

Veer Narmad South Gujarat University, Surat.

**Department of Information and
Communication Technology**

Project Report

3rd Semester

M.Sc. (Information and Communication Technology)

2 Year course

Year 2020 – 2021

Project Title

“Hostel Management System”

Guided By :

Submitted By :

Ms. Lissa John

Yashpalsingh G. Rajpurohit

J.P. Dawar Institute Of Information Science & Technology,

Veer Narmad South Gujarat University, Udhna Magdalla Road, Surat, Gujarat

M.Sc. (Information and Communication Technology) Programme

Certificate

This is to certify that **Mr. Yashpalsingh Girdharisingh Rajpurohit** Exam Seat Number: **10040** has satisfactorily completed his/her project work entitled **Hostel Management System** as a partial fulfilment of the requirements for 3rd ***Semester - M.Sc. (Information and Communication Technology) [2 Year course]***, during the academic Year 2020-2021.

Date:

Place: Surat

Course Co-ordinator
M.Sc. (I.T.) Programme.
Department of I.C.T.
Veer Narmad South
Gujarat University,
Surat

Acknowledgement

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I would like to express my deep and sincere gratitude and like to thank **Ms. Lissa John** for providing valuable advise, guiding us throughout the Project.

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Thanking All

Yashpalsingh G. Rajpurohit

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1. Introduction

1.1 Project Profile

Project Profile

Project title : Hostel Management System

Name of Institute : J.P. Dawer Institute OF Science And Technology ,
Veer Narmad South Gujarat University, Surat.

Front End Tool : Html, JavaScript, CSS, Bootstrap, EJS, JQuery

Back End : Nodejs, Express, Mysql, XAMPP

Operating System : Windows

Project Guide : Ms. Lissa John

Submitted by : Yashpalsingh G. Rajpurohit



2. Proposed System

2.1 Project Propose

2.2 Project Scope

2.3 Project Objective

2.4 Advantage

2.5 Limitations

❖ **Project Propose:**

In this world of growing technologies everything has been computerized. This growing technologies can be used in places like hostel to manage and allocate rooms to students that overcomes the tedious process of doing manually.

The aim is to create “HOSTEL MANAGEMENT SYSTEM”, which should automate the process of providing hostel room to students easily and in less time with more efficiency .The System is supposed to allow Hostel Admins to properly manage Student and see their details Hence making their lives easy

❖ **Project Scope:**

➤ **Admin Side :-**

- Login/Logout
- Admin can add or remove State
- Admin can add or remove City
- Admin can add course
- Admin can add manage Block
- Admin can add and manage Room
- Admin can allocate Rooms

➤ **User Side :-**

- Register.
- Login/Logout
- Request For Rooms
- Pay Fees

❖ **Project objectives :**

- This system will allow Student to book Hostel Rooms through internet.
- The Student can check for room allocation status through their phone or computer.
- Easy to access the system anywhere and anytime.
- Data storing is easier.

❖ **Advantages:**

- Reduction of paper work.
- Major operations that are done manually can be done within matter of seconds.
- Overcomes the limitation to wait for long duration .
- More efficient and reliable
- Easy to access the system anywhere and anytime.
- Avoid data manipulation and redundancy

❖ **Limitations:**

- Does not Generate Icard Online.
- Some other processes still need offline communication.



3. Environment Description

3.1 Hardware & Software Requirements

3.2 Technology Used

Hardware & Software Requirements

❖ Hardware Specification :

Processor	: Intel(R) Core(TM) i5-7200U CPU @ 2.50GHz 2.70
RAM	: 4.00GB (3.79 GB usable)
Hard Disk	: Basic 931.51 GB Online
Monitor	: 15.6" HD True Life Display
Keyboard	: Spill-Resistant Keyboard
Mouse	: Optical, Laser, Scroll (any one can use, Wireless)
System Type	: 64-bit Operating System, x64-based processor

❖ **Software Specification:**

➤ **Software Requirements (for Development):**

- Visual Studio Code.
- XAMPP

➤ **Operation System (for development):**

- Windows

➤ **Server Configuration:**

- MYSQL

➤ **For Client Side:**

- Mozilla Firefox / Google Chrome / Any HTML5 And CSS3 Browser

❖ **Technology :**

- Express
- JQuery
- MYSQL
- Ejs
- Node
- Java Script
- Bootstrap



4. System Planning

4.1 Feasibility Study

4.2 Software Engineering Model

4.3 Risk Analysis

4.4 Project Schedule

❖ Feasibility study:

a) **Technical Feasibility:-**

Technical feasibility of any system is the availability of both the hardware and the software for the proposed system. This system is technically feasible because according to the requirement MySQL-Server and NodeJs works fairly good for operating system for windows family.

b) **Financial Feasibility:-**

The financial feasibility for any implies good investment for the organization. There is no overhead cost for software or hardware. The installation of the system is easy and will require less effort to install on the system even with old processors machine.

c) **Economical Feasibility:-**

Finance matter can restrict to the level of development. However our management is assuring that any needs will be fulfilled immediately. The management has provided the required resources. From the financial point of view the project is feasible. We guess there will not be any bigger monetary requirement for our project.

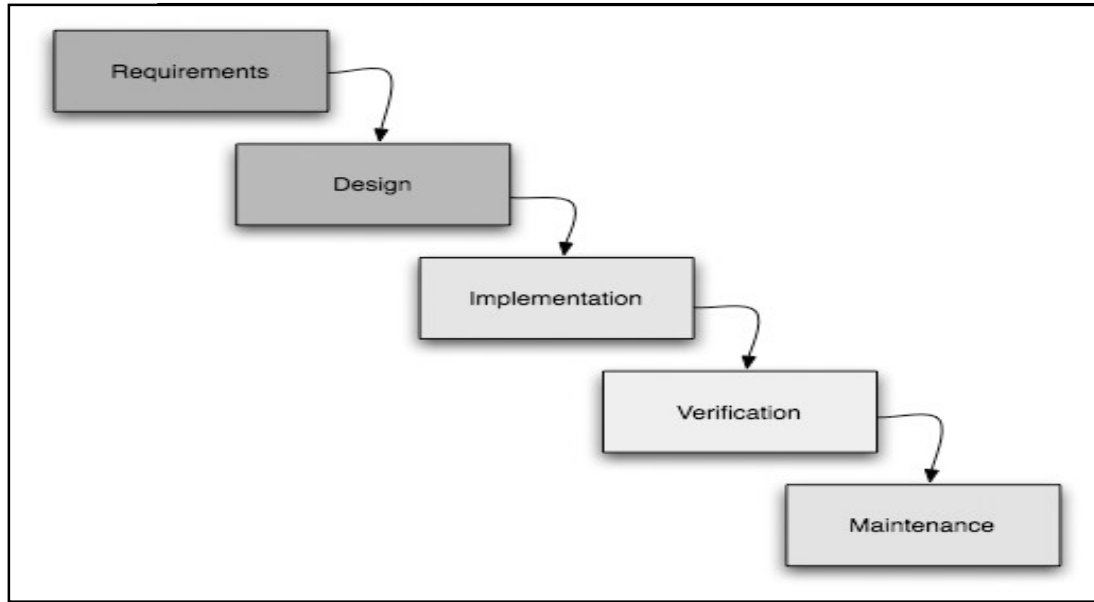
d) **Operational Feasibility:-**

The primary question that arises is, will the proposed system impact the working of other existing system. The function of the system is also dependent on the other modules of the package. The operational can discussed as.

❖ Software Process Model:

Waterfall model:

A waterfall is a model is also known as Linear Sequential Model. The waterfall model suggests a systematic, sequential approach to software development that begin with the system level and progresses through analysis design, coding, testing and support. It is very easy to understand the waterfall model. The waterfall model works in sequence. In the waterfall model the team members are have dependent to each other.



Advantages of Waterfall Model:

- It is provide a template into which the methods for analysis, designing, coding, testing and support can be placed.
- The classical life cycle remains a widely used procedural model for software engineering.
- The waterfall model provides a clear objectives and stable project requirements which are essential for quality software development.
- In the waterfall model progress of system is measurable.

Disadvantages of Waterfall Model:

- The waterfall model requires all requirements explicitly, but it is often difficult for the customer to state all requirements explicitly.
- The customer must have patience. A working version of a program will not be available until late in the project time-span.
- It is a slow process.
- The waterfall model is time consuming. Backtracking is not possible in this approach.
- The linear nature of the classic lifecycle leads to “blocking states” in which some project team member must wait for other members of the team to complete the task s which given to them.

❖ Risk Analysis:

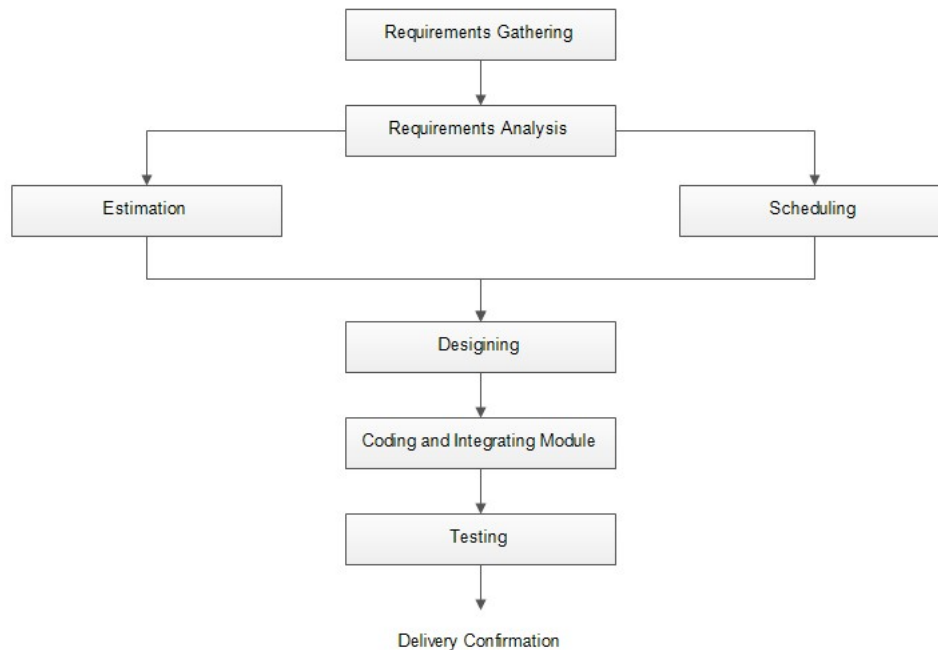
In Software Testing some unavoidable risk might take place like:

- Change in Requirements or incomplete requirements.
- Time allocation for testing.
- Developers delaying to deliver the built for testing.
- Urgency from client for delivery.

To overcome the risks, following activities can be done:

- Conducting Risk Assessment Review meeting with the development team.
- Identify and describe the risk magnitude indicators: High, Medium, Low.
- Creation of Risk Assessment Database for future maintenance.

❖ Task Dependency:



❖ Timeline Chart:

Timeline Chart											
Months		Nov		Dec				Jan			
Sr. no.	Project Scope	W3	W4	W1	W2	W3	W4	W1	W2	W3	W4
1	Requirement Gathering										
	Information Analysis										
	Determine Scope of System										
	Complete Requirement										
2	Planning & Risk Analysis										
	Analysis Data for possible Risk										
	Identifying Potential Risk										
	Determine Different Module										
	Complete Planning										
3	Design										
	Design Basic Interface										
	Design Database Tables										
	Design Modules										
	Complete Design										
4	Coding & Integrated Module										
	Implement Database Connection										
	Implement Module										
	Implement Data fetching										
	Complete coding & integration										
5	Testing										
	Validate input data & Control										
	Check System With Multiple User										
	Complete Testing										
6	Documentation										



5. Unified Modeling Language

5.1 Use Case Diagram

5.2 Sequence Diagram

5.3 Relationship Diagram

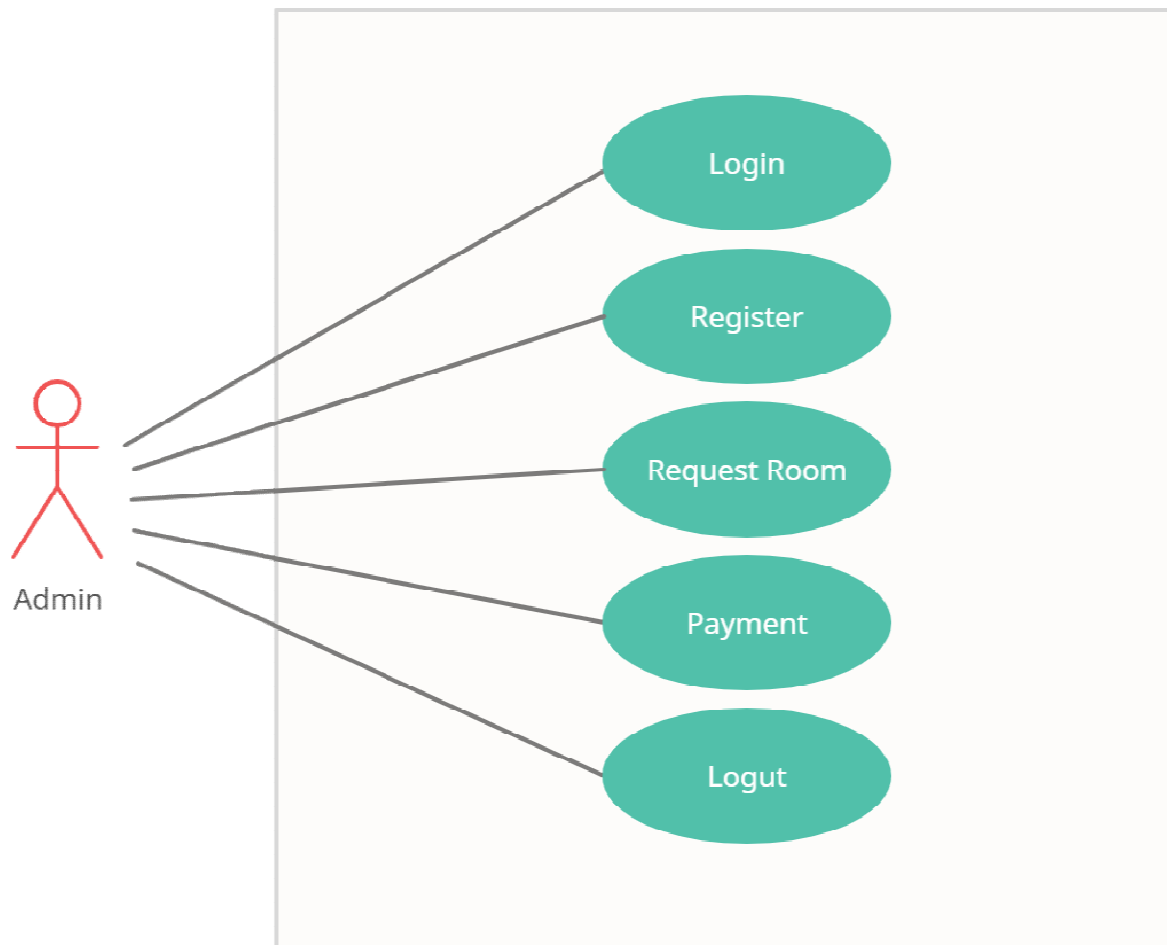
5.4 Activity Diagram

❖ Use Case Diagram:-

○ Admin Side:-

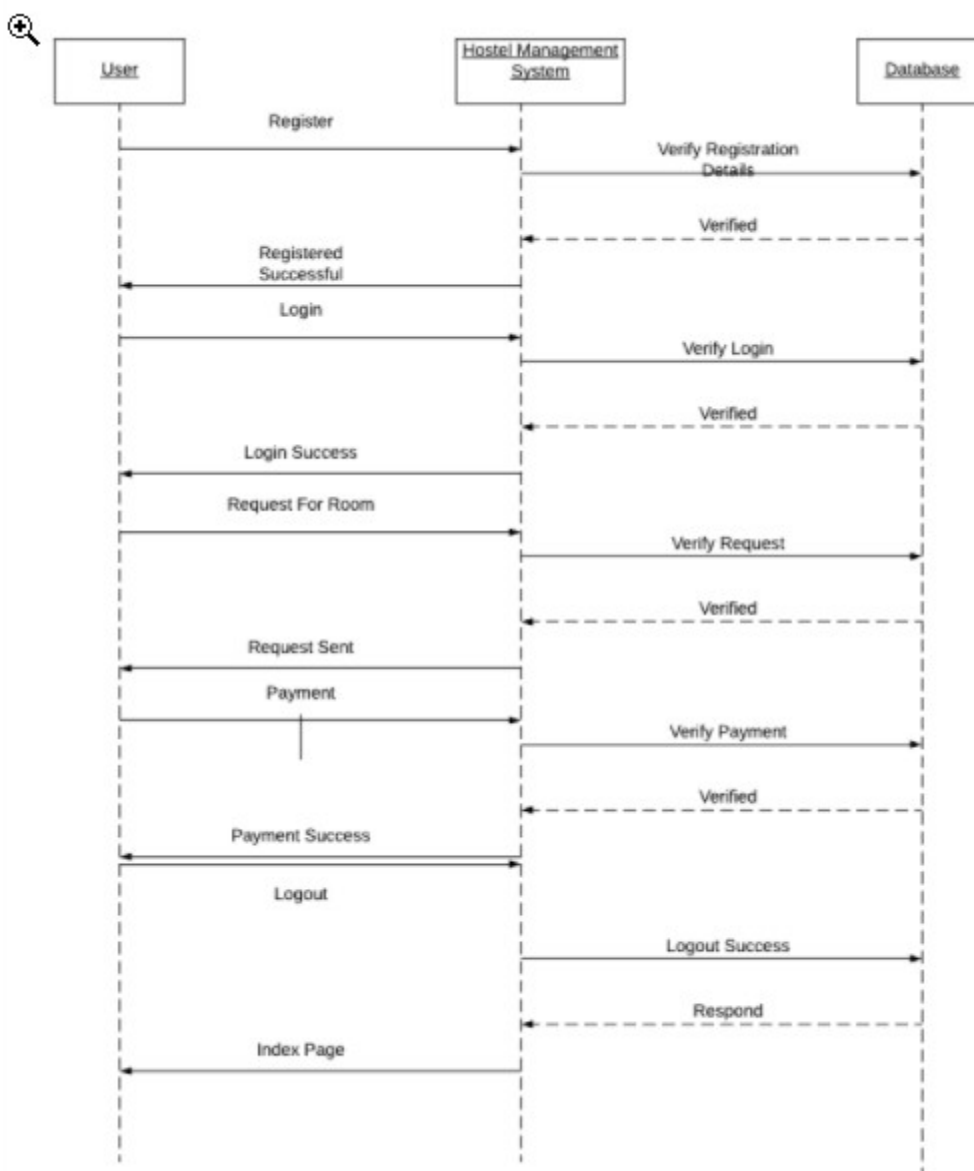


○ **User Side:-**

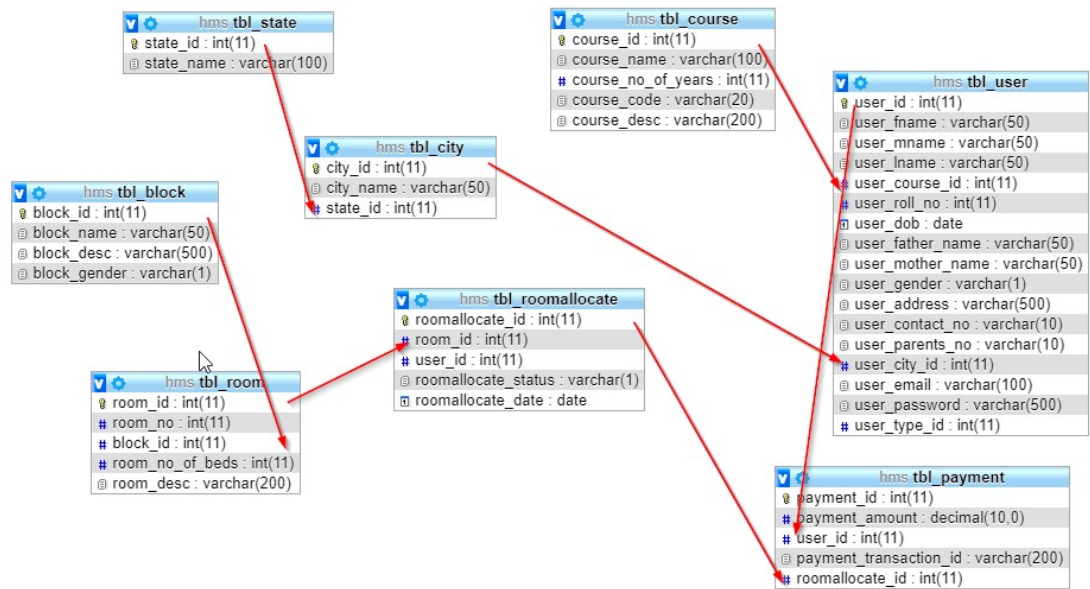


❖ Sequence Diagram:-

- User Side:

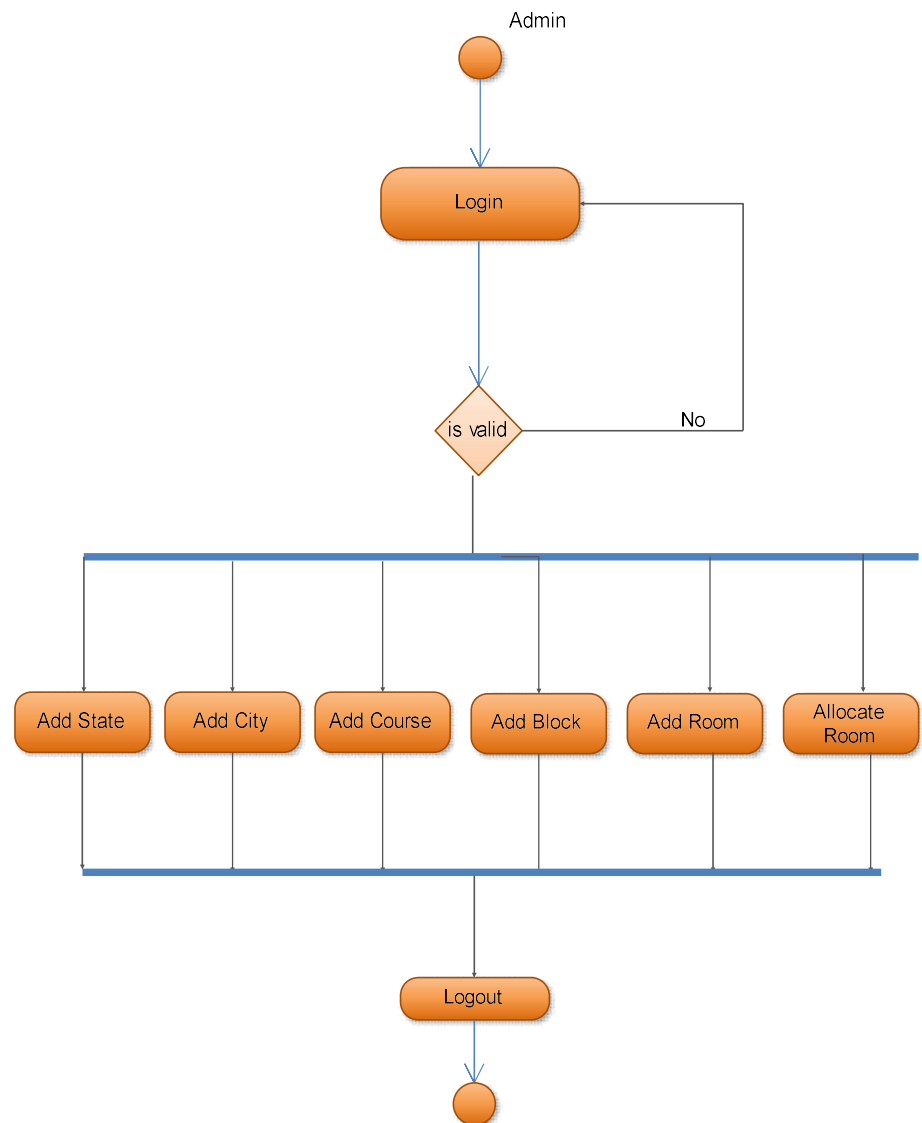


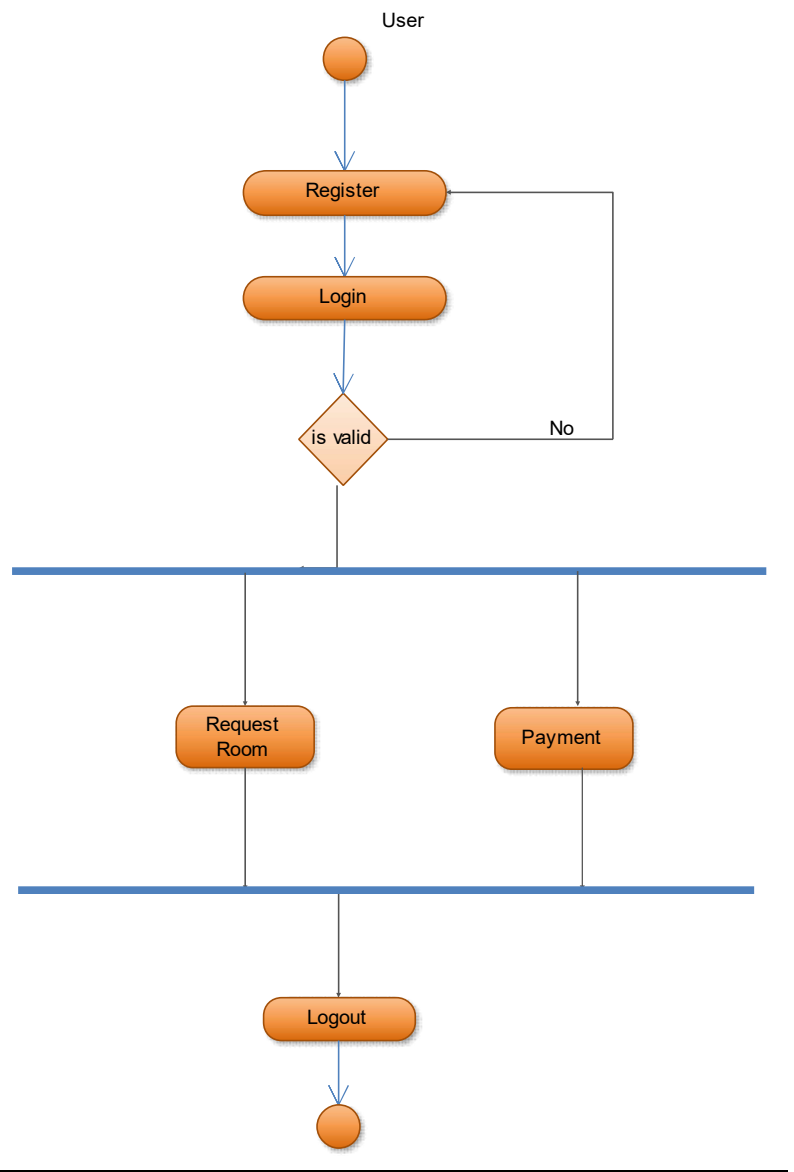
❖ Relationship Diagram:-



console

❖ **ActivityDiagram:**







6. Software Design

6.1 Database Design

6.2 Interface Snapshot

❖ **Database Diagram :**

1. Table Name : tbl_usertype

Sr.No.	Field Name	Datatype	Constraint
1	usertype_id	int(11)	Primary Key
2	usertype_name	varchar(50)	

2. Table Name : tbl_state

Sr.No.	Field Name	Datatype	Constraint
1	state_id	int(11)	Primary Key
2	state_name	varchar(100)	

3. Table Name : tbl_city

Sr.No.	Field Name	Datatype	Constraint
1	city_id	int(11)	Primary Key
2	city_name	varchar(50)	
3	state_id	int(11)	Reference From tbl_state

4. Table Name : tbl_course

Sr.No.	Field Name	Datatype	Constraint
1	course_id	int(11)	Primary Key
2	course_name	varchar(100)	
3	course_no_of_years	int(11)	
4	course_code	varchar(20)	
5	course_desc	varchar(200)	

5. Table Name : tbl_block

Sr.No.	Field Name	datatype	constraint
1	block_id	int(11)	Primary Key
2	block_name	varchar(50)	
3	block_desc	varchar(500)	
4	block_gender	varchar(1)	

6. Table Name: tbl_room

Sr.No.	Field Name	Datatype	constraint
1	room_id	int(11)	Primary Key
2	room__no	int(11)	
3	block_id	int(11)	Reference from tbl_block
4	room_no_of_beds	int(11)	
5	room_desc	varchar(200)	

7. Table Name: tbl_roomallocate

Sr.No.	Field Name	Datatype	constraint
1	roomallocate_id	int(11)	Primary Key
2	room_id	int(11)	Reference from tbl_room
3	user_id	int(11)	Reference from tbl_user
4	roomallocate_status	varchar(1)	
5	roomallocate_date	date	

8. Table Name: tbl_user

Sr.No.	Field Name	Datatype	constraint
1	user_id	int(11)	Primary Key
2	user_fname	varchar(50)	
3	user_mname	varchar(50)	
4	user_lname	varchar(50)	
5	user_course_id	int(11)	Reference from tbl_course
6	user_roll_no	int(11)	
7	user_dob	date()	
8	user_father_name	varchar(50)	
9	user_mother_name	varchar(50)	
10	user_gender	varchar(1)	
11	user_address	varchar(500)	
12	user_contact_no	varchar(10)	
13	user_parents_no	varchar(10)	
14	user_city_id	int(11)	Reference from tbl_city
15	user_email	varchar(100)	
16	user_password	varchar(500)	
17	user_type_id	int(11)	Reference from tbl_usertype

9. TableName: tbl_payment

Sr.No.	Field Name	Datatype	constraint
1	payment_id	int(11)	Primary Key
2	payment_amount	decimal(10,0)	
3	user_id	int(11)	Reference from tbl_user
4	payment_transaction_id	varchar(200)	
5	roomallocate_id	int(11)	Reference from tbl_roomallocate



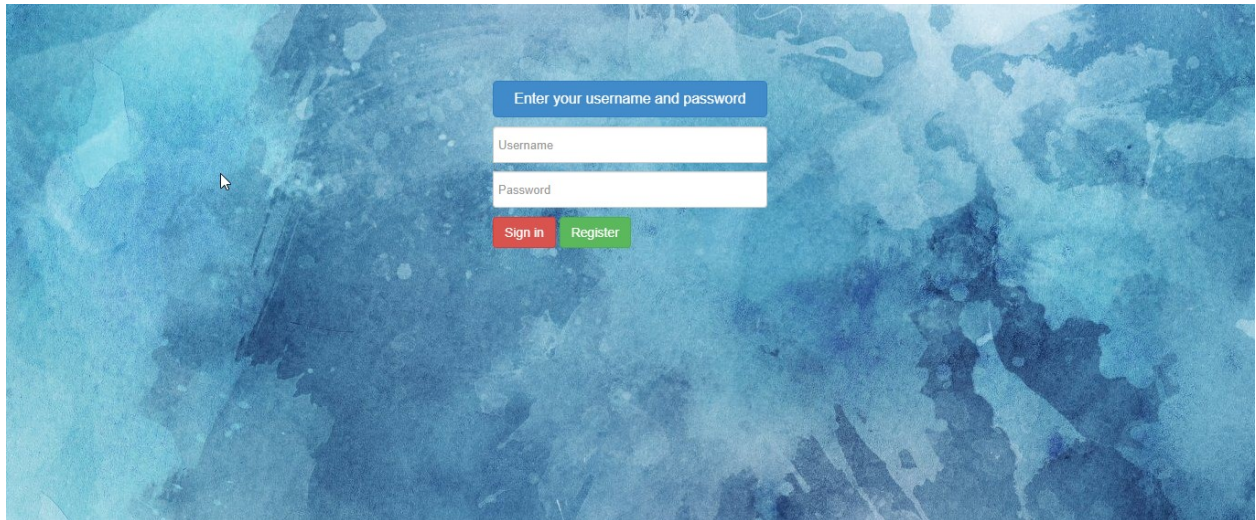
6. Interface Design

Output of Project:-

Admin Side with Validations,login,Registration and other different module.

Admin Side:

Login Page:



State Page:

View All States:

The screenshot shows a web application interface for managing states. On the left is a sidebar with a user profile icon and a list of menu items: 'ADD State' (highlighted), 'ADD City', 'ADD Course', 'ADD Block', 'ADD Room', and 'Room Requests'. The main content area has two tabs: 'Availabe States' (active) and 'Add State'. Below the tabs is a 'State Detail' section containing a dropdown menu set to '10', a 'Search:' input field, and a 'records per page' label. A table displays three states: Gujarat, Punjab, and Tamil Nadu. Each row has an 'EDIT' button (green) and a 'DELETE' button (red). Below the table, it says 'Showing 1 to 3 of 3 entries' and includes 'Previous', '1', and 'Next' pagination links.

State Name	EDIT	DELETE
Gujarat		
Punjab		
Tamil Nadu		

Add State:

The screenshot shows the 'Add State' form in the web application. The sidebar is identical to the previous page. The main content area has two tabs: 'Availabe States' and 'Add State' (active). The form contains a 'State Name' label and a text input field with 'Tamil Nadu' entered. Below the input field is a red 'Add' button.

City Page:

View All Cities:

The screenshot shows a web application interface for managing cities. On the left is a sidebar with navigation links: 'ADD State', 'ADD City' (highlighted), 'ADD Course', 'ADD Block', 'ADD Room', and 'Room Requests'. The main content area has two tabs: 'Availabe Cities' and 'Add City'. The 'Availabe Cities' tab is active, displaying a 'Course Detail' section with a dropdown menu set to '10' and a 'Search:' input field. Below this is a table with three columns: 'City Name', 'State Name', and 'DELETE'. The table contains three rows of data: Surat, Vadodara, and Valsad, all associated with the state of Gujarat. Each row has a red circular delete button. At the bottom of the table, it says 'Showing 1 to 3 of 3 entries' and includes 'Previous', '1', and 'Next' pagination links.

City Name	State Name	DELETE
Surat	Gujarat	
Vadodara	Gujarat	
Valsad	Gujarat	

Add City :

The screenshot shows the 'Add City' form in the same web application. The sidebar is identical to the previous screenshot. The main content area has two tabs: 'Availabe Cities' and 'Add City'. The 'Add City' tab is active, showing a form with two input fields: 'City Name' (containing 'Chennai') and 'select State' (a dropdown menu with 'Tamil Nadu' selected). Below the form is a red 'Add' button. The browser's address bar at the bottom left shows 'localhost:3100/block'.

Course Page:

View All Courses:

The screenshot shows a web application interface for viewing all courses. On the left is a sidebar with navigation links: 'ADD City', 'ADD Course' (highlighted), 'ADD Block', 'ADD Room', and 'Room Requests'. The main content area has two tabs: 'Available Courses' and 'Add Course'. Below the tabs is a 'Course Detail' section with a dropdown menu set to '10' and a 'Search:' input field. Below this is a table with the following data:

Course Name	Course Code	Course Description	Course Number of Years	EDIT	DELETE
master of Information Communication Technology	MscICT	this is 2 year post graduation course to impart student with knowledge of programming	2		
Master of Science (Information Technology)	MSCIT	This is 5 year Integrated Course for IT carier	5		
Msc Botany	MSCBO	2 year of msc botany course	2		
Phd Chemistry	PHDCHM	a doctrate phd degree for qualified students	5		

Add Courses:

The screenshot shows the 'Add Course' form in the web application. The sidebar is the same as in the previous screenshot. The main content area has the 'Add Course' tab selected. The form contains the following fields:

- Course Name:** Bachleors of Biology
- Course Number of Years:** 3
- Course Code:** BSCBIO
- Course Description:** 3 Years Bachleors Course for Biology Students

At the bottom left of the form is a red 'Add' button.

Block Page:

View All Blocks:

ADD State

ADD City

ADD Course

ADD Block

ADD Room

Room Requests

Available Blocks

Add Block

Block Detail

10

Search:

records per page

Block Name	Block Description	Block Gender	EDIT	DELETE
gimar	Gimar is located near hostel mess	M		
new girls hostel	This hostel is for girls located near University Department of Fine Arts	F		
new hostel	this is new hostel for everyone	M		

Showing 1 to 3 of 3 entries

Previous

1

Next

Add Blocks:

ADD State

ADD City

ADD Course

ADD Block

ADD Room

Room Requests

Available Blocks

Add Block

Block Name

Satpuda

Select Gender Of Students in block

☒ MALE ☐ FEMALE

Block Description

satpuda is near convention hall with separate room for each stud

Add

Room Page:

View All Rooms:

Available Rooms Add Room

Rooms Detail

10 Search:

records per page

Room No	Block No	Number of beds	Room Desc	DELETE
1	girnar	1	This is one bed room located in girnar	
10	girnar	1	This is for 2 students Every Student will have seperate Bed ,Table And a Chair	
12	new hostel	2	This is the side room of first floor	

Showing 1 to 3 of 3 entries

Previous 1 Next

Add Page:

Available Rooms Add Room

Room Number 34

select Block girnar

No of Beds 1

Room Description Side Corner Room of Girnar

Add

Room Request Page:

The screenshot shows a web application interface for room requests. On the left is a sidebar with navigation links: 'ADD State', 'ADD City', 'ADD Course', 'ADD Block', 'ADD Room', and 'Room Requests' (which is highlighted). The main content area is titled 'Requested Rooms' and contains a table with the following data:

Room No	Block Name	User Email	Date of Request	Accept Request	Delete Request
10	gimar	yashpalsingh1708@gmail.com	Fri Feb 05 2021 00:00:00 GMT+0530 (India Standard Time)	Allocate this room	✖

User Side:


Login:

The screenshot shows a login page with a blue watercolor background. It features a central form with the following elements:

- A blue button labeled 'Enter your username and password'.
- A white input field labeled 'Username'.
- A white input field labeled 'Password'.
- Two buttons at the bottom: a red 'Sign in' button and a green 'Register' button.

Registration:

Add Student

Student First Name	<input type="text"/>
Student Middle Name	<input type="text"/>
Student Last Name	<input type="text"/>
Student E-mail	<input type="text"/>
Student Roll no	<input type="text"/>
Student DOB	<input type="text" value="dd-mm-yyyy"/> 
Student's Father Name	<input type="text"/>
Student's Mother Name	<input type="text"/>
Student's Address	<input type="text"/>

Student's Gender ☒ MALE ☐ FEMALE

Password	<input type="password"/>
Confirm Password	<input type="password"/>
Student Course	<input type="text" value="master of Information Com"/> ▼
Student's City	<input type="text" value="Valsad"/> ▼
Student's Phone Number	<input type="text"/>
Parent's Phone Number	<input type="text"/>

Available Rooms Page:

Available Room

Rooms Detail

10

Search:

records per page

Room No	Block No	Number of beds	Room Desc	Request
1	gimar	1	This is one bed room located in gimar	Request this room

Showing 1 to 1 of 1 entries

[Previous](#) [1](#) [Next](#)



7. Testing Principles and Methods

❖ Testing Principles And Methods :

Test Cases:

➤ Login Page Testing:

Sr. No.	Input Field	Input Value	Valid/Invalid	For Value	Valid For Value	Invalid For Value
1.	Email ID	Email ID	Valid	No Error		
		Other Text	Invalid	Error		Error message will be shown.
		NULL	Invalid	Error		Error message will be shown.
2.	Password	Text	Valid	No Error		
		Number	Valid	No Error		
		Symbol	Invalid			Error message will be shown.
		NULL	Invalid	Error		Error message will be shown.

➤ Registration Page Testing:

Sr. No.	Input Field	Input Value	Valid/Invalid	For Valid Value	For Invalid Value
1.	Email	Text	Valid	No Error	
		Numbers/Symbols	Invalid	Error	Error message will be shown.
		NULL	Invalid	Error	Error message will be shown.
2.	UserName	Text	Valid	No Error	
		Numbers/Symbols	Valid	Error	Error message will be shown.
		Symbol	Invalid	Error	Error message will be shown.
3.	password	Text, Numbers	Valid	No Error	
		Number/ Symbols	Invalid	Error	Error message will be shown.
4.	firstname	Text	Valid	No Error	
		Number/ Symbols	Invalid	Error	Error message will be shown.
		Null	Invalid	Error	Error message will be shown.
5.	lastname	Text	Valid	No Error	
		Number/ Symbols	Invalid	Error	Error message will be shown.
		Null	Invalid	Error	Error message will be shown.
6.	Age	Proper Format	Valid	No Error	
		Improper Format	Invalid	Error	Error message will be shown.
		Null	Invalid	Error	Error message will be shown.



8. Future Enhancement

❖ Future Enhancement:

- Third Party Payment
- ICard Generation .
- Mess Facility Inclusion



9. Reference

❖ **Reference:**

- <https://github.com/>
- <https://nodejs.org/en/>
- <https://youtube.com/>
- <https://stackoverflow.com/>