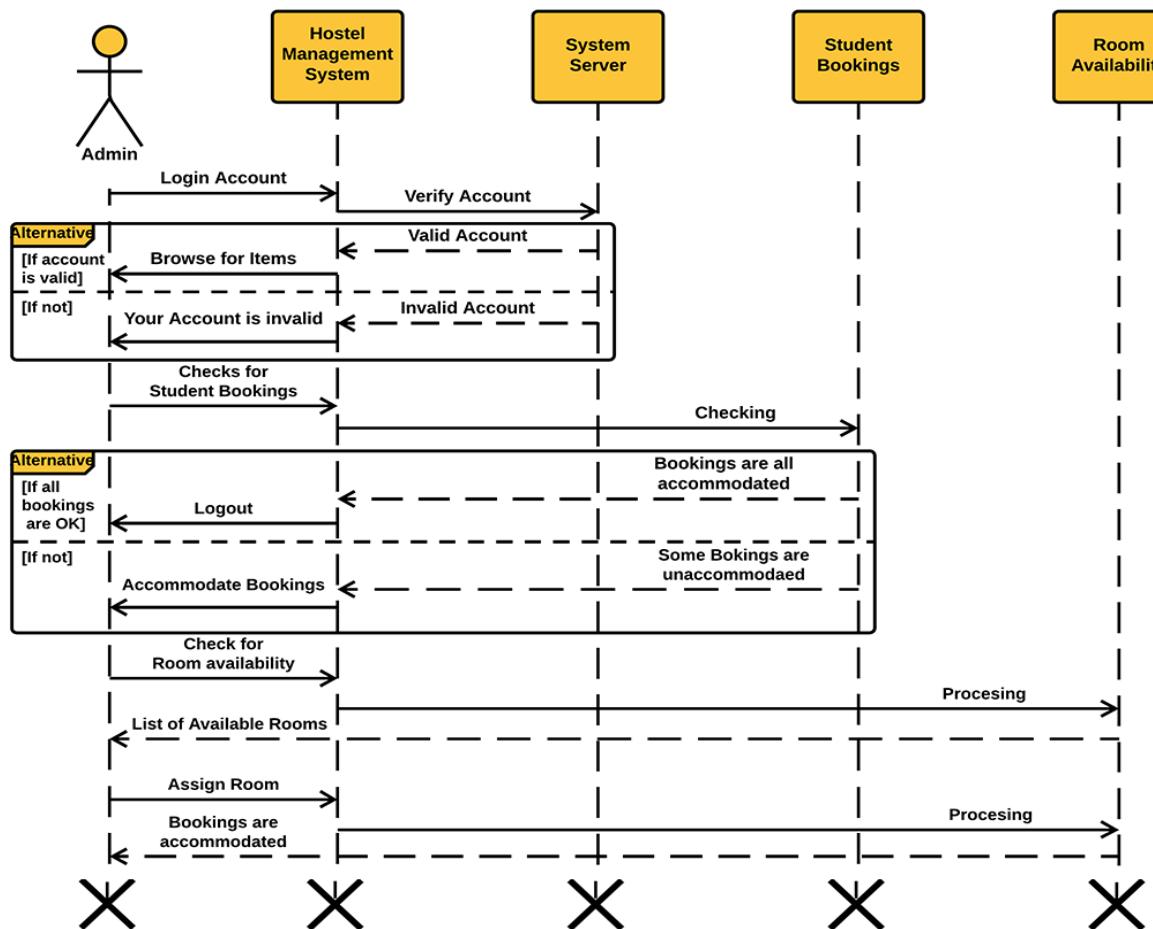
## Aim:

To create the sequence and collaboration diagram for the Hostel Management System.

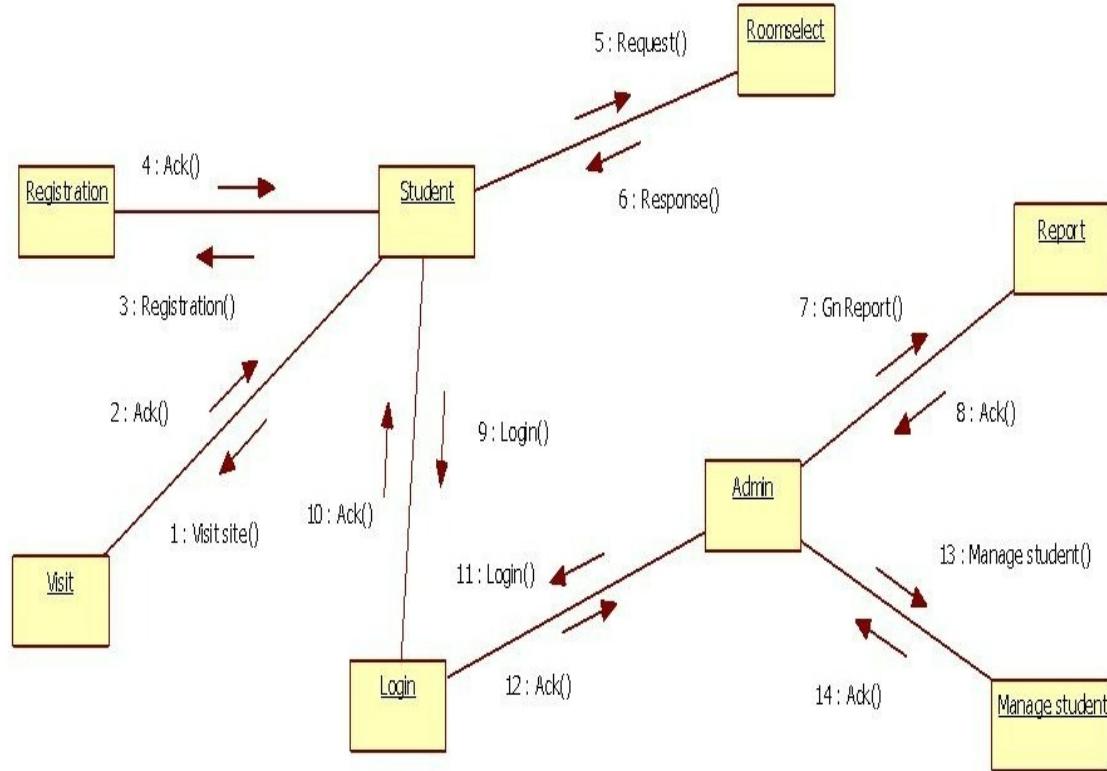
## Team Members:

S No	Register No	Name	Role
1	RA2011003010207	SAURABH PANDEY	Rep/Member
2	RA2011003010147	NAIMISH PANDEY	Member
3	RA2011003010194	SAMARTH PANDEY	Member

## Sequence Diagram:



## Collaboration Diagram:



## Result:

Thus, the sequence and collaboration diagrams were created for the Hostel Management System.



## School of Computing

**SRM IST, Kattankulathur – 603 203**

**Course Code: 18CSC206J**

**Course Name: Software Engineering and Project Management**

<b>Experiment No</b>	10
<b>Title of Experiment</b>	Develop a Testing Framework/User Interface
<b>Name of the candidate</b>	Saurabh Pandey
<b>Team Members</b>	Saurabh Pandey      Naimish Pandey      Samarth Pandey
<b>Register Number</b>	RA2011003010207    RA2011003010147    RA2011003010194
<b>Date of Experiment</b>	16th June 2022

### Mark Split Up

<b>S. No</b>	<b>Description</b>	<b>Maximum Mark</b>	<b>Mark Obtained</b>
1	Exercise	5	
2	Viva	5	
<b>Total</b>		<b>10</b>	

**Staff Signature with date**

## Aim

To develop the testing framework and/or user interface framework for the Hostel Management System.

## Team Members:

S No	Register No	Name	Role
1	RA2011003010207	Saurabh Pandey	Rep/Member
2	RA2011003010147	Naimish Pandey	Member
3	RA2011003010194	Samarth Pandey	Member

It is a fact that the exact number of defects in a software product is difficult to find. Then, he/she should have a test plan such that the product defects are further reduced by finding defects and fixing them.

So the testing phase must be well planned with required budget, schedule and testing processes that will ensure that a certain number of critical defects are caught and fixed.

Even if there was an attempt to remove defects so late in the life cycle, it would be exorbitantly costly to do so in one go and it would also mean devoting a considerable amount of time in detecting and fixing all those defects.

## Result:

Thus, the testing framework/user interface framework has been created for One Mile At A Time.

## Executive Summary

**Objective:** The scope of the project is to make an application which is tested thoroughly, all the bugs are fixed and software is tested before the application is ready to be used. Even though testing a software is a tedious job and can be expensive, it is essential to go through the testing phase as it may cost even more if problems are found in the software after deployment.

## **Approach:**

Traditionally, software testing was done only after software was constructed. This is used to limit the scope of software testing in the development life cycle (see Figure below-Traditional Software Development Model-Too little, Too late testing). This practice led to a situation that was too little and too late. By the time software was constructed, already faulty requirement specifications and faulty software design had resulted in defect ridden software.

## **Scope of Testing**

**Functional Testing:** In simple terms, the testing is to compare the actual result with the expected result. Testing is done to identify whether all the functions are working as expected.

**Non functional testing:** Non-functional testing is a type of software testing to test non-functional parameters such as reliability, load test, performance and accountability of the software. The primary purpose of non-functional testing is to test the reading speed of the software system as per non-functional parameters. The parameters of non-functional testing are never tested before the functional testing.

## **Types of Testing, Methodology, Tools**

### **Functional Requirements**

Category	Methodology	Tools Required
Login	Manual	Documentation
Price	Manual	Documentation
Book Rooms	Manual	Documentation
Payment Portal	Automated	Lambdatest.com

Functional Dictionary	Manual	Documentation
Chatbot	Automated	Lambdatest.com
Review	Manual	Documentation

### Non-Functional Requirements

Category	Methodology	Tools Required
Complaint	Manual	Documentation
Security	Manual	Documentation
Availability	Manual	Documentation
Reliability	Automated	Lambdatest.com

Result:

Thus, the testing framework/user interface framework has been created for the Hostel Management System.



## School of Computing

**SRM IST, Kattankulathur – 603 203**

**Course Code: 18CSC206J**

**Course Name: Software Engineering and Project Management**

<b>Experiment No</b>	12
<b>Title of Experiment</b>	Manual Test Case Reporting
<b>Team Leader</b>	Saurabh Pandey
<b>Team Members</b>	Saurabh Pandey      Naimish Pandey      Samarth Pandey
<b>Register Number</b>	RA2011003010207    RA2011002010147    RA2011003010194
<b>Date of Experiment</b>	16th June 2022

### Mark Split Up

<b>S. No</b>	<b>Description</b>	<b>Maximum Mark</b>	<b>Mark Obtained</b>
1	Exercise	5	
2	Viva	5	
<b>Total</b>		<b>10</b>	

**Staff Signature with date**

## Aim

To prepare the manual test case report for the Hostel Management System.

### Team Members:

S No	Register No	Name	Role
1	RA2011003010207	Saurabh Pandey	Rep/Member
2	RA2011003010147	Naimish Pandey	Member
3	RA2011003010194	Samarth Pandey	Member

Category	Progress Against Plan	Status
Functional Testing	Green / Amber / Red	Not-Started / In-Progress / Completed
Login [ID #1]	Green	Completed
Select Type Of Room [ID #2]	Green	Completed
Payment Portal [ID #3]	Green	Completed
Room Booking [ID #4]	Amber	In-Progress
Review	Red	Not-Started

Non-Functional Testing	Green/ Amber/ Red	Not-Started / In-Progress / Completed
Capacity [ID #1]	Green	Completed
Rating [ID #2]	Red	In-Progress
Security [ID #3]	Green	In-Progress
Availability [ID #4]	Amber	In-Progress
Reliability [ID #5]	Green	Completed

Functional	Test Case Coverage (%)	Status
Login [ID #1]	100%	Completed
Price [ID #2]	100%	Completed
Payment Portal [ID #3]	100%	Completed

Room Booking [ID #4]	75%	In-Progress
Functional Dictionary [ID #5]	100%	Completed

Non-Functional	Test Case Coverage (%)	Status
Rating [ID #1, ID #2]	60%	In-Progress
Security [ID #3]	90%	In-Progress
Availability [ID #4]	55%	In-Progress
Reliability [ID #5, ID #6]	95%	In-Progress

Result:

Thus, the test case report has been created for the Hostel Management System.



## School of Computing

**SRM IST, Kattankulathur – 603 203**

**Course Code: 18CSC206J**

**Course Name: Software Engineering and Project Management**

<b>Experiment No</b>	13
<b>Title of Experiment</b>	Provide the details of Architecture Design/Framework
<b>Team Leader</b>	Saurabh Pandey
<b>Team Members</b>	Saurabh Pandey      Naimish Pandey      Samarth Pandey
<b>Register Numbers</b>	RA2011003010207    RA2011003010147    RA2011003010194
<b>Date of Experiment</b>	16th June 2022

### Mark Split Up

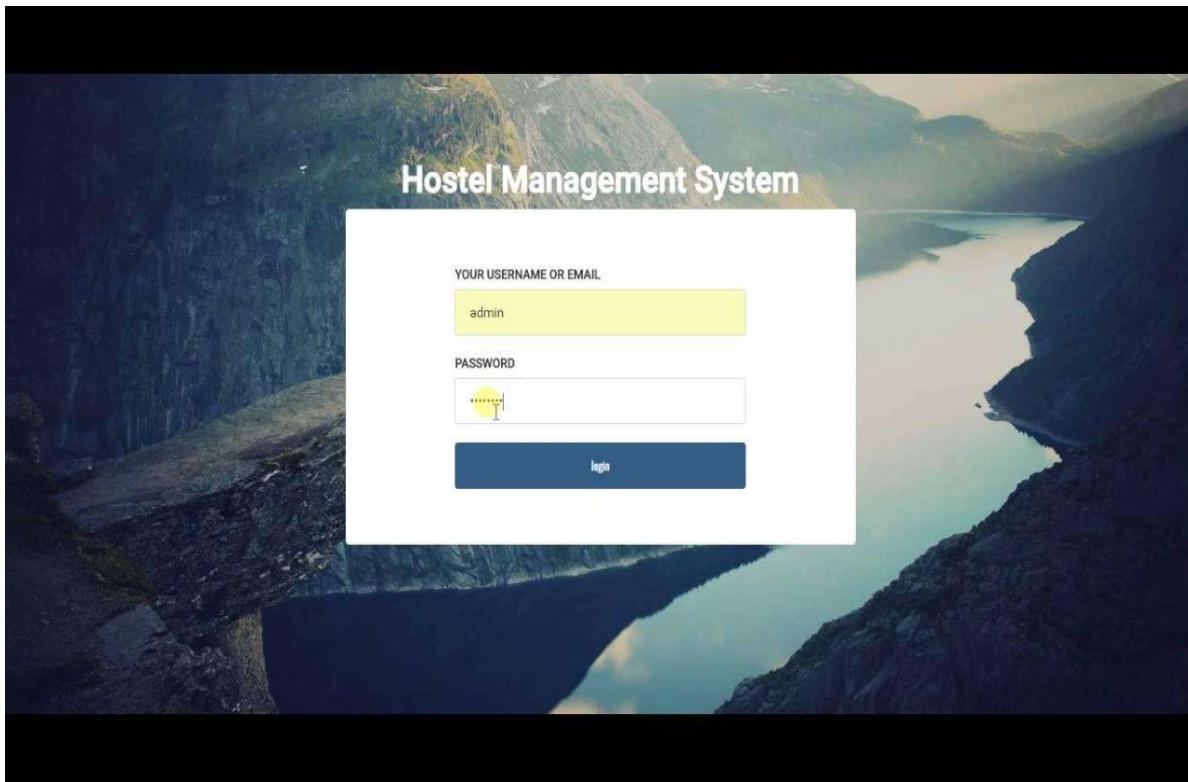
<b>S. No</b>	<b>Description</b>	<b>Maximum Mark</b>	<b>Mark Obtained</b>
1	Exercise	5	
2	Viva	5	
<b>Total</b>		<b>10</b>	

Staff Signature with Date

**Aim:** To provide the details of architectural design/framework.

**Team Members:**

S No	Register No	Name	Role
1	RA2011003010207	Saurabh Pandey	Rep/Member
2	RA2011003010147	Naimish Pandey	Member
3	RA2011003010196	Samarth Pandey	Member



**Result:** Thus, the details of architectural design/framework/implementation along with the screenshots were provided.