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S20	System Analysis and Design Methods (ADipIT05)	A1	Group Report

[User Management System]

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Abstract:

This project is all about learning the java web application using JDBC and Servlet. In this project MySQL database is used as the data storing tool. This project is completed after gathering and analyzing requirements and User Story. And Different System designing methods are been implemented. For the development and testing of this project NetBeans IDE, MySQL and Chrome Browser were used. In short, User Management System is a web application user can create account and manage their account. There are mainly three types of users, they are Admin, Client, and Guest. Admin are the managers of the web application and have full access the system and can make changes in the system as they can create, delete, edit, block, and unblock client account. But as the clients, they are can create their user and can manage their account. However, the guests can view the description of all the features in the application. And newly signup guest is always a client. This web application is truly essential to store user information in systematic, updated, and accurate manner.

Table of Contents:

Contents

1. Chapter 1: Introduction:.....	1
1.1 General Introduction.....	1
1.2 Problem Domain:	2
1.3 Academic Question:	2
1.4 Aims of the project:	2
1.5 Objective of the project:	2
1.6 Project Scope:	3
1.7 Structure of the report:	4
2. Chapter 2: Full details of Artefact	5
2.1 Tools Used:.....	5
2.1.1 Hardware Requirements:	5
2.1.2 Software Requirements:.....	5
2.1.3 Generalized list of requirements:.....	6
2.1.4 Technical Skills:	6
2.2 Techniques Used:.....	6
3. Chapter 3: Implementation:	7
3.1 Table Structure (ERD)	7
3.2 Class Diagram:	8
3.3 Use case diagram:.....	9
3.5. User Stories and Requirement gathering:.....	11
3.6 Data Dictionary:.....	22
3.7 Context diagram	25
3.7 Wireframes:.....	26
Register:.....	26
Admin Home page:	27
Admin Dashboard:	28
Login page:	29
User Home page:	30
3.8 Mockup: Dashboard Mock up:.....	31

Admin Home Mock up:	32
User Home Mock up:	33
Login Mock up:	34
Register Mock up:	35
Admin setting Mock up:	36
History Mock up:	37
Recover account Mock up:	38
Change Password Mock up:	39
Guest home page Mock up:	40
4. Chapter 4: Development	41
4.1 Comparison between two methodologies:	41
4.2 Similarity between Waterfall and Prototyping model:	44
5.3 Selected Methodology:	45
4.3 Plan/Schedule:	47
4.4 Gantt Chart:	48
5. Chapter 5: User Manual	49
5.1 Logging in as admin:	49
5.2 Logging in as Client:	56
5.3 Viewing homepage as a guest:	65
6. Chapter 6: Testing and Evaluation	66
6.1 Testing of the application:	66
6.1.1 White box Testing:	66
6.1.2 Black box Testing:	68
7. Chapter 7: Conclusion and Future Scope	77
7.1 Conclusion:	77
7.2 Future Scope:	77
Contribution sheet:	78

Table of Figures:

Figure 1 Table Structure (ERD).....	7
Figure 2 Class Diagram.....	8
Figure 3 Use case Diagram.....	9
Figure 4 Sequence Diagram	10
Figure 5 Context Diagram - DFD.....	25
Figure 6 Register -Wireframe	26
Figure 7 Admin Home Page -Wireframe	27
Figure 8 Admin Dashboard -Wireframe.....	28
Figure 9 Login page- Wireframe.....	29
Figure 10 User home page -Wireframe	30
Figure 11 Dashboard mock up	31
Figure 12 Admin home mock up	32
Figure 13 User home mock up	33
Figure 14 Login mock up.....	34
Figure 15 Register mock up	35
Figure 16 Admin setting	36
Figure 17 History mock up	37
Figure 18 Recover account mock up.....	38
Figure 19 change password mock up.....	39
Figure 20 Home page mock up	40
Figure 21 Waterfall model	41
Figure 22 Iterative Development methodology.....	43
Figure 23 Similarity between waterfall and prototyping model	44
Figure 24 Stages of Agile Methodology.....	45
Figure 25 Gantt Chart.....	48
Figure 26 Dashboard for Admin	50
Figure 27 user table for admin	51
Figure 28 Add new user by Admin	51
Figure 29 Update user details by Admin	52
Figure 30 User list for Admin.....	53
Figure 31 Profile for Admin.....	53
Figure 32 Profile Details for Admin.....	54
Figure 33 Edit Profile For admin.....	54
Figure 34 Logout for admin	55
Figure 35 Index Page	56
Figure 36 Sign Up	57
Figure 37 Sending Mail to User.....	57
Figure 38 Verification of user	58
Figure 39 Login Page	58
Figure 40 User's Dashboard.....	59
Figure 41 Profile Details	60
Figure 42 Update User Details	60

Figure 43 History	61
Figure 44 Log out	62
Figure 45 Login Page	62
Figure 46 Forgot Password	63
Figure 47 Change your password	63
Figure 48 Password Changed.....	64
Figure 49 Index Page	65
Figure 50Testing For Login	66
Figure 51Testing For Register.....	66
Figure 52Testing For Forgot Password.....	67
Figure 53Testing For User	67
Figure 54Testing For History.....	68

1. Chapter 1: Introduction:



Mysterious provides the simplest and easiest to use User interface tools to help administrators manage user identities including password resets, creating and provisioning, blocking and deleting users. The users also are managed by the administrator to permit certain roles or update user information. The User Management System provides functionality to manage users and private profiles. User management systems implement user management and authentication, personal profiles management, and classification. Relies on Java as an object-oriented language and MySQL as a database server. Add or remove users, modify profile and authorization attributes, and identify root-cause user login issues in minutes with a simple, intuitive and powerful web interface.

1.1 General Introduction

User Management System is a web application which have the functionality to create user account and manage account. Mysterious is a straightforward user management system that gives functionality to manage personal profiles and users. Personal profiles contain information like email, first name, last name, password encrypted in hash and logged in information User information contains a user number, username, password, and session for authentication. User information is employed for high-level authentication and privileges definitions. One or more personal profiles are assigned to a user. Users can create and login to the system and they are able to reset password and even can logout from the system. Users are also having the ability to edit their profile. In this System Admin can manage the system. Admin can directly login to the system without registration. The system administrators can fully access the system and

can make changes in the system. Admin can add, edit users, and remove the users and check the list of user profiles in the system.

1.2 Problem Domain:

Before there was no User management system, so storing information was inaccurate and difficult. So, this user management system is very essential for managing the users. Here user can register into system and manage their account. In this system there is a functionality of tracking user actions such as register, login, logout, update, etc. which helps to store user information in systematic, updated, and accurate manner. In this web application administrators have full access the system and can make changes in the system which makes much easier to maintain and manage user of the system.

1.3 Academic Question:

While doing this coursework, we became familiar with the Java programming language. We learn how java works and get knowledge on how to make proper web applications, working with a group makes us a responsible member. We also learn to deal with problems and errors while doing projects. We were also able to learn new session handling, create read update and delete (CRUD) operations, an overview of various dashboards and history pages.

1.4 Aims of the project:

- To overview the dashboard and history in the project.
- To learn CRUD operations.
- To learn the java programming language for web application development.
- To gain knowledge of Junit testing in java.
- To gain knowledge for saving the data to the database.

1.5 Objective of the project:

- To manage users by admin and to make the management system systematic.
- To manage users and private profiles.
- To manage the user database.
- To record the history log of the user.
- To save all the data to MySQL database.
- To give user sign up functionality so that they can create their user.

- To give access to modification of personal data.

1.6 Project Scope:

The scope of the project is the features that is include in our project and some of the scope of our project are:

User part:

User Signup	User can register in the system by simply going to registration page
Login	After creating the account user can login to the system by providing valid email and password
Logout	User can exit the session by clicking on the logout button
Forget password	If user forget their password then they have option to reset the password.
History	User can see their history by going to history section
Profile page	User can see their profile and manage their profile according to their wants.

Admin part:

Admin Login	Admin can login to the system without creating the account. Admin can directly login with username and password

Delete user	Admin have the feature to delete the user from the system.
Add user	Admin can manually add a new user
History page	Admin can see the user history page and individual log
User block list	Admin can block the user in the system and can view the user blocked in the system in block list

Guest part:

1. Guest can view the functionality of web application.
2. Guest can register into system as client.

1.7 Structure of the report:

This document follows following Conventions:

- Main Headings:

Font: Arial

Face: Bold

Text Size: 14

- Subheadings:

Font: Arial

Face: Bold

Text Size: 12

- Other Text Explanations

Font: Arial

Face: Normal/Bold

Text Size: 12

Line spacing: 1.5

2. Chapter 2: Full details of Artefact

2.1 Tools Used:

- Java Programming language
- JDK version 11.2
- NetBeans IDE
- Tomcat server
- Html CSS, bootstrap and JavaScript for frontend design
- Chrome browser for preview.
- MySQL as database
- Junit testing
- Manual testing
- Star UML for different diagram like ERD, Use case, Class diagram.

2.1.1 Hardware Requirements:

- Processor: Intel i3, or advanced than i3.
- Memory (RAM): Minimum 256 MB or more.
- Hard Drive: Minimum 2 GB or more.
- Graphic: Intel, AMD Radeon, NVidia

2.1.2 Software Requirements:

- Operating system as platform independent
- Browser: Chrome, Firefox, Microsoft edge etc.
- NetBeans IDE.

- Tom cat server.
- JDK version 8 minimum.
- MySQL database.

2.1.3 Generalized list of requirements:

- Processor: Intel i3 1Gz or more than that.
- RAM: Minimum 256 MB or more.
- Storage: Minimum 2 GB or more.
- Graphic: Intel iris, AMD Radeon, NVidia or any other.
- MySQL database.
- Tom cat as server.
- OS: Platform Independent.
- Any internet browser like chrome, Brave Firefox etc.

2.1.4 Technical Skills:

The technical skills are:

- Html, CSS, bootstrap and java script for UI design.
- Browsing and running skill in browser to run project.
- Manual testing skill.
- Junit testing.
- Knowledge of java programming language.
- Familiar with NetBeans IDE.
- Tomcat or glassfish Server connection.
- MySQL database skill and connection.

2.2 Techniques Used:

The techniques used to build our project are:

- User story writing.
- Word for documentation.
- Junit testing.

- Black box testing.
- Java programming language.
- Web project creation and implementation.
- Database connection in MySQL.
- Familiar with NetBeans IDE.
- Using server and connecting server.
- Gantt chart.
- Work break down structure.
- Class diagram.
- Use case diagram.

3. Chapter 3: Implementation:

3.1 Table Structure (ERD)

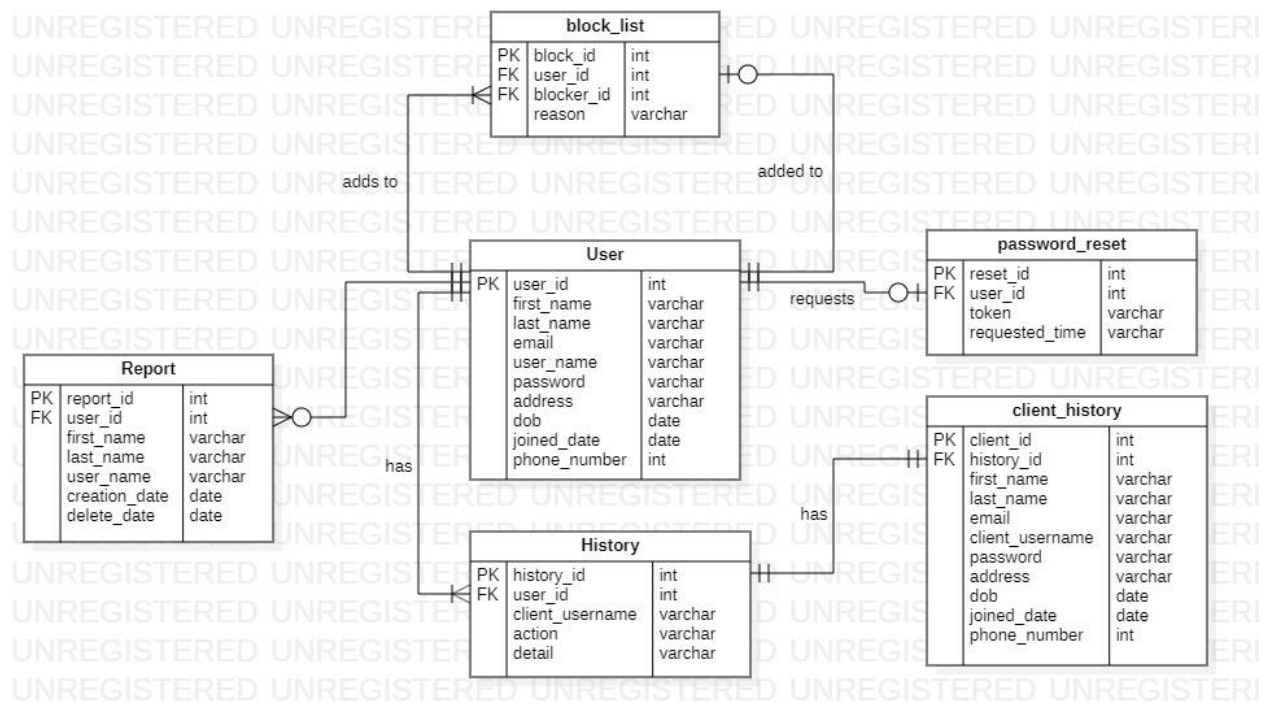


Figure 1 Table Structure (ERD)

3.2 Class Diagram:

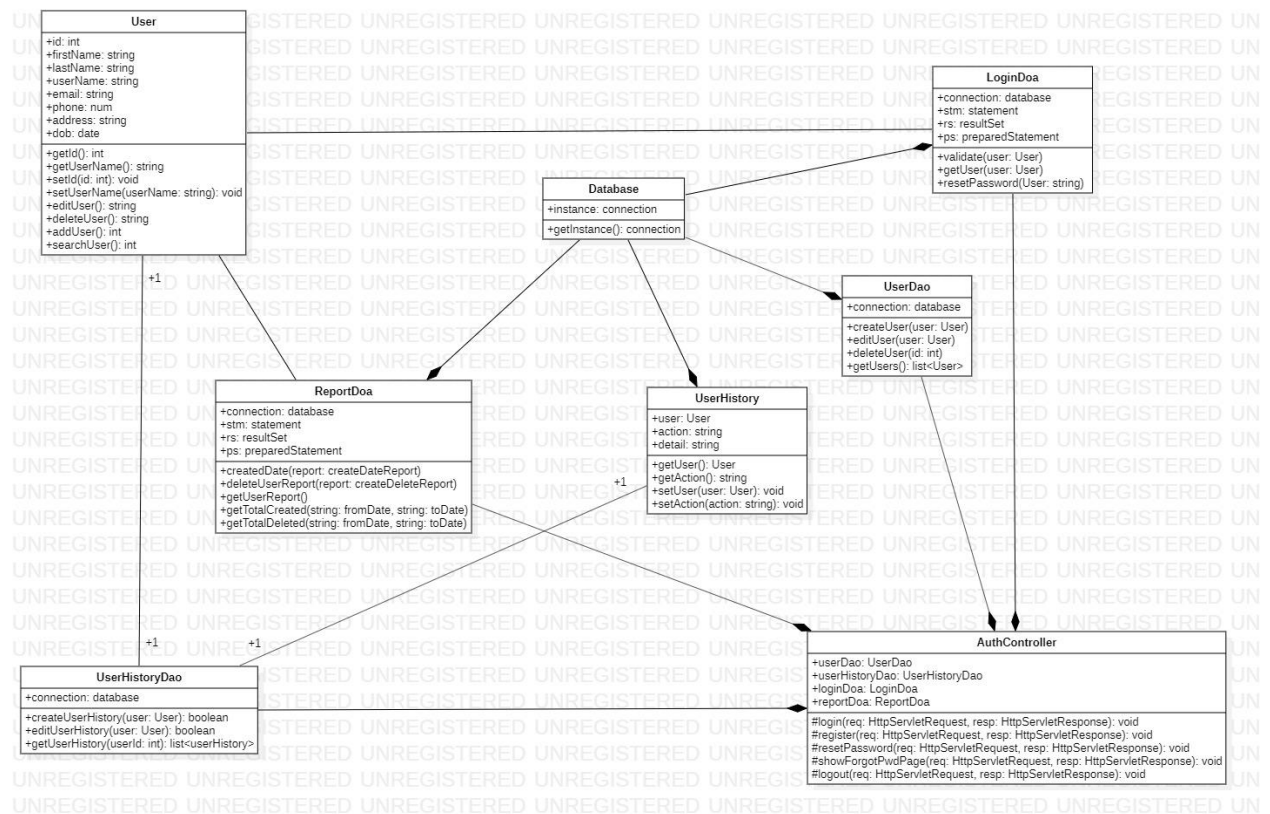


Figure 2 Class Diagram

3.3 Use case diagram:

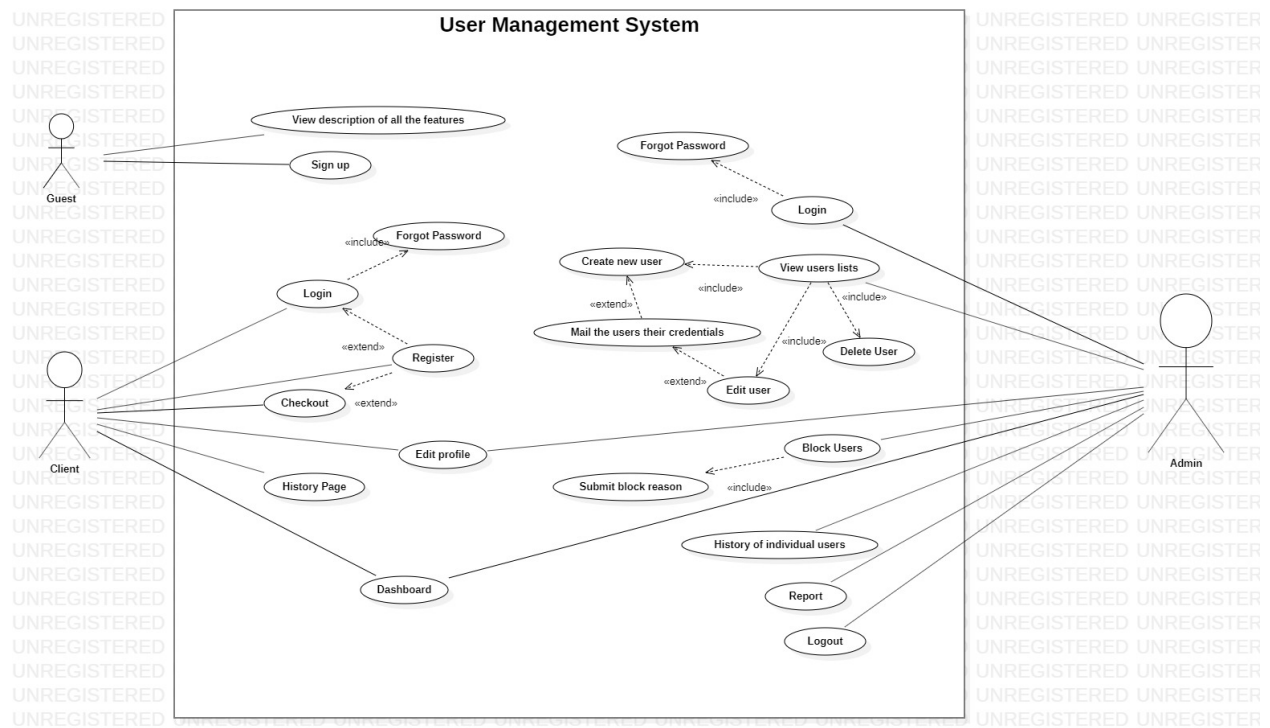


Figure 3 Use case Diagram

3.4 Sequence Diagram:

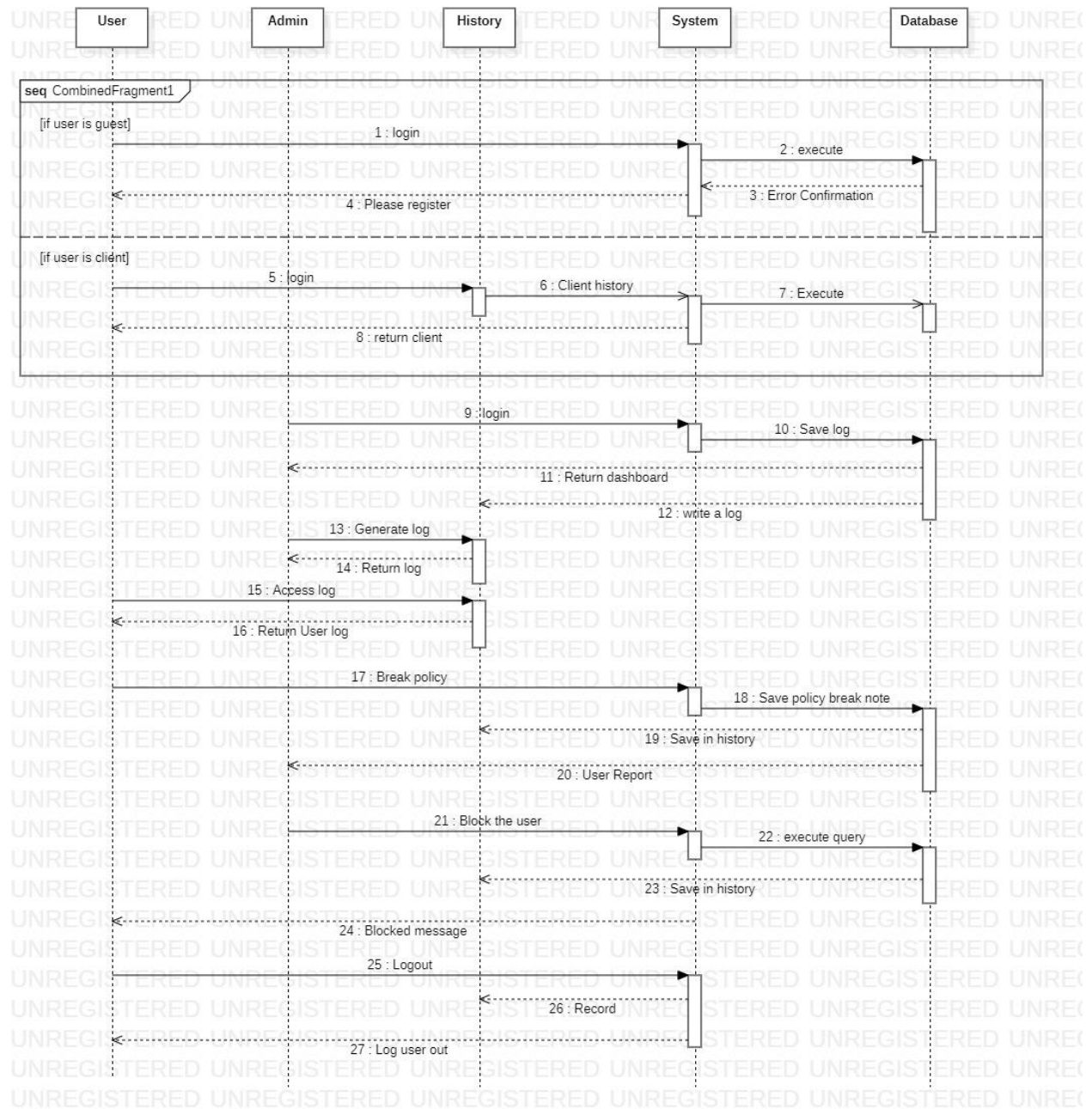


Figure 4 Sequence Diagram

3.5. User Stories and Requirement gathering:

ADMIN:

1. Story ID : US001

As an admin, I want to login/logout into the system directly so that I can manage other users.

Dependency: N/A

Story points: 3/5

Acceptance Criteria:

Assuming users already exist in the system.

Data Dictionary as provided.

Design as per mockup1.

Username and password should be given in the field and click on the login button.

Username must be an email field.

Password should be 8-20 characters.

Username and password are mandatory fields.

If login is failed the “invalid username or password” message should be displayed, login page is landing page. (Design as per mockup1)

Successful login should redirect to the dashboard page.

Login records should be stored in the history page.

Session should be destroyed after clicking the logout button and should be redirected to the home page.

2. Story ID : US002

As an admin, I want to view all users in the system so that I can manage other users.

Dependency: US001

Story points: 2/3

Acceptance Criteria:

All user should be visible including username, email, password and description

Design as per mockup 2.

All details should be in tabular format.

The system should have a search button for username.

The system should show details about specific user after search.

Records should be unique.

Records can be sorted by name and date.

3. Story ID: US003

As an admin, I want to create a new user in the system so that I can increase admin and users.

Dependency: US001, US002

Story points: 5/8

Acceptance Criteria:

Users can be added to the system.

Data Dictionary as provided.

Design as per mockup1.

Newly added user's username should be unique.

All newly added user's passwords should be the same and after providing ID and password to corresponding users they must change password.

User added records should be stored in the history page.

3. Story ID : US004

As an admin, I want to edit the email associated with a user in the system so that I can update the user's new email.

Dependency: US002

Story points: 5/8

Acceptance Criteria:

Admin can edit username and email.

Data Dictionary as provided.

Design as per mock3.

The system should contain a save button.

After clicking the save button, the system should redirect to mock2.

Update message should be sent to the user.

Records should be updated in the history page.

5. Story ID: US005

As an admin, I want to change the role of a user in the system so that I can change user's permissions.

Story point: 2

Dependency: N/A

Acceptance Criteria:

Admin can give and change permission for users in the system.

Design as per mock3.

Data dictionary as provided.

Admin can give access to read only or read and write to users of the system.

Contains save button.

Users should be informed about it via email.

Records should be updated in the history log.

6. Story ID: US006

As an admin, I want to change the password of a user in the system so that users can login into the system if they forgot their password.

Dependency: US002

Story point: 3/5

Acceptance Criteria:

Admin can change the password of the users.

.Design as per mock3.

Change should be updated in the database after clicking the save button.

Data Dictionary as provided.

Update message should be sent to the user.

Records should be updated in the history page.

7. Story ID: US007

As an admin, I want to reset the password of a user in the system so that users can change the password after they forgot password.

Story point: 3/5

Dependency: US002

Acceptance Criteria:

Admin can reset the password of the users.

Default password should be used after resetting.

Change should be updated in the database after clicking the save button.

Users should be informed via email.

Records should be updated in the history page.

8. Story ID: US008

As an admin, I want to disable a user in the system so that I can block users temporarily.

Story point: 3/5

Dependency: US002

Acceptance Criteria:

Admin should be able to disable a user in the system.

After clicking on the disable button page should redirect into the user Info page.

Change should be updated in the database.
Users should be informed via email.
Records should be updated in the history page.

9. Story ID: US009

As an admin, I want to restore a disabled user in the system so that I can unblock users.

Story point: 1/2

Dependency: US002, US008

Acceptance Criteria:

Admin should be able to enable a user in the system.

After clicking on the enable button page should redirect into the userInfo page.

Change should be updated in the database.

Users should be informed via email.

User's permission to use a regular system should be granted.

Records should be updated in the history page.

10. Story ID: US0010

As an admin, I want to remove a user from the system so that I can remove inactive users.

Story point: 3/5

Dependency: US002

Acceptance Criteria:

Admin should be able to remove a user in the system.

After clicking on the remove button page should redirect into the user info page.

Change should be updated in the database.

Users should be informed via email.

Records should be updated in the history page.

11. Story ID: US011

As an admin, I want to have a history log so that I can learn about the user's activities.

Story point: 3/5

Dependency: US001, US003, US004, US004... US0010

Acceptance Criteria:

Admin should have a history log page in the system.

History log should have details of all action performed in the system.

Admin should view the history log of all users of the system.

Design as per mockup4.

System should contain a search button to search specific users.

History log page should be sorted in date format.

System should contain a remove option to remove specific user history.

12. Story ID: US012

As an admin, I want to have a report page to see users created and blocked within a given date range so that I can learn about weekly, monthly and annually performance of the system.

Story point: 3/5

Dependency: US0011

Acceptance Criteria:

Admin should have a separate report page to see user details.

Details include users created and blocked within a given date and range.

Design as per mockup5.

System should contain a search button to search specific users.

System should contain a remove option to remove specific user details.

CLIENT:

1. Story ID: USC001

As a client, I want a register page in the system so that I can be a user of the system.

Story point: 13

Dependency: N/A

Acceptance Criteria:

Clients should have a separate registration page.

Name, Email address, phone number are required to register into the system.

Register button should be below the terms and conditions hyperlink.

Design as per mockup6

After clicking the register button, one time password (OTP) should be given for successful registration.

After successful registration, Client should redirect to dashboard page.

2. Story ID: USC002

As a client, I want to login/logout in the system so that I can use the system.

Story point: 3/5

Dependency: USC001

Acceptance Criteria:

Clients should login into the system after valid credentials.

Login requires email or phone and password.

Passwords must be a minimum 8 characters long and have a sensitive letter.

Logout button should be in the top right corner and should be clearly visible.

After the client clicks on the logout button, the account should logout.

3. Story ID: USC003

As a client, I want to edit the email associated in the system so that I can update my email

Story point: 8

Dependency: USC002

Acceptance Criteria:

Clients should have the authority to change their email address.

Only company email addresses are acceptable to change the email address.

Email address should not exceed more than 25 characters long.

Email should be verified to change.

Records should be updated in the history table.

4. Story ID: USC004

As a client, I want to recover my account if i forget the password in the system so that I can get access to the system.

Story point: 13

Dependency: USC002, USC005

Acceptance Criteria:

Email or phone is required to create a new password.

Forget password button should be above the login button.

Only the registered phone or email associated with the account are valid.

Clients should provide OTP to change the password.

Passwords must be a minimum 8 characters long and have a sensitive letter.

Records should be updated in the history table.

5. Story ID: USC005

As a client, I want to change the password in the system so that I can update my security number.

Story point: 3/5

Dependency: USC002

Acceptance Criteria:

Clients should be logged in to change the password.

Change password option should be in the account section.

Current password is required to change to a new one.

Passwords must be a minimum 8 characters long and have a sensitive letter.

After changing, Successful message should be displayed.

Records should be updated in the history table.

6. Story ID: USC006

As a client, I want a profile page in the system so that I can update about my info.

Story point: 8

Dependency: USC002, USC005

Acceptance Criteria:

Clients should have a separate profile page.

Profile page should contain Name, photo, email, phone, address, including KYC form.

Profile page should be in only one page.

Login is required to access the profile page.

Clients can change their information from the profile page.

Records should be updated in the history table.

7. Story ID: USC007

As a client, I want to see the history in the system so that I can learn about my activities.

Story point: 3/5

Dependency: USC002, USC003, USC004, USC005, USC006

Story points

Acceptance Criteria:

Clients should have a history log page in the system.

History log should have details of all actions performed in the system.

A client should be able to view the history log of his/her activities in the system.

Design as per mockup4..

History log page should be sorted in date format.

8. Story ID: USC008

As a client, I want a search page so that I can search certain data.

Story point: 8

Dependency: USC002

Story points:

Acceptance Criteria:

Records should be unique.

Search filters should be provided.

Records should be able to sort by name and date.

Landing page should be on the same page.

History log should be updated.

9. Story ID: USC009

As a client, I want to view the dashboard of the system so that I can use functionality of the system.

Story point: 13

Dependency: USC002

Story points:

Acceptance Criteria:

Design as per mockup7

Should contain information about users added, daily active users, user's rating of the system.

Various functions of the system should be listed.

Information should be in graphical formats.

GUEST:

1. Story ID: USG001

As a guest, I should be able to view the description of all the features in the application so that I can learn more about the system.

Story point: 3/5

Dependency: N/A

Story Points:

Acceptance Criteria:

Should include the terms and conditions of the system.

Should provide more info about the system like about us.

Guests should be able to view functionalities of the system but cannot use it.

2. Story ID: USG002

As a guest, I want an option to register as a client so that I can use the system.

Story point: 8

Dependency: N/A

Acceptance Criteria:

Guests should be able to sign up if they want to.

Design as per mockup6.

Landing page should be a dashboard.

3.6 Data Dictionary:

User:

S.N .	FIELD	DATATYPE(LENGTH)	CONSTRAINT S	DETAILS
1	user_id	Int	Primary Key auto increment	This is stored in database for unique value of user.
2.	user_name	Varchar(20)	unique	This field is required to login user which should be unique.
3.	password	Varchar(20)		Needed when user wants to login account
4.	User_type	Varchar(25)		This is needed for categorizing user i.e. admin, client, guest

5.	User_status	Boolean		Determines whether user is active or not. (True for active False for not active)
----	-------------	---------	--	--

Profile:

S.N	FIELD	DATATYPE(LENGTH)	CONSTRAINTS	DETAILS
1	user_id	Int	Primary Key auto increment	This is stored in database for unique value of user.
2.	user_name	Varchar(20)	Primary Key	This field is required to login user which should be unique.needed to link user in database

3.	Full name	Varchar(30)		Needed while signup.
4.	Address	Varchar(30)		Needed while signup.
5.	Contact	Vachar(10)		Needed while signup to verift the user.OTP is sent in given number.
6.	Gender	Varchar(6)		Needed while signup to verify user gender .i.e male, female and other.
7.	DOB	Date		
8.	User_type	Varchar(25)		Determines whether user is admin, client or guest.

3.7 Context diagram

DFD:

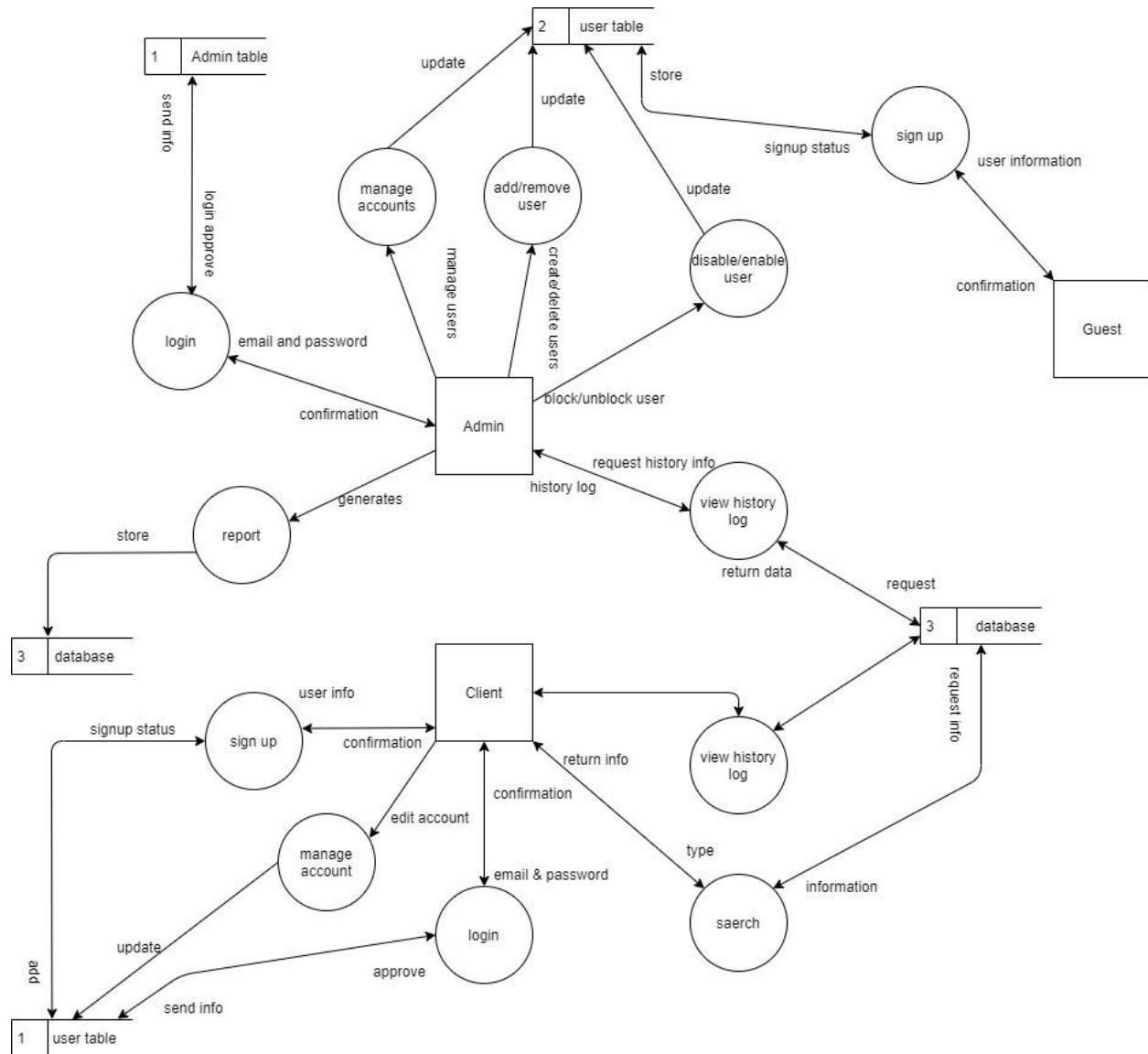


Figure 5 Context Diagram - DFD

3.7 Wireframes:

Register:

Website Name

Q Search

No Image

Create Account

EMAIL ADDRESS

USERNAME

PASSWORD

REPEAT PASSWORD

Sign Up

[Already got an account? Login here](#)

Heading@2020. All right reserved

Figure 6 Register -Wireframe

Admin Home page:

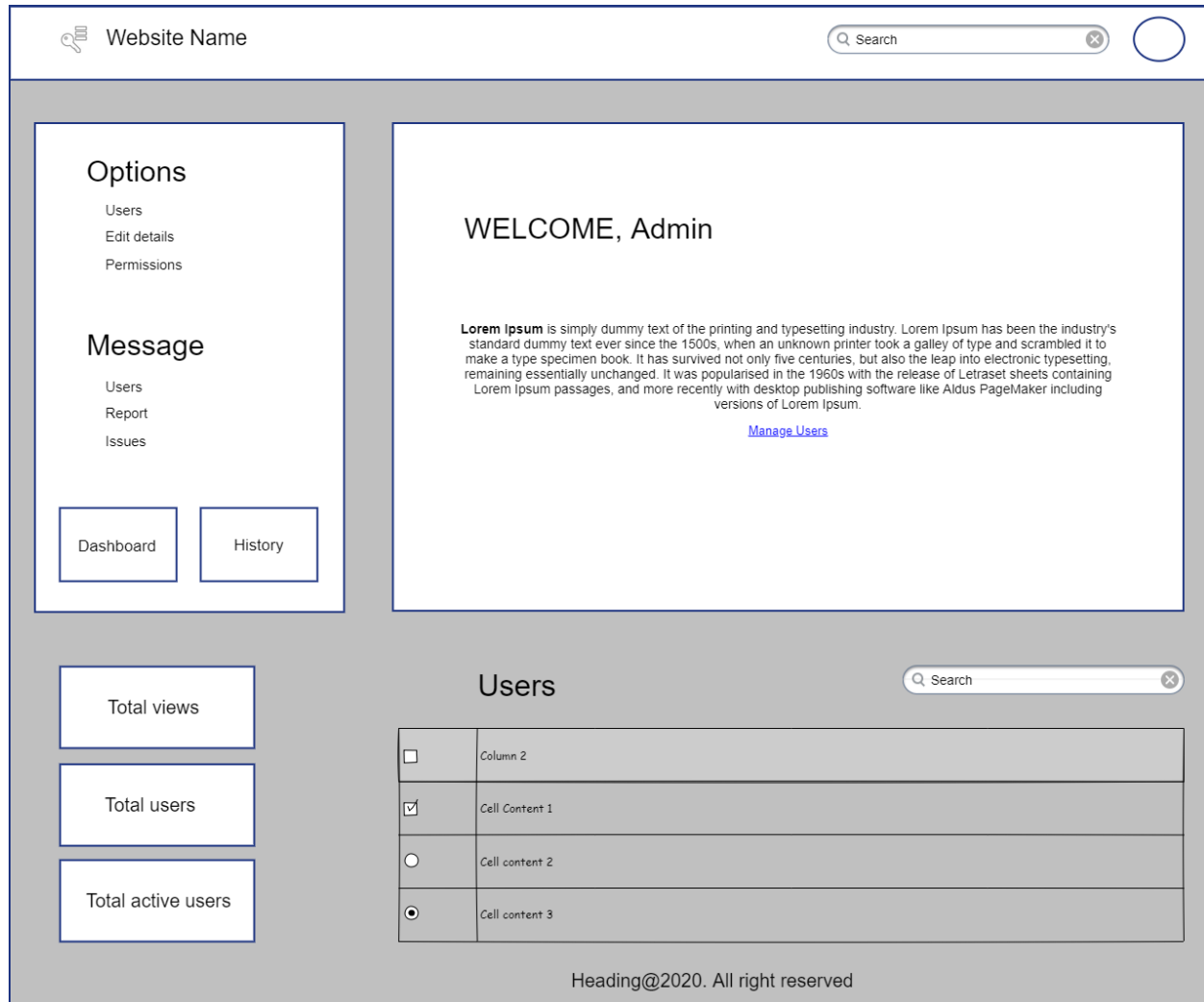


Figure 7 Admin Home Page -Wireframe

Admin Dashboard:

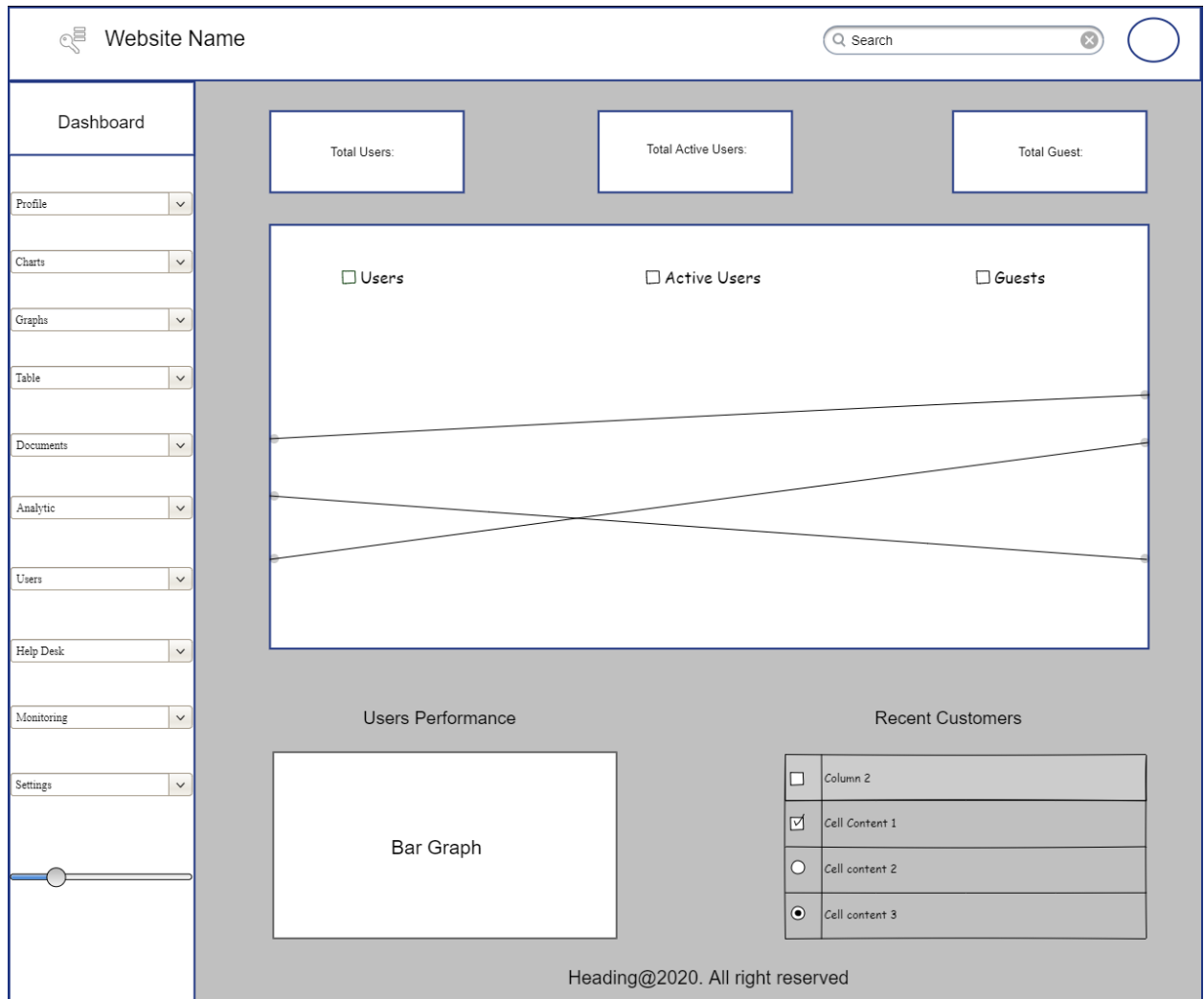
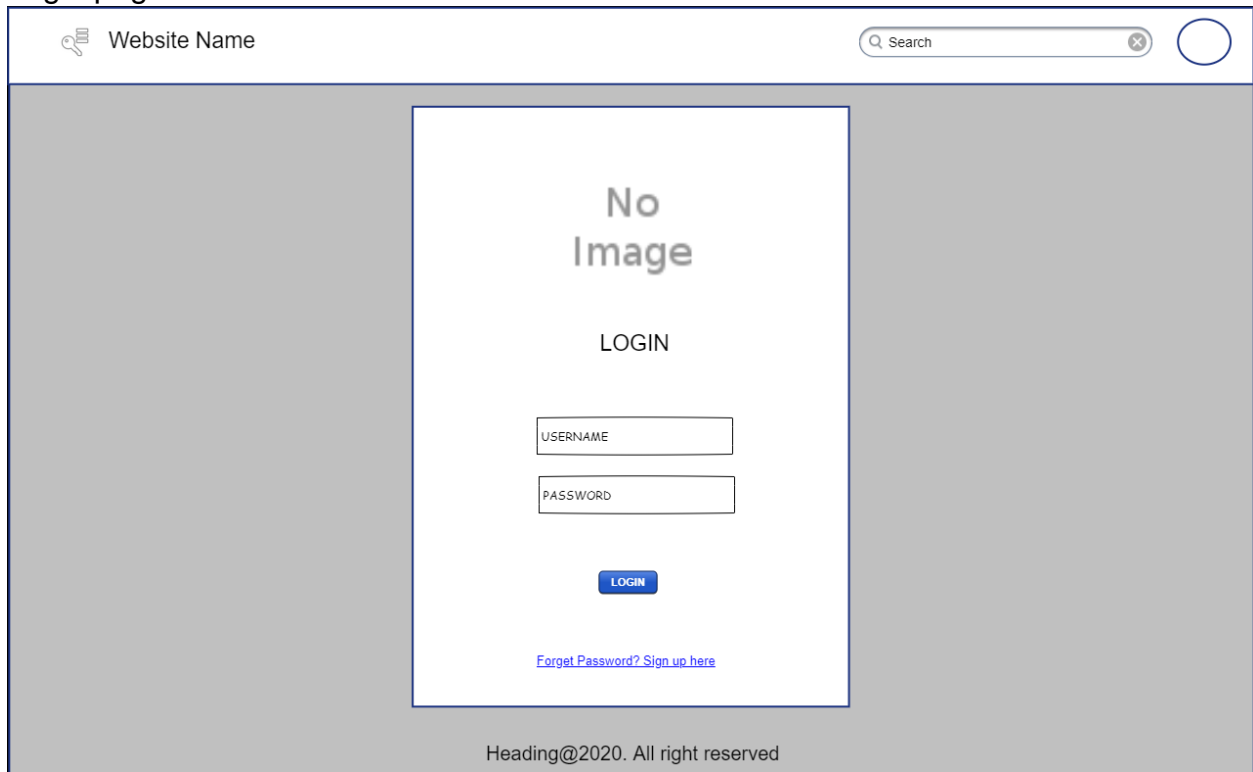


Figure 8 Admin Dashboard -Wireframe

Login page:



The wireframe shows a login page layout. At the top, there is a header bar with a placeholder icon and the text "Website Name" on the left, a search bar with a magnifying glass icon and the text "Search" in the center, and a circular profile icon on the right. The main content area is a light gray rectangle. In the center of this area is a white rectangular box. Inside this box, the text "No Image" is displayed in a large, bold, gray font. Below this, the word "LOGIN" is centered in a smaller, bold, black font. Underneath "LOGIN" are two stacked input fields: the top one is labeled "USERNAME" and the bottom one is labeled "PASSWORD". Below these fields is a blue button with the word "LOGIN" in white. At the bottom of the white box, there is a link that reads "Forget Password? Sign up here". Below the white box, centered in the gray area, is the footer text "Heading@2020. All right reserved".

Figure 9 Login page- Wireframe

User Home page:

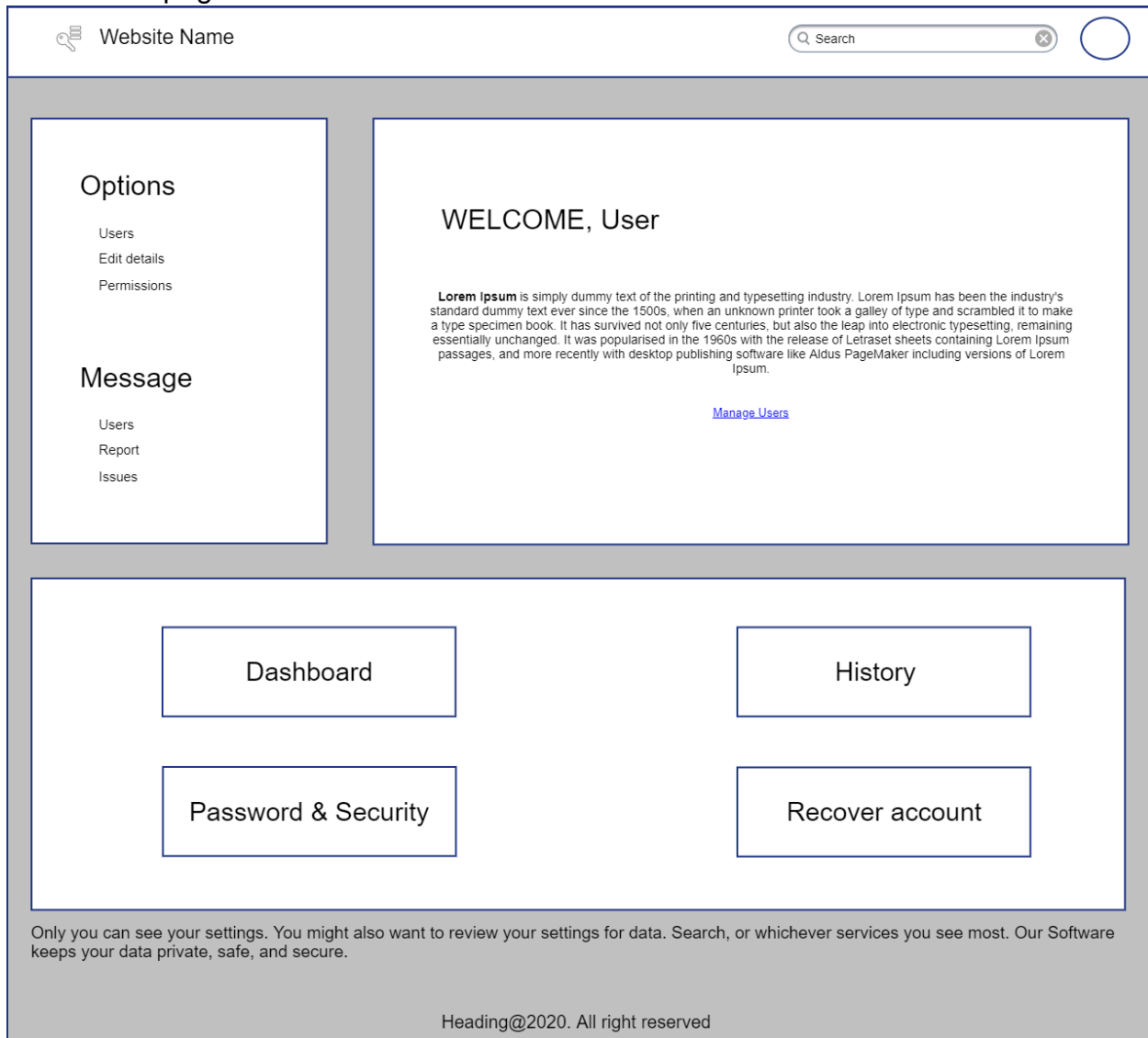


Figure 10 User home page -Wireframe

3.8 Mockup: Dashboard Mock up:

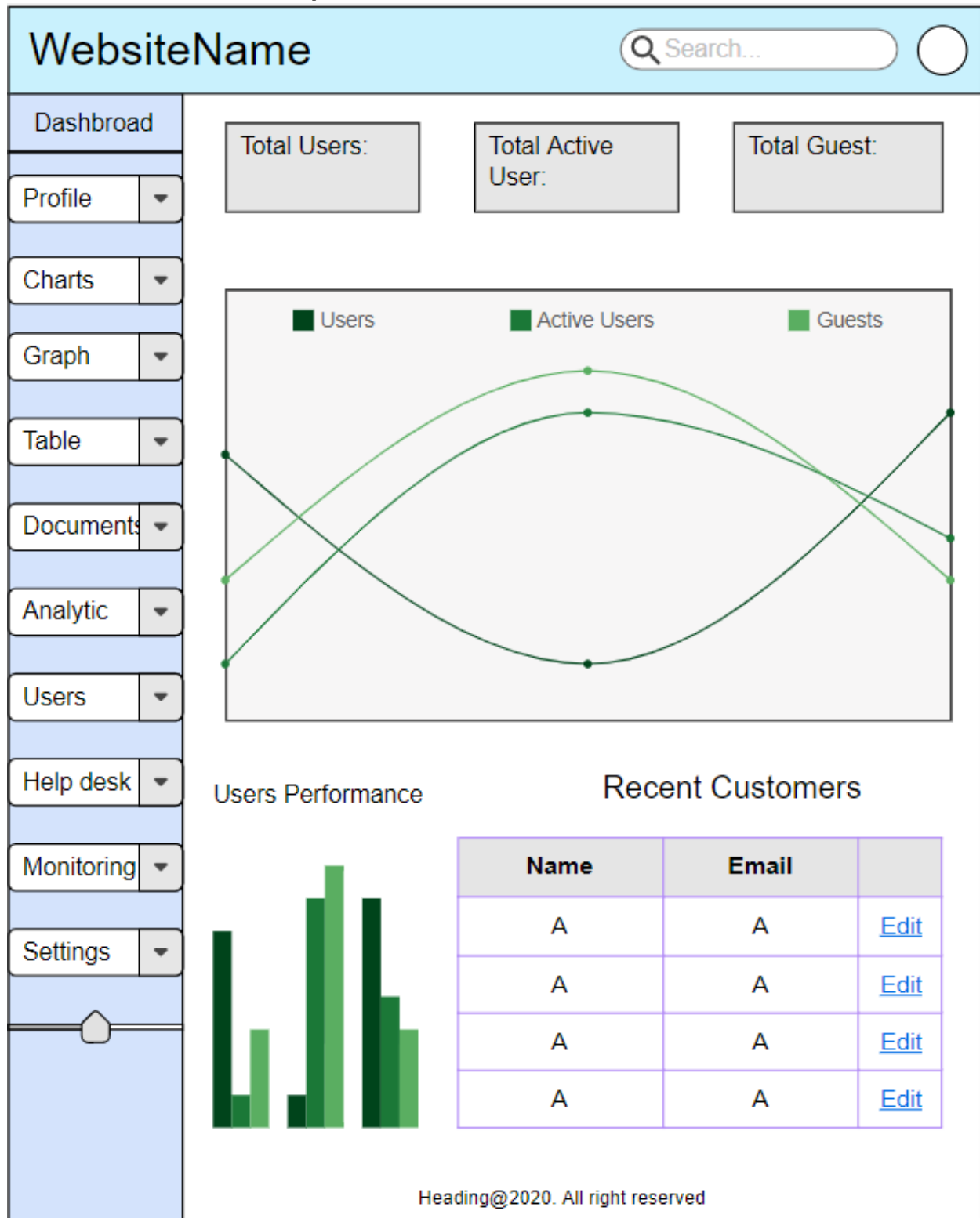


Figure 11 Dashboard mock up

Admin Home Mock up:

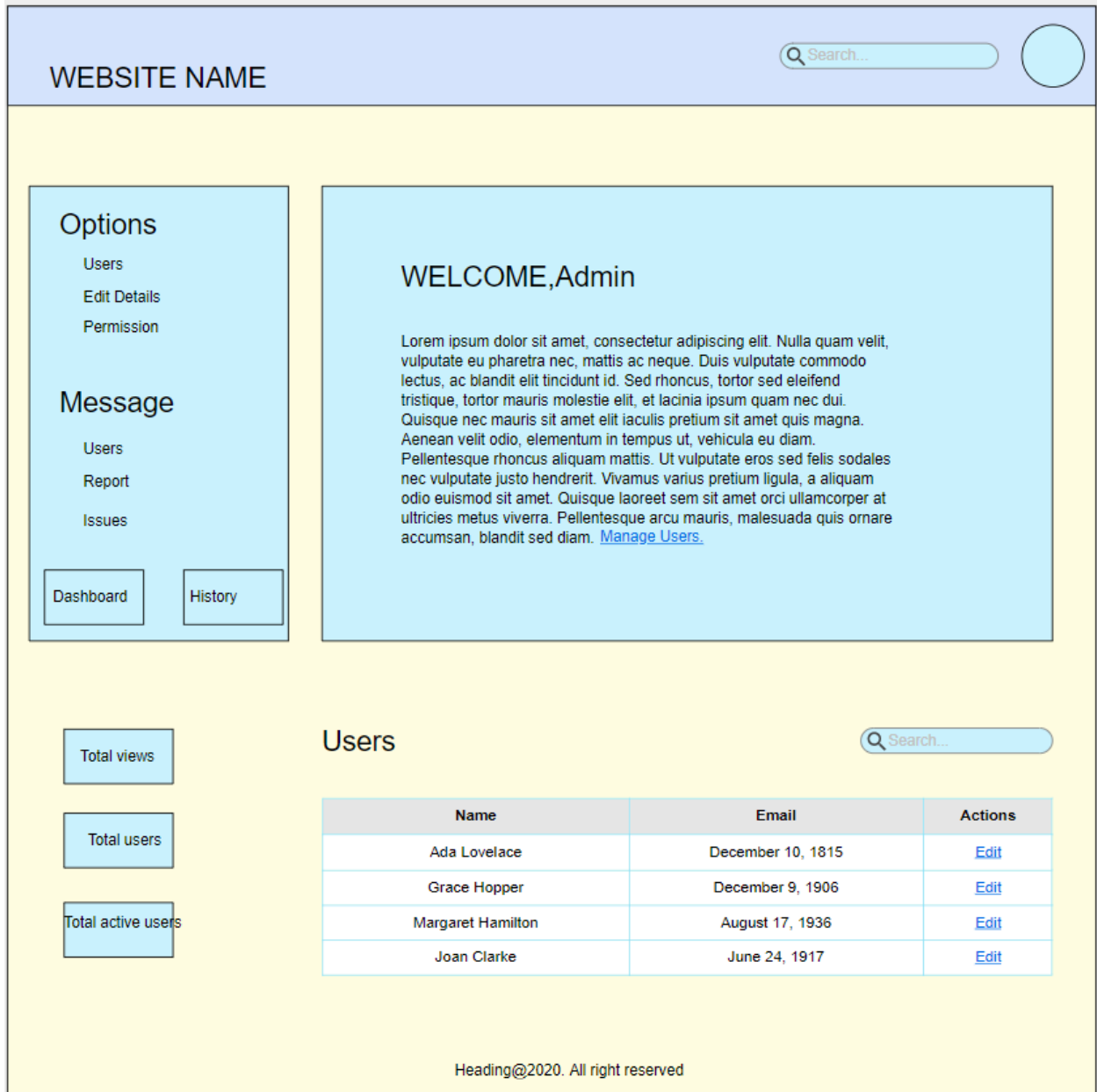


Figure 12 Admin home mock up

User Home Mock up:

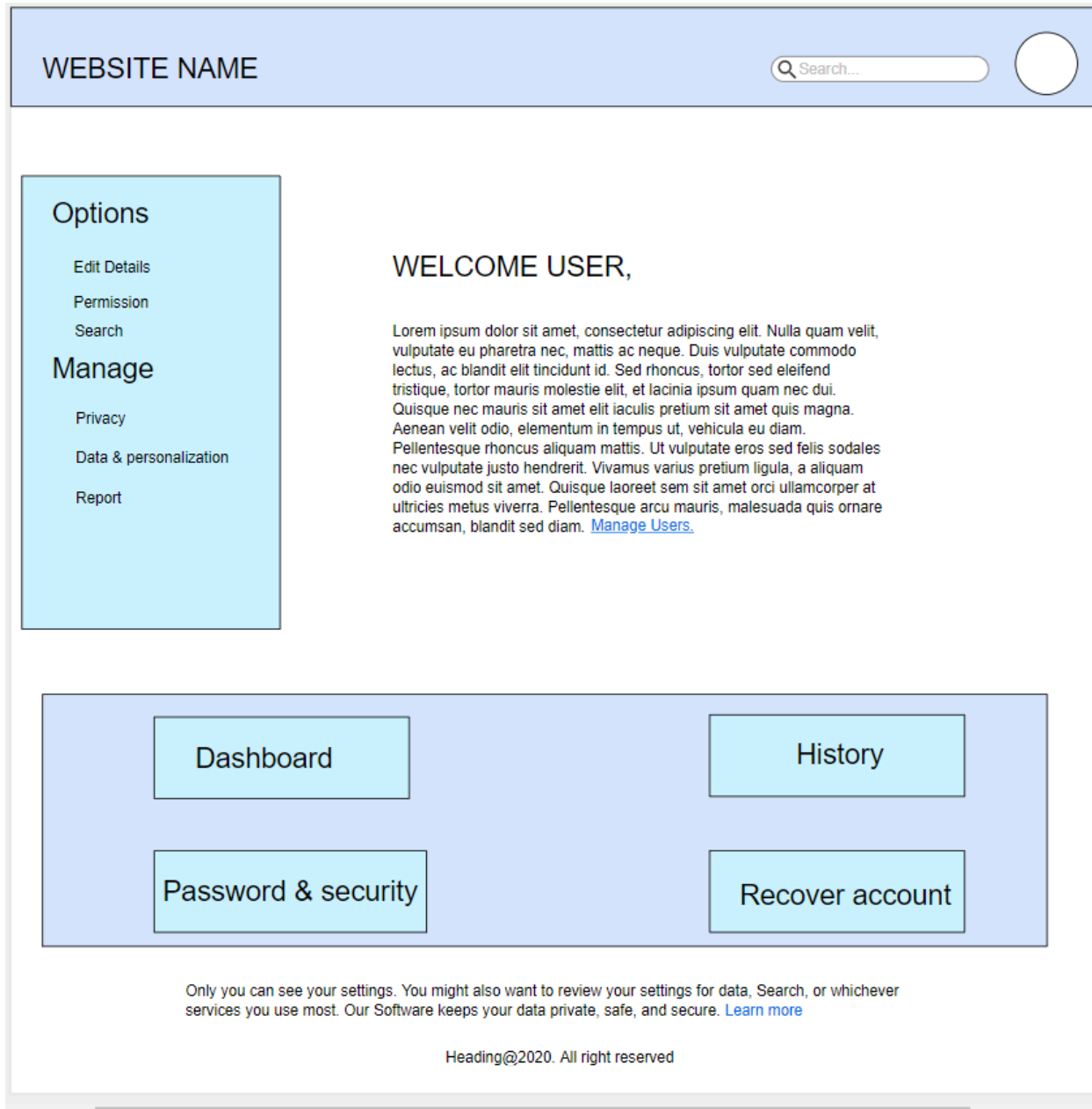
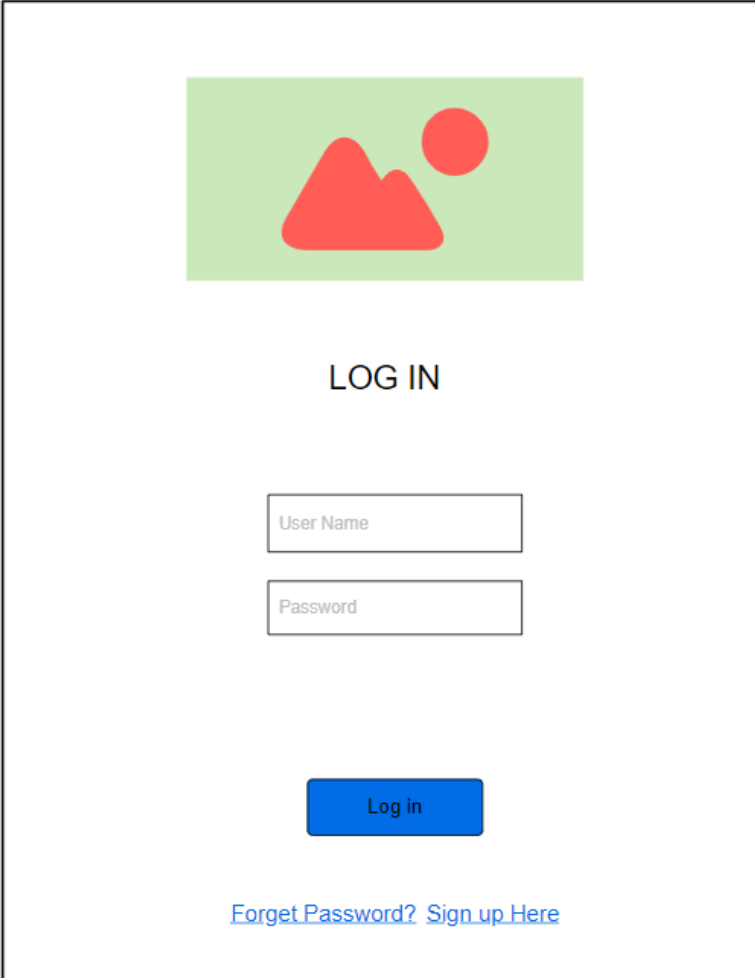


Figure 13 User home mock up

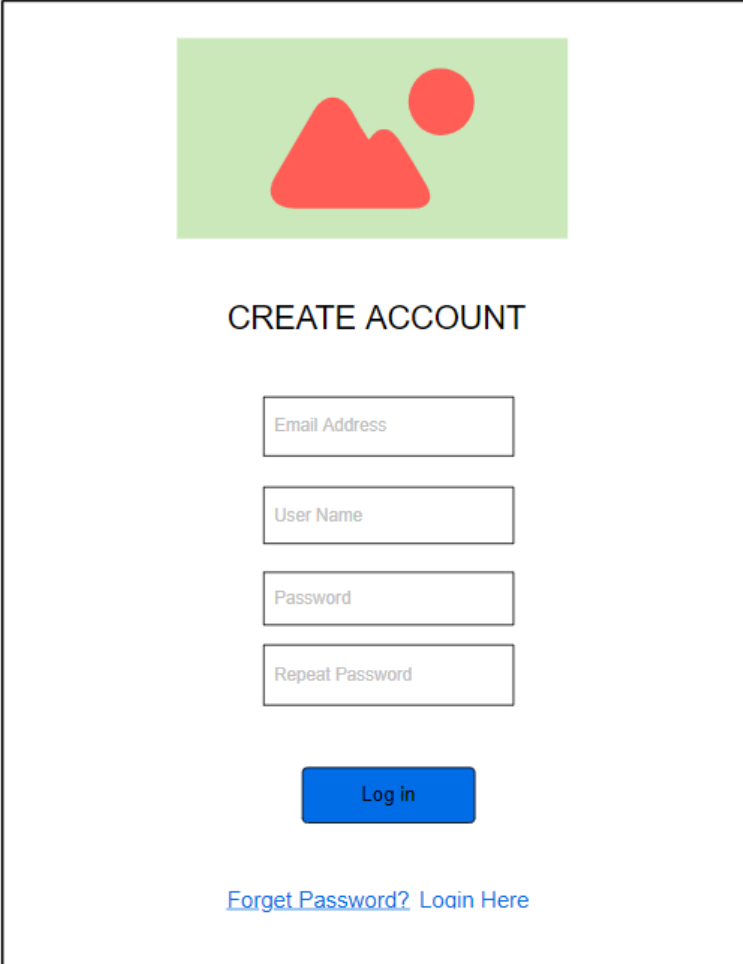
Login Mock up:



A login form mockup within a black rectangular border. At the top center is a green square containing a red stylized mountain and a red circle. Below this is the text "LOG IN" in bold black uppercase letters. Underneath are two white rectangular input fields with black borders; the first is labeled "User Name" and the second is labeled "Password". Below the input fields is a blue rectangular button with rounded corners and the text "Log in" in white. At the bottom, the text "Forget Password?" is followed by a blue underlined link "Sign up Here".

Figure 14 Login mock up

Register Mock up:



A mockup of a registration form. At the top is a green square containing a red stylized mountain and a red circle. Below this is the text "CREATE ACCOUNT" in bold. There are four input fields stacked vertically: "Email Address", "User Name", "Password", and "Repeat Password". Below these fields is a blue "Log in" button. At the bottom are two links: "Forget Password?" and "Login Here".

CREATE ACCOUNT

Email Address

User Name

Password

Repeat Password

Log in

[Forget Password?](#) [Login Here](#)

Figure 15 Register mock up

Admin setting Mock up:

WEBSITE NAME

Q Search...

Admin's setting

Q Search...

Options

Users

Edit Details

Permission

Message

Users

Report

Issues

Dashboard

History

Username	Email	Password	Permission
Ada	ram@gmail.com	Ada Lovelace	Write
Grace	shyam@gmail.com	Grace Hopper	Read
Margaret	geet@gmail.com	Margaret Hamilton	Read and Write
Joan	Hello@gmail.com	Joan Clarke	Read

Save

Report And Issues:

☒ April 13.2020

My account can't be recoverd

CLear

☒ April 13.2020

I can't logout.please help me.

CLear

☒ April 13.2020

I can't logout.please help me.

CLear

Heading@2020. All right reserved

Figure 16 Admin setting

History Mock up:

WEBSITE NAME

History

Q Search...

[Home](#)

Clear All

☒ April 13,2020

User has changed his password.

Clear

☒ April 13,2020

User has changed his password.

Clear

☒ April 13,2020

User has changed his password.

Clear

☒ April 13,2020

User has changed his password.

Clear

☒ April 13,2020

User has changed his password.

Clear

☒ April 13,2020

User has changed his password.

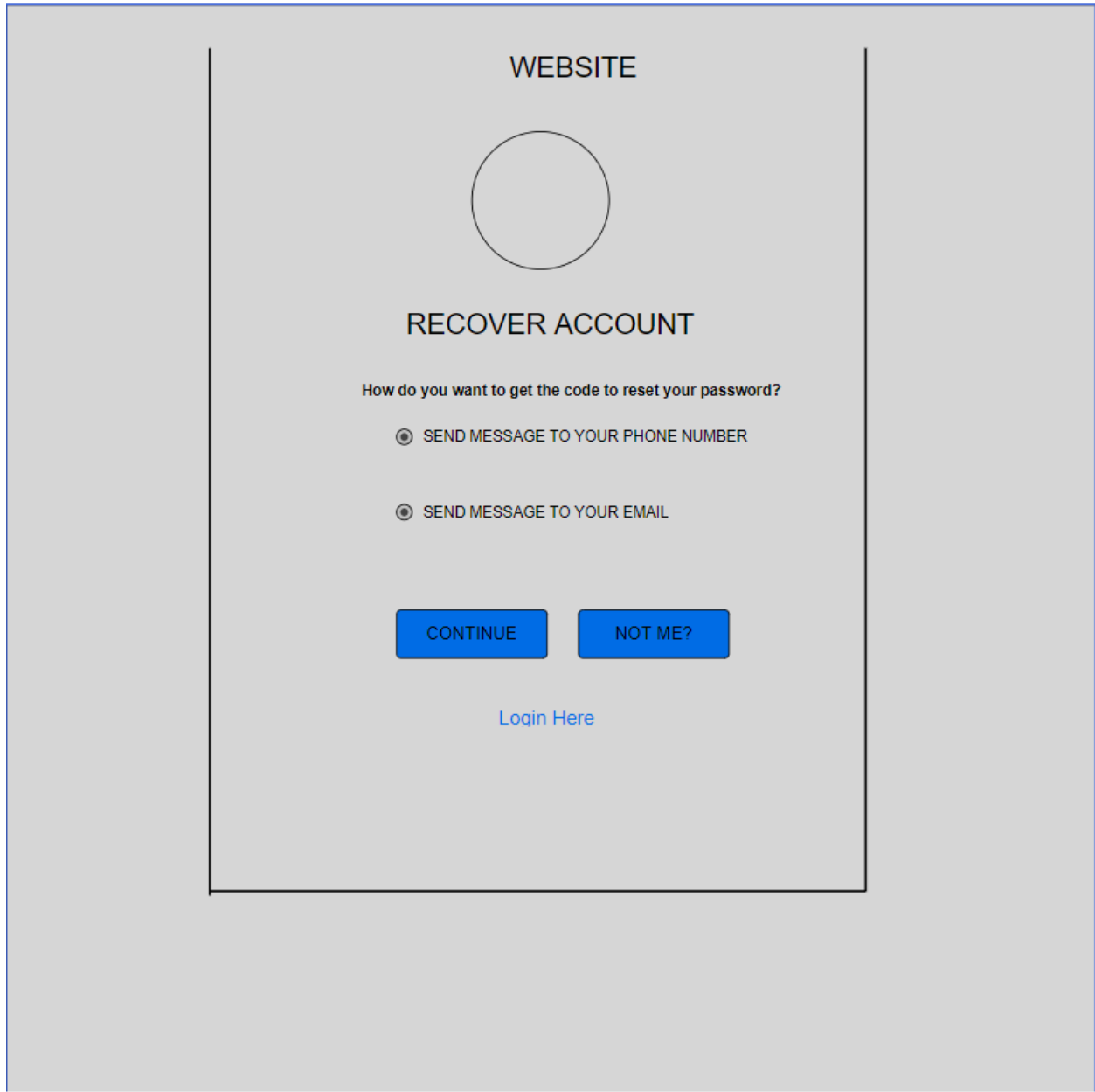
Clear

Only you can see your settings. You might also want to review your settings for data, Search, or whichever services you use most. Our Software keeps your data private, safe, and secure. [Learn more](#)

Heading@2020. All right reserved

Figure 17 History mock up

Recover account Mock up:



A mockup of a 'Recover account' web page. The page has a light gray background. A central white rectangular area contains the form. At the top of this area is the word 'WEBSITE' in black. Below it is a large empty circle, likely a placeholder for a logo. Underneath the circle is the title 'RECOVER ACCOUNT' in bold black. Below the title is the question 'How do you want to get the code to reset your password?' in black. There are two radio button options: 'SEND MESSAGE TO YOUR PHONE NUMBER' and 'SEND MESSAGE TO YOUR EMAIL'. Below these options are two blue buttons with white text: 'CONTINUE' and 'NOT ME?'. At the bottom of the white area is a blue link that says 'Login Here'.

WEBSITE

RECOVER ACCOUNT

How do you want to get the code to reset your password?

☐ SEND MESSAGE TO YOUR PHONE NUMBER

☐ SEND MESSAGE TO YOUR EMAIL

CONTINUE NOT ME?

[Login Here](#)

Figure 18 Recover account mock up

Change Password Mock up:

WEBSITE NAME

Search...

Home

Notification

Settings

Options

Edit Details

Permission

Search

Manage

Privacy

Data & personalization

Report

Change Password

Close

It's a good idea to use a strong password that you're not using elsewhere

Current

Email Address

New

Email Address

Retype

Email Address

[Forgot your password?](#)

Reset

Close

Username	Email	Password	Permission(Can't be change)
Ada	ram@gmail.com	Ada Lovelace	Write

Save

Heading@2020. All right reserved

Figure 19 change password mock up

Guest home page Mock up:

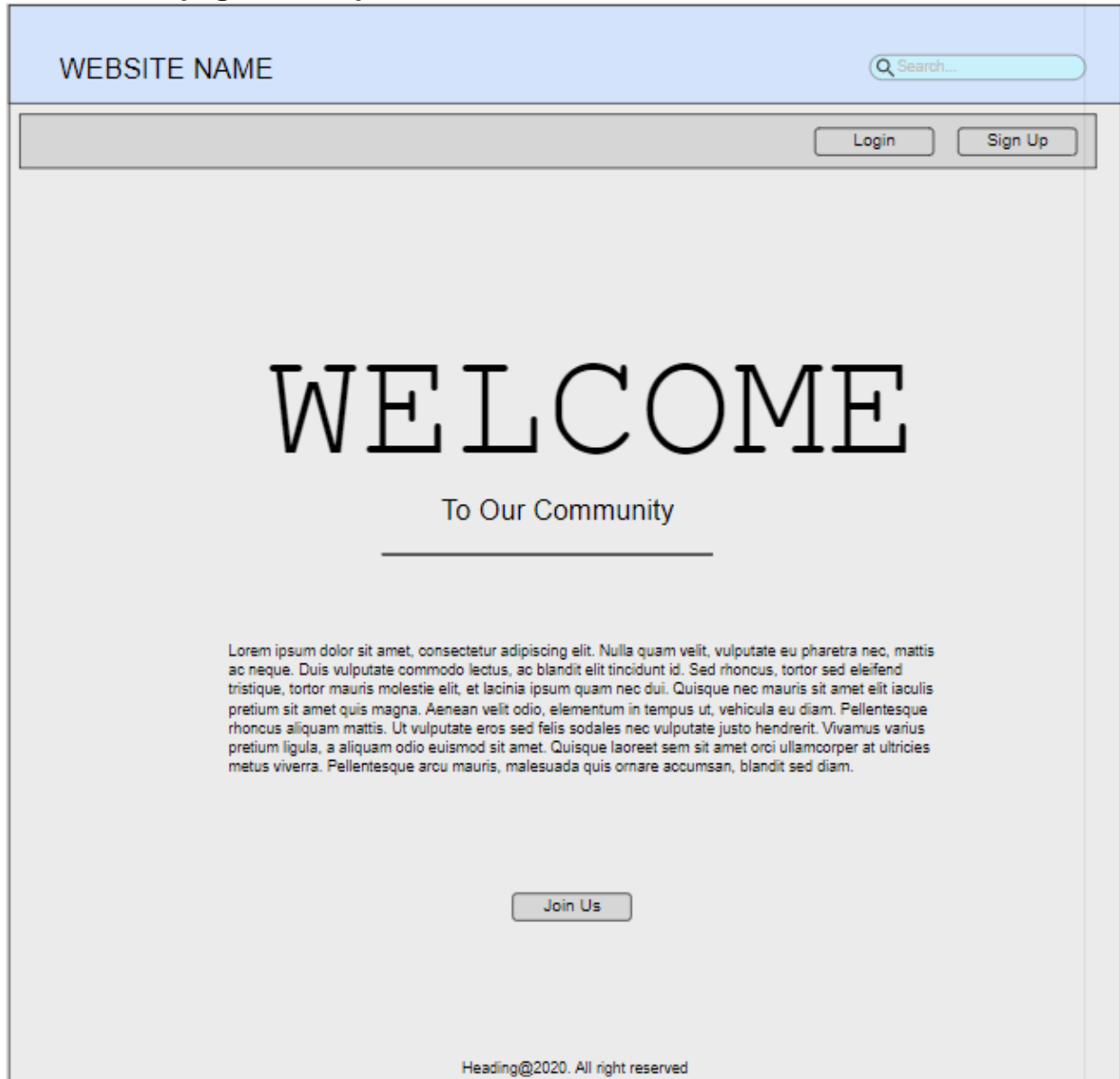


Figure 20 Home page mock up

4. Chapter 4: Development

The way of managing a software development project can be called as software development methodology. It refers to the framework that is used to plan, structure and control the process of developing a software system. It typically addresses issues like when software will be released, who works on what, selecting features and what testing is done. On the basis of project nature, Software development Methodology can be selected.

4.1 Comparison between two methodologies:

Here we are going to compare between the Waterfall model and the Iterative model.

Waterfall Model

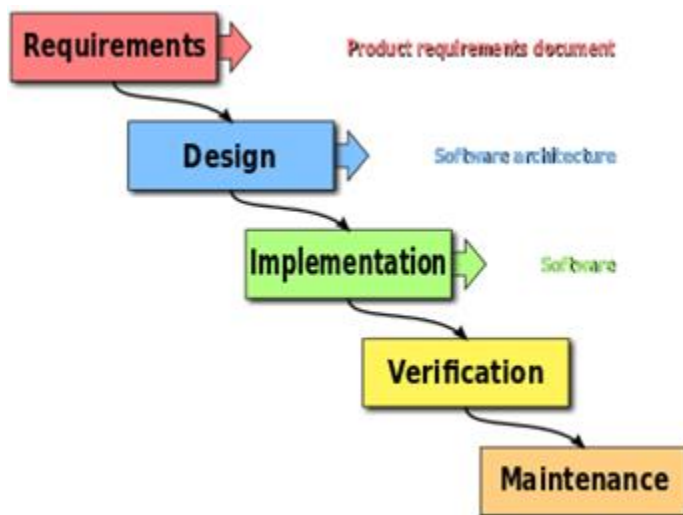


Figure 21 Waterfall model

In a waterfall model, each phase must be completed fully before the next phase can begin. This type of software development model is basically used for the project which is small and there are no uncertain requirements. At the end of each phase, a review takes place to determine if the project is on the right path and whether or not to continue or discard the project.

When to use the waterfall model

- This model is used only when the requirements are very well known, clear and fixed.
- Product definition is stable.

- Technology is understood.
- There are no ambiguous requirements
- Ample resources with required expertise are available freely
- The project is short.

Advantages of Waterfall model

- It is easy to manage due to the rigidity of the model – each phase has specific deliverables and a review process.
- In this model phases are processed and completed one at a time. Phases do not overlap.
- Waterfall model works well for smaller projects where requirements are clearly defined and very well understood.

Disadvantages of Waterfall model

- Difficult to make changes later.
- High amount of risk and uncertainty.
- Delays testing until after completion.
- Requirements must be known to prior development, which delays in project completion.

Iterative Development methodology

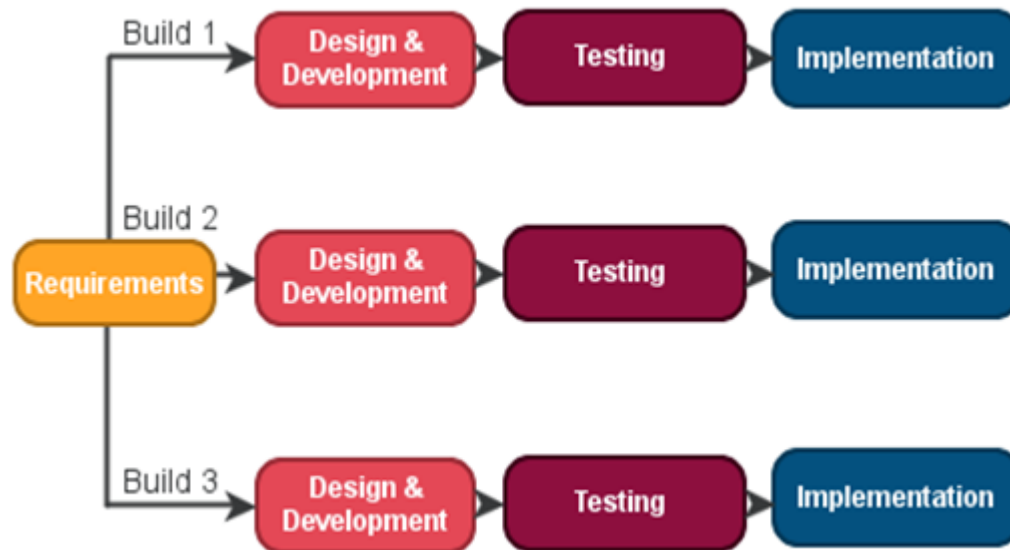


Figure 22 Iterative Development methodology

When to use iterative model:

- Requirements of the complete system are clearly defined and understood.
- When the project is big.
- Major requirements must be defined; however, some details can evolve with time.

Advantages of Iterative model

- less time is spent on documenting and more time is given for designing.
- we can get the reliable user feedback.
- We can build and improve the product step by step. Hence, we can track the defects at early stages.

- can create a high-level design of the application before we actually begin to build the product and define the design solution for the entire product.

Disadvantages of Iterative model

- Not suitable for small projects
- Highly skilled team required for skill analysis.
- Require more resources
- More management attention is required
- Not suitable for changing requirements though the cost of change is lesser.

4.2 Similarity between Waterfall and Prototyping model:

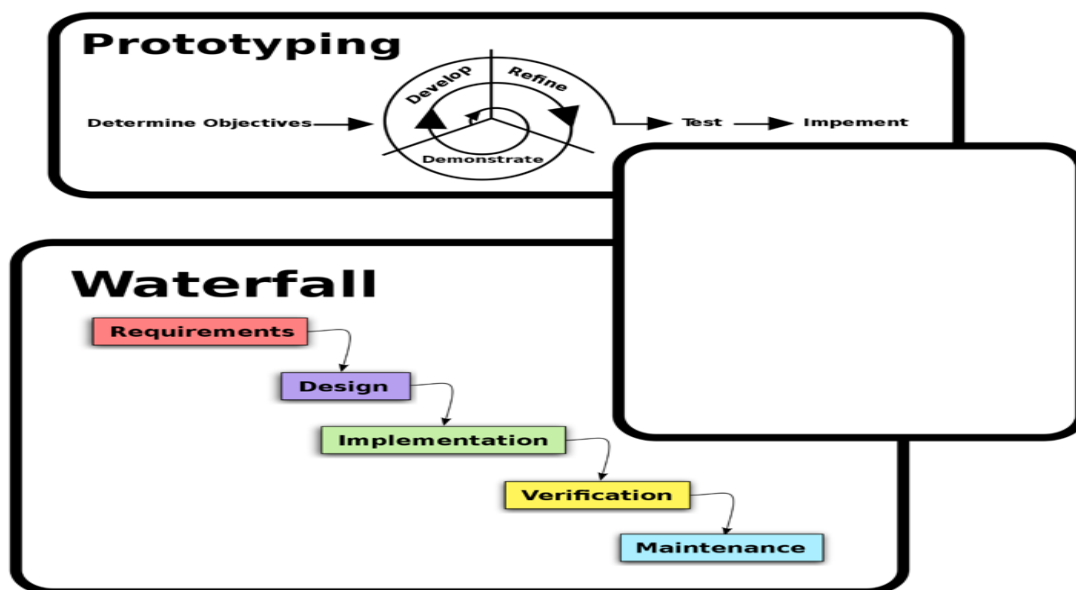


Figure 23 Similarity between waterfall and prototyping model

Similarities between Waterfall and Prototype model

Each life cycle is divided into phases where specific objectives are to be met.
 Both models have an objective to reduce the development and maintenance cost.
 Both models are suitable for short-term programs or short-life span systems.

5.3 Selected Methodology:

Agile Development Methodology



Figure 24 Stages of Agile Methodology

It refers to a software development approach based on iterative development. Means the methods break into smaller iteration or parts that do not directly involve in long term planning. The duration, iteration and scope are clearly defined in plan.

Reasons behind the selection of this methodology

- Errors can be fixed while the application is in the development stage.
- Working software can be delivered frequently
- Small projects like this can be implemented quickly
- Testing is done in every phase.
- Minimal rules and Documentation
- Functionality can be rapidly developed and demonstrated.
- Little or no planning required
- Easy to manage
- Gives flexibility to developers

Phases of Agile Model

- **Requirements gathering:** Defining the requirements and explaining the business, plan the time and effort needed to build the whole project.
- **Design the requirements:** Work with stakeholders to define requirements. User flow diagram or UML diagram, UI/UX can be used to show the work of new features and show how it will apply to an existing system.
- **Construction/ iteration:** Designers and developers start working on their project, which aims to deploy a working software. The software or application will undergo various stages of improvement.
- **Testing/ Quality assurance:** In this stage, the Testers and Quality Assurance team examines the software performance and looks for the bug.
- **Deployment:** Issues the software for the users work environment.
- **Feedback:** After releasing the software, Developers receive feedback about the product and work through the feedback.

4.3 Plan/Schedule:

Task ID	Task Description	Task Duration(days)	Start Date	End Date
1	Requirement Gathering	4	5-May	8-May
1.1	User Stories	4	5-May	8-May
2	Design	9	9-May	17-May
2.1	Table Structure	2	9-May	10-May
2.2	Usecase Diagram	1	11-May	11-May
2.3	Class Diagram	1	12-May	12-May
2.4	ER Diagram	1	13-May	13-May
2.5	Wireframes	2	14-May	15-May
2.6	Mockups	2	16-May	17-May
3	Implementation	12	18-May	29-May
3.1	UI/UX	2	18-May	19-May
3.2	Login/Signup	2	20-May	21-May
3.3	Main Dashboard page	2	22-May	23-May
3.4	Edit Profile	1	24-May	24-May
3.5	User History	1	25-May	25-May
3.6	Manage users	1	26-May	26-May
3.7	Reset Password	2	27-May	28-May
3.8	Block/Unblock users	1	29-May	29-May
4	Testing	4	30-May	2-Jun
4.1	White Box Testing	2	30-May	31-May
4.2	Black Box Testing	2	1-Jun	2-Jun
5	Deployment	2	3-Jun	4-Jun
6	Documentation	3	5-Jun	7-Jun

4.4 Gantt Chart:

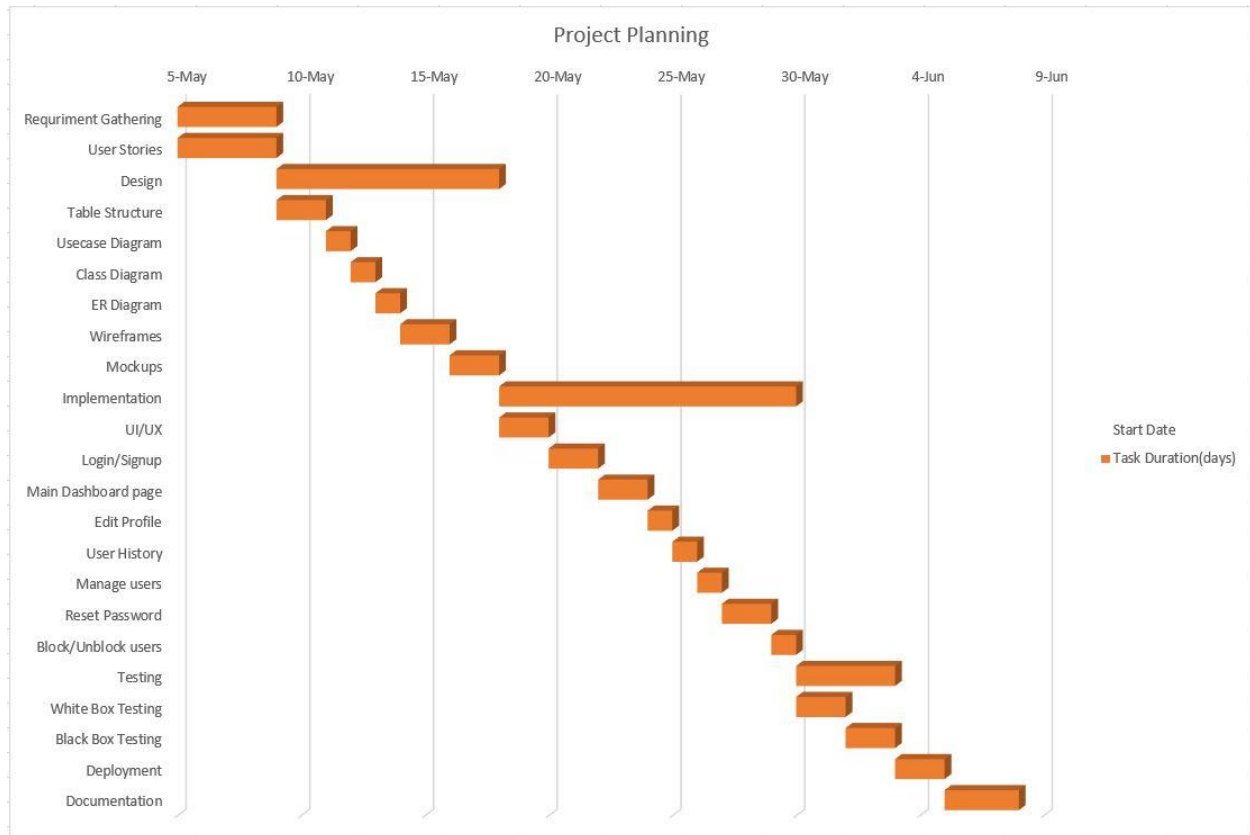
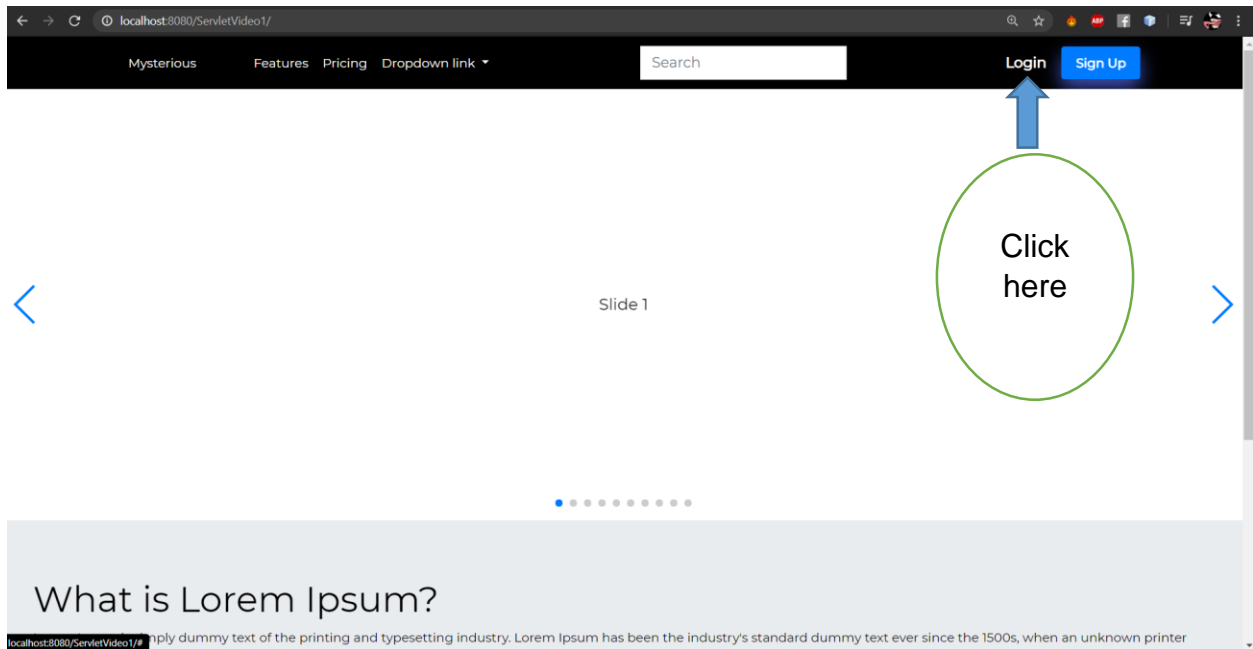


Figure 25 Gantt Chart

5. Chapter 5: User Manual

5.1 Logging in as admin

1. Enter the site URL (<http://localhost:8080/ums>) in your address bar and you will be shown the homepage. Click to **LOGIN** button.



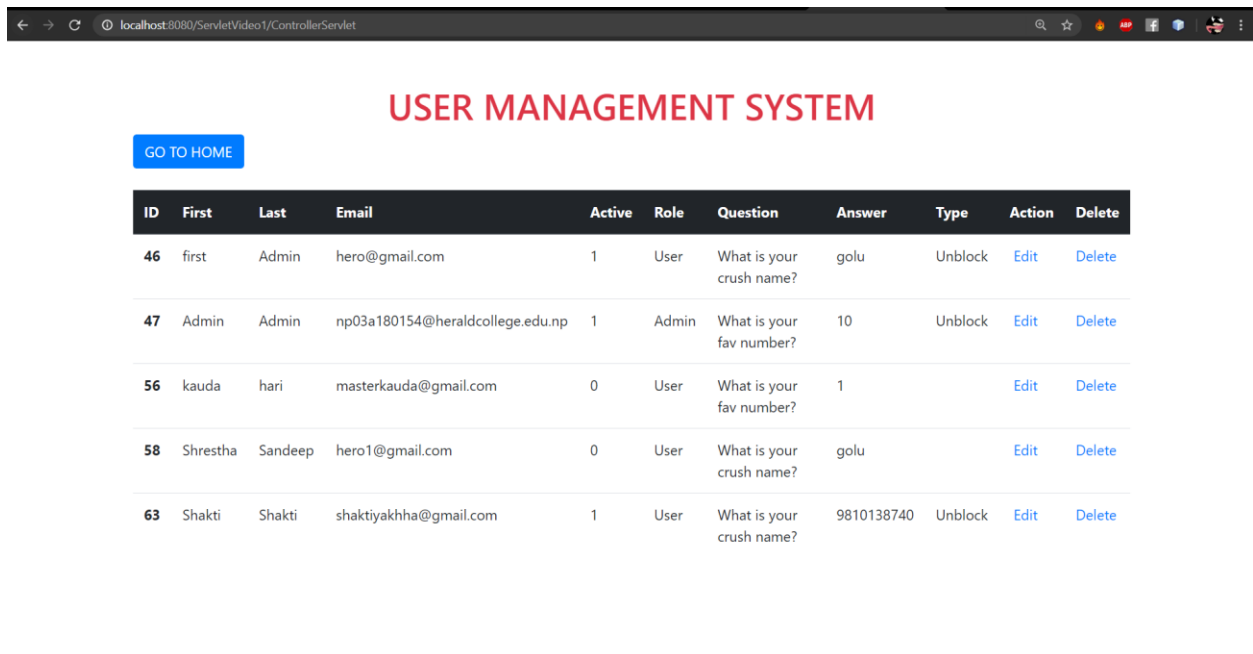
2. To login into system, enter your email and password (You will be provided). And click **LOGIN** button.

3. After login, Admin dashboard will be shown like this.

Email	Action	Detail	Time
kvo@gmail.com	User Registerd	UserRegisterd	2020-06-08 14:00:26.0
vero@gmail.com	User Registerd	UserRegisterd	2020-06-08 14:06:55.0
masterkauda@gmail.com	User Registerd	User is Registerd	2020-06-08 14:23:32.0
hero1@gmail.com	User Registerd	User is Registerd	2020-06-08 14:45:11.0
shakti@gmail.com	User Registerd	User is Registerd	2020-06-08 14:58:17.0
dewan@gmail.com	User Registerd	User is Registerd	2020-06-09 10:08:10.0
shaktiyakhha@gmail.com	User Registerd	User is Registerd	2020-06-09 10:57:22.0

Figure 26 Dashboard for Admin

4. On clicking on **USER TABLE** you can view other users.

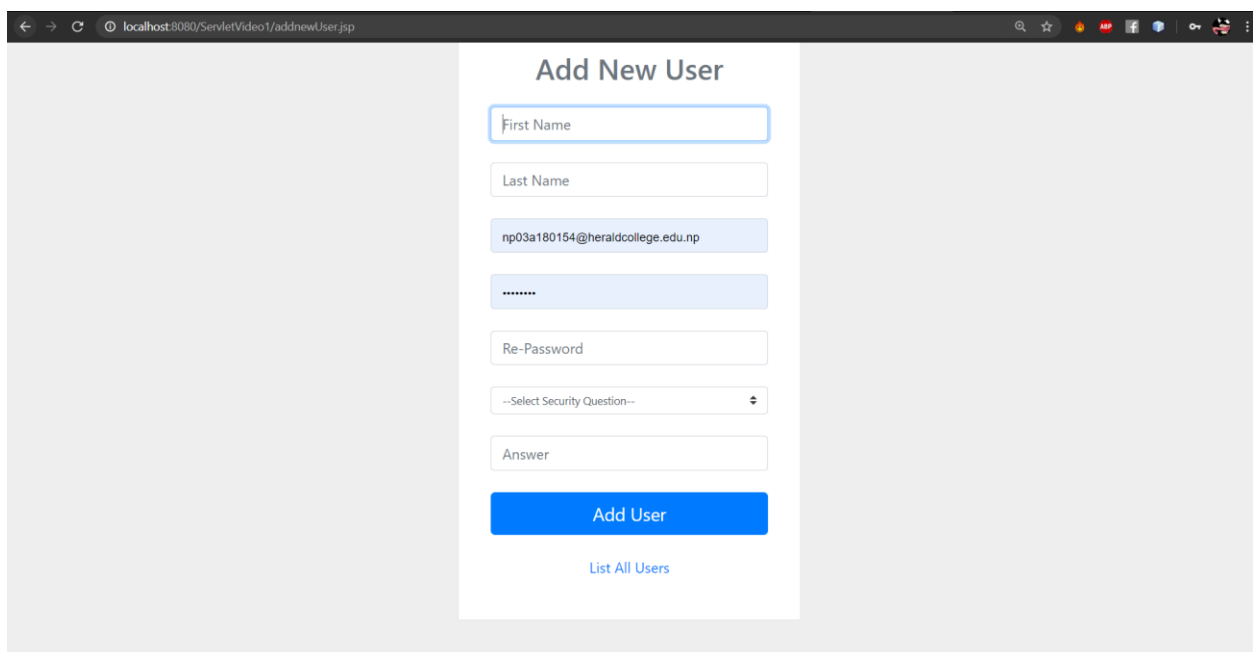


The screenshot shows a web browser at localhost:8080/ServletVideo1/ControllerServlet. The page title is "USER MANAGEMENT SYSTEM". There is a "GO TO HOME" button. Below it is a table with 12 columns: ID, First, Last, Email, Active, Role, Question, Answer, Type, Action, and Delete. The table contains 5 rows of user data.

ID	First	Last	Email	Active	Role	Question	Answer	Type	Action	Delete
46	first	Admin	hero@gmail.com	1	User	What is your crush name?	golu	Unblock	Edit	Delete
47	Admin	Admin	np03a180154@heraldcollege.edu.np	1	Admin	What is your fav number?	10	Unblock	Edit	Delete
56	kauda	hari	masterkauda@gmail.com	0	User	What is your fav number?	1		Edit	Delete
58	Shrestha	Sandeep	hero1@gmail.com	0	User	What is your crush name?	golu		Edit	Delete
63	Shakti	Shakti	shaktiyakhha@gmail.com	1	User	What is your crush name?	9810138740	Unblock	Edit	Delete

Figure 27 user table for admin

5. On clicking on **ADD USER** button you can add user also. For that enter all the fields and click **ADD** button.



The screenshot shows a web browser at localhost:8080/ServletVideo1/addnewUser.jsp. The page title is "Add New User". The form contains the following fields: First Name, Last Name, Email (pre-filled with np03a180154@heraldcollege.edu.np), Password (masked with dots), Re-Password, a dropdown for "Select Security Question", and an Answer field. There is a blue "Add User" button and a "List All Users" link below it.

Figure 28 Add new user by Admin

6. On clicking **EDIT** or **DELETE** button you can update or delete users.

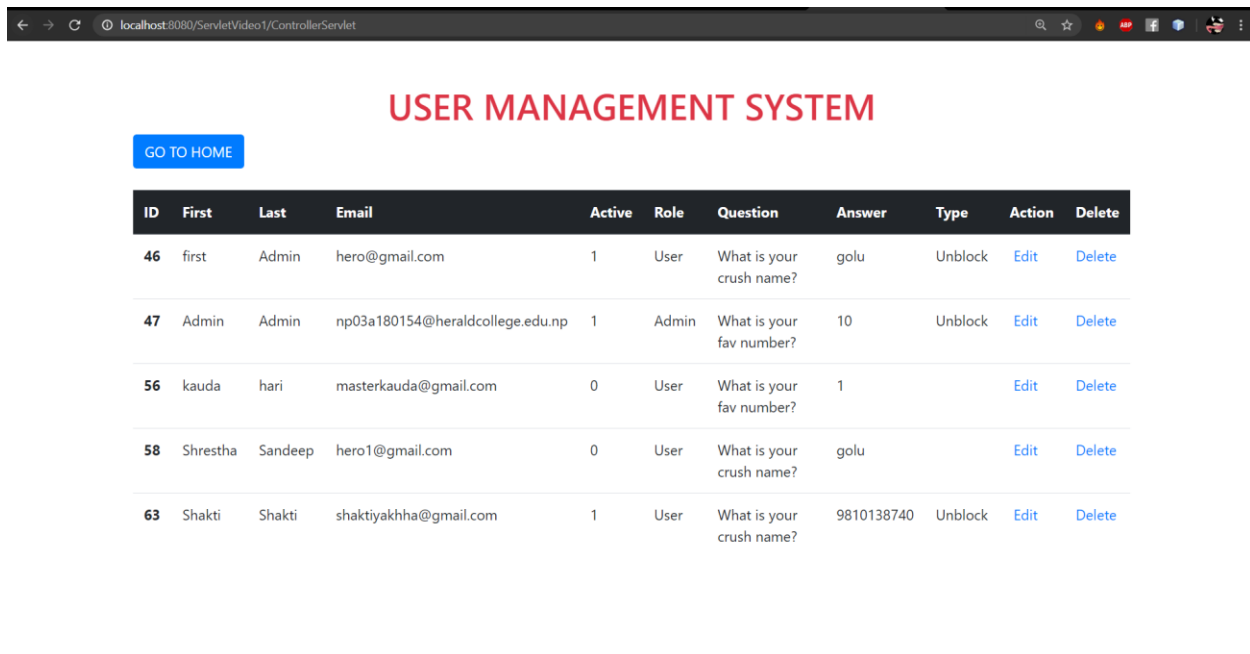
7. On clicking **EDIT** button you will be redirected to edit user page where you can edit user info of selected user.

Update user details

1	First Name	<input type="text" value="first"/>
2	Last Name	<input type="text" value="Admin"/>
3	Email	<input type="text" value="hero@gmail.com"/>
4	Password	<input type="text" value="Edit here"/>
5	Active	<input type="text" value="1"/>
6	Security Question	<input type="text" value="What is your crush name?"/>
7	Answer	<input type="text" value="golu"/>
8	Type(Block/Unblock)	<input type="text" value="Unblock"/>

Figure 29 Update user details by Admin

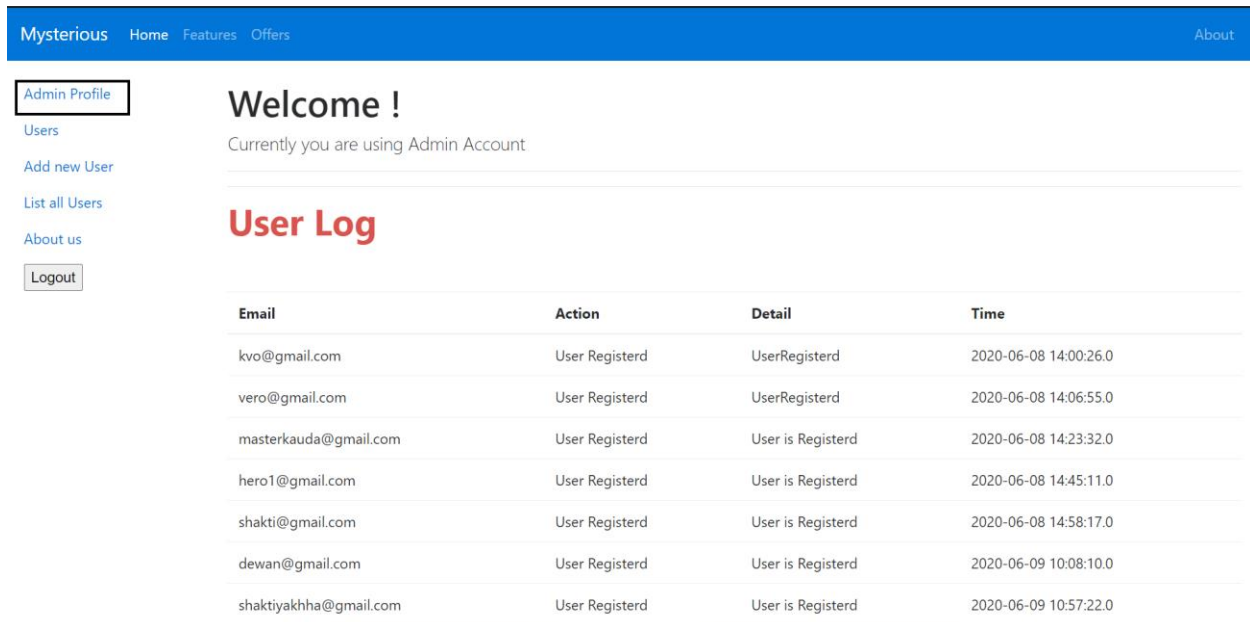
8. You can also block/unblock user just simply clicking **BLOCK/UNBLOCK** button.



ID	First	Last	Email	Active	Role	Question	Answer	Type	Action	Delete
46	first	Admin	hero@gmail.com	1	User	What is your crush name?	golu	Unblock	Edit	Delete
47	Admin	Admin	np03a180154@heraldcollege.edu.np	1	Admin	What is your fav number?	10	Unblock	Edit	Delete
56	kauda	hari	masterkauda@gmail.com	0	User	What is your fav number?	1		Edit	Delete
58	Shrestha	Sandeep	hero1@gmail.com	0	User	What is your crush name?	golu		Edit	Delete
63	Shakti	Shakti	shaktiyakhha@gmail.com	1	User	What is your crush name?	9810138740	Unblock	Edit	Delete

Figure 30 User list for Admin

9. On clicking on **PROFILE** button you can view your profile detail.



Email	Action	Detail	Time
kvo@gmail.com	User Registerd	UserRegisterd	2020-06-08 14:00:26.0
vero@gmail.com	User Registerd	UserRegisterd	2020-06-08 14:06:55.0
masterkauda@gmail.com	User Registerd	User is Registerd	2020-06-08 14:23:32.0
hero1@gmail.com	User Registerd	User is Registerd	2020-06-08 14:45:11.0
shakti@gmail.com	User Registerd	User is Registerd	2020-06-08 14:58:17.0
dewan@gmail.com	User Registerd	User is Registerd	2020-06-09 10:08:10.0
shaktiyakhha@gmail.com	User Registerd	User is Registerd	2020-06-09 10:57:22.0

Figure 31 Profile for Admin

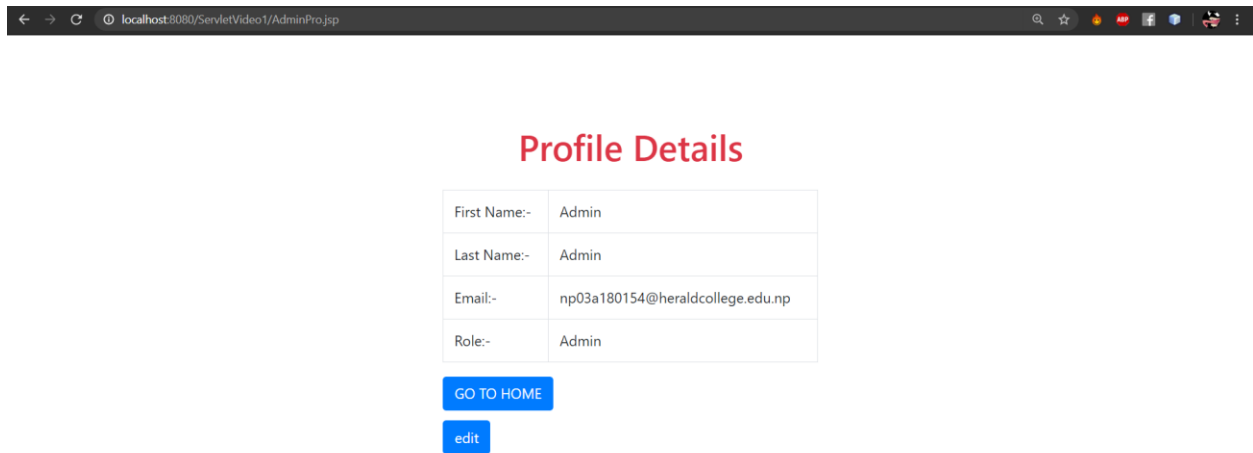


Figure 32 Profile Details for Admin

10. If you have to update your profile then click on **EDIT** button and enter new info and click **UPDATE** button.

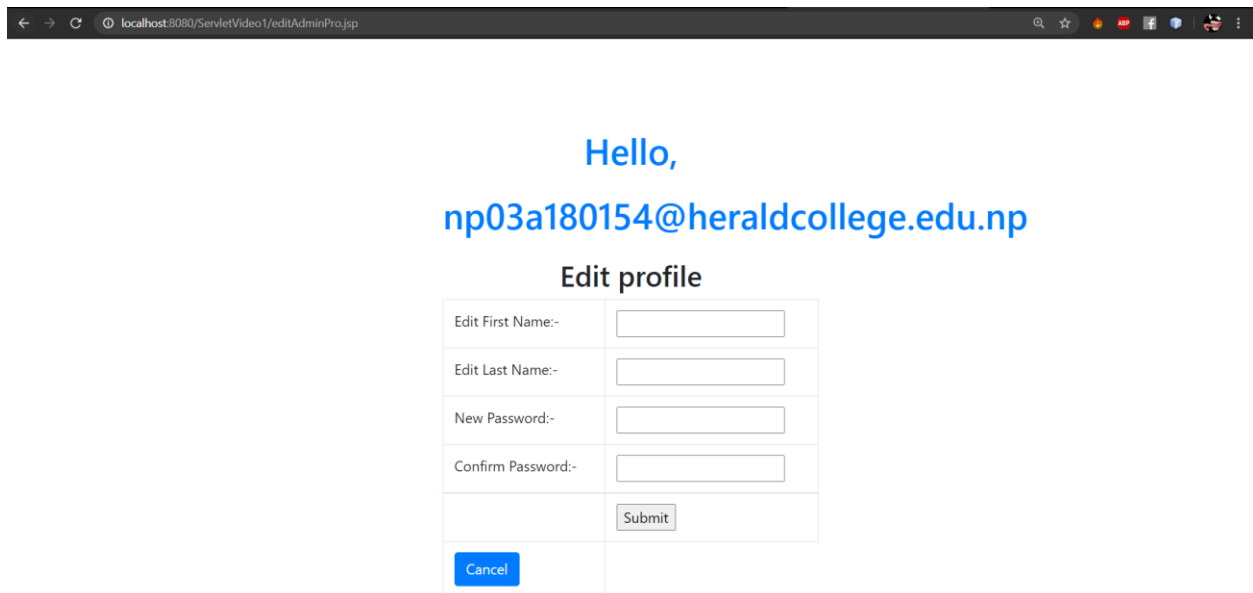
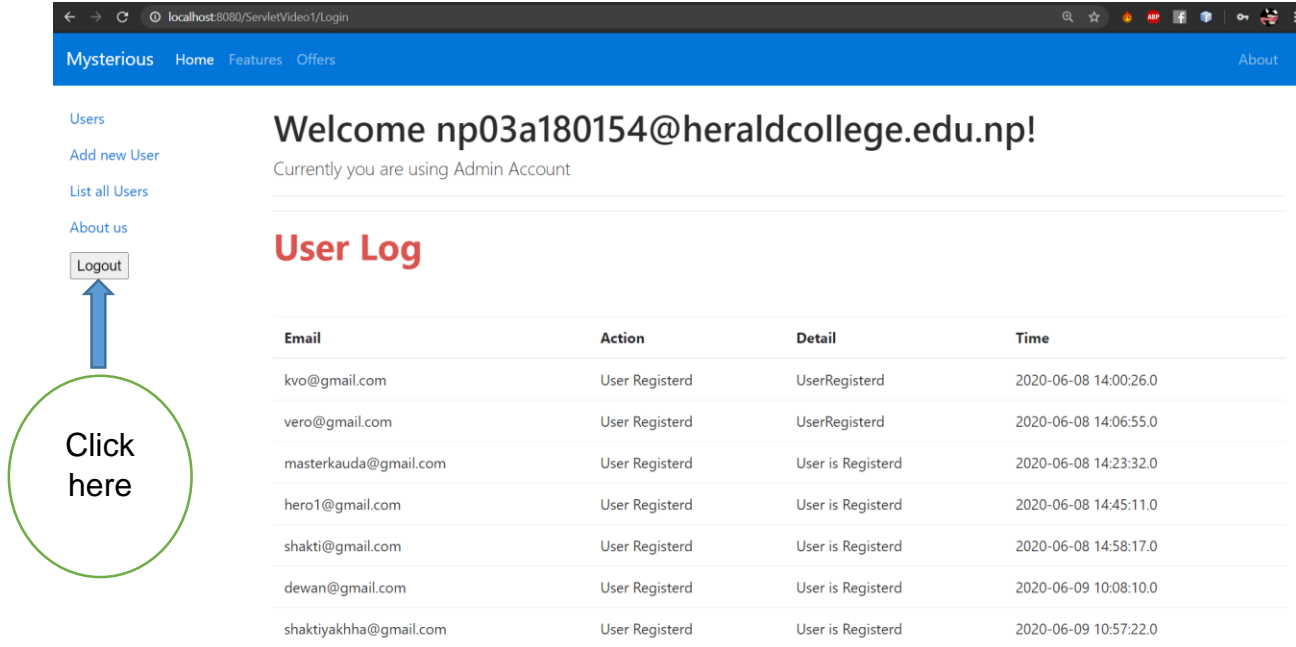


Figure 33 Edit Profile For admin

11. If you are done with all work your click **LOGOUT** button to logout from the system.



The screenshot shows a web application interface. On the left, there is a sidebar with links: 'Users', 'Add new User', 'List all Users', 'About us', and a 'Logout' button. The 'Logout' button is highlighted with a green circle and an arrow pointing to it, with the text 'Click here' inside the circle. The main content area shows a welcome message: 'Welcome np03a180154@heraldcollege.edu.np!' and 'Currently you are using Admin Account'. Below this is a section titled 'User Log' containing a table with user activity logs.

Email	Action	Detail	Time
kvo@gmail.com	User Registerd	UserRegisterd	2020-06-08 14:00:26.0
vero@gmail.com	User Registerd	UserRegisterd	2020-06-08 14:06:55.0
masterkauda@gmail.com	User Registerd	User is Registerd	2020-06-08 14:23:32.0
hero1@gmail.com	User Registerd	User is Registerd	2020-06-08 14:45:11.0
shakti@gmail.com	User Registerd	User is Registerd	2020-06-08 14:58:17.0
dewan@gmail.com	User Registerd	User is Registerd	2020-06-09 10:08:10.0
shaktiyakhha@gmail.com	User Registerd	User is Registerd	2020-06-09 10:57:22.0

Figure 34 Logout for admin

5.2 Logging in as Client:

1. Enter the site URL (<http://localhost:8080/ums>) in your address bar and you will be shown the homepage. Click to **LOGIN** button.

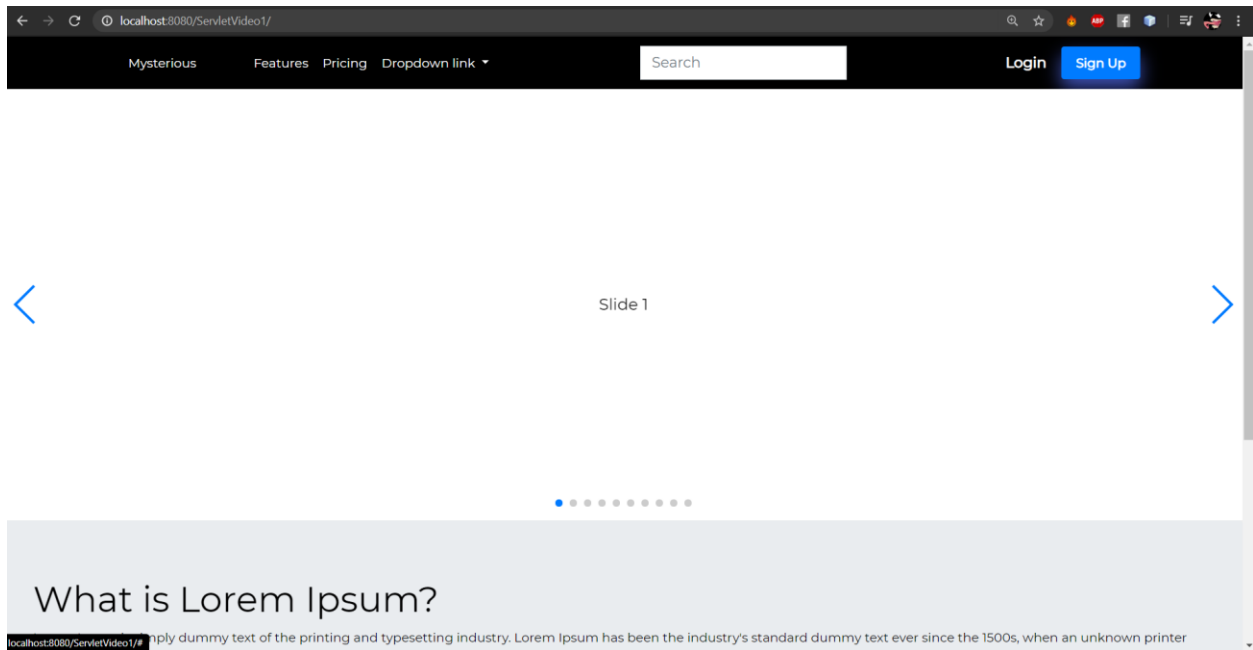


Figure 35 Index Page

2. If you are new to the system then click on **SIGN UP** button.

3. After clicking signup button registration form will be shown where you must enter all the fields as shown below. After that click on **Register** button.

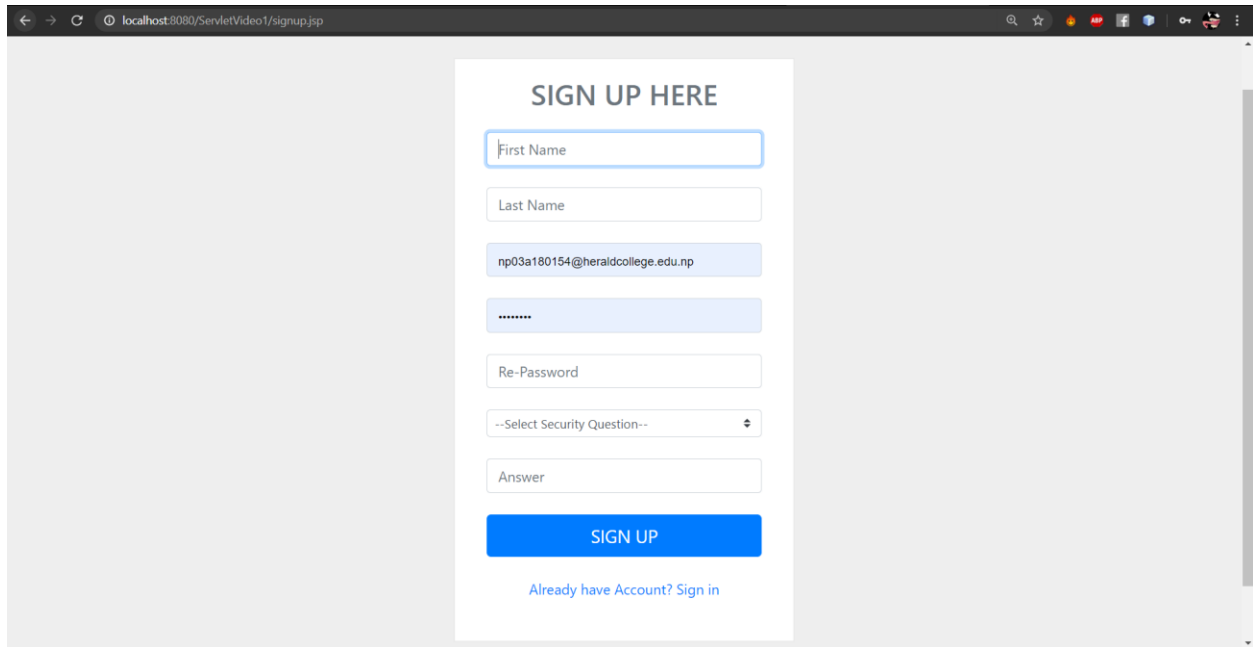
A screenshot of a web browser displaying a registration form titled "SIGN UP HERE". The form is centered on a light gray background. It contains several input fields: "First Name", "Last Name", an email field with the value "np03a180154@heraldcollege.edu.np", a password field with masked characters "*****", a "Re-Password" field, a dropdown menu for "Select Security Question", and an "Answer" field. Below these fields is a prominent blue "SIGN UP" button. At the bottom of the form, there is a link that says "Already have Account? Sign in". The browser's address bar shows the URL "localhost:8080/ServletVideo1/signup.jsp".

Figure 36 Sign Up

4. If sign up is failed then you will be redirected to register page.

5. If sign up is success then you will be redirect to verification page and check your mail for verification. And CLICK on **VERIFY** link.



Figure 37 Sending Mail to User

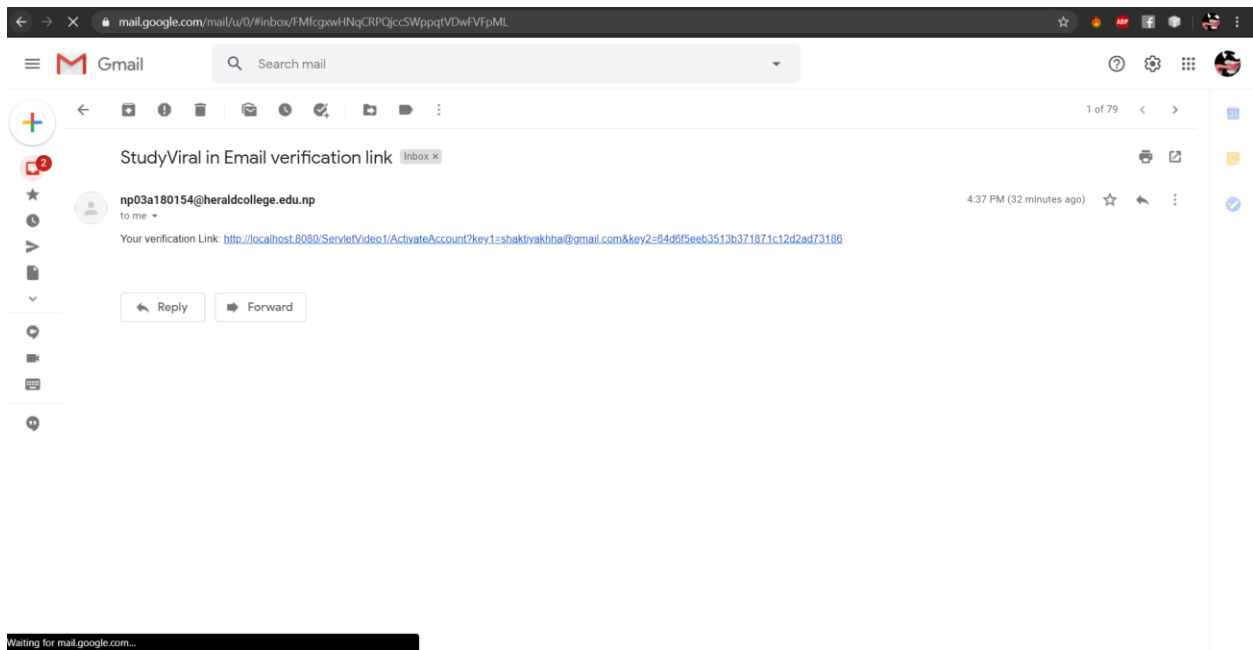


Figure 38 Verification of user

6. after that click on **LOGIN** button to login into the system.

7. To login into system, enter your email and password. And click **LOGIN** button.

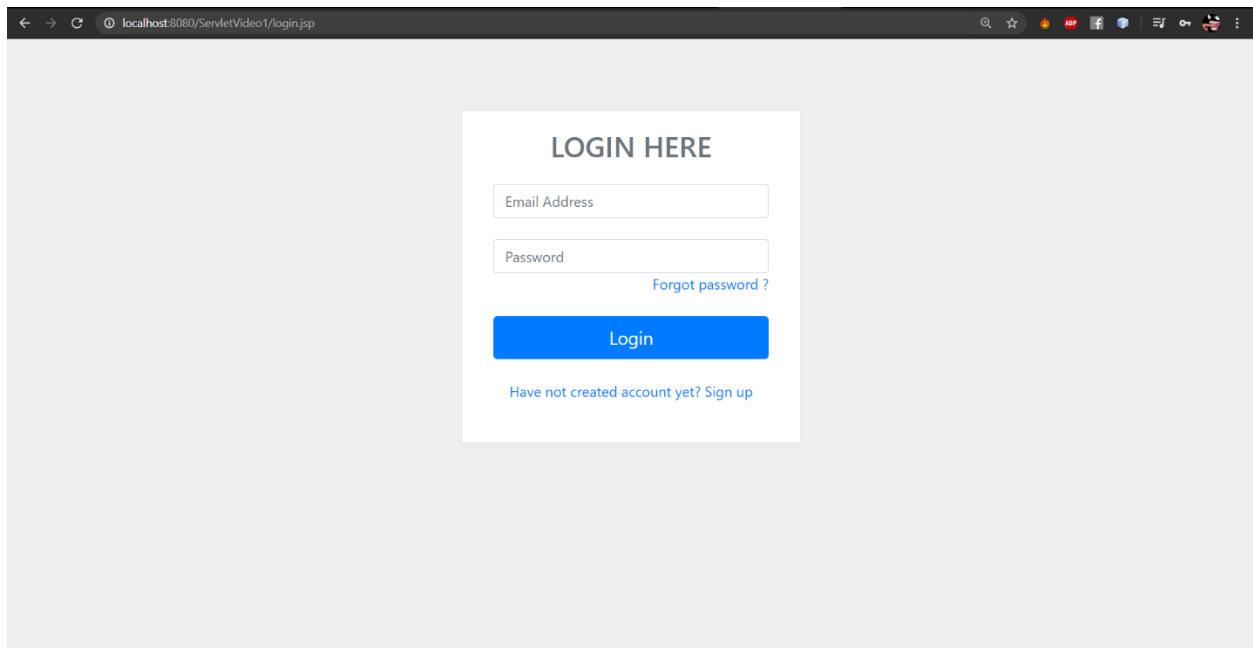


Figure 39 Login Page

8. After login, User dashboard will be shown like this.

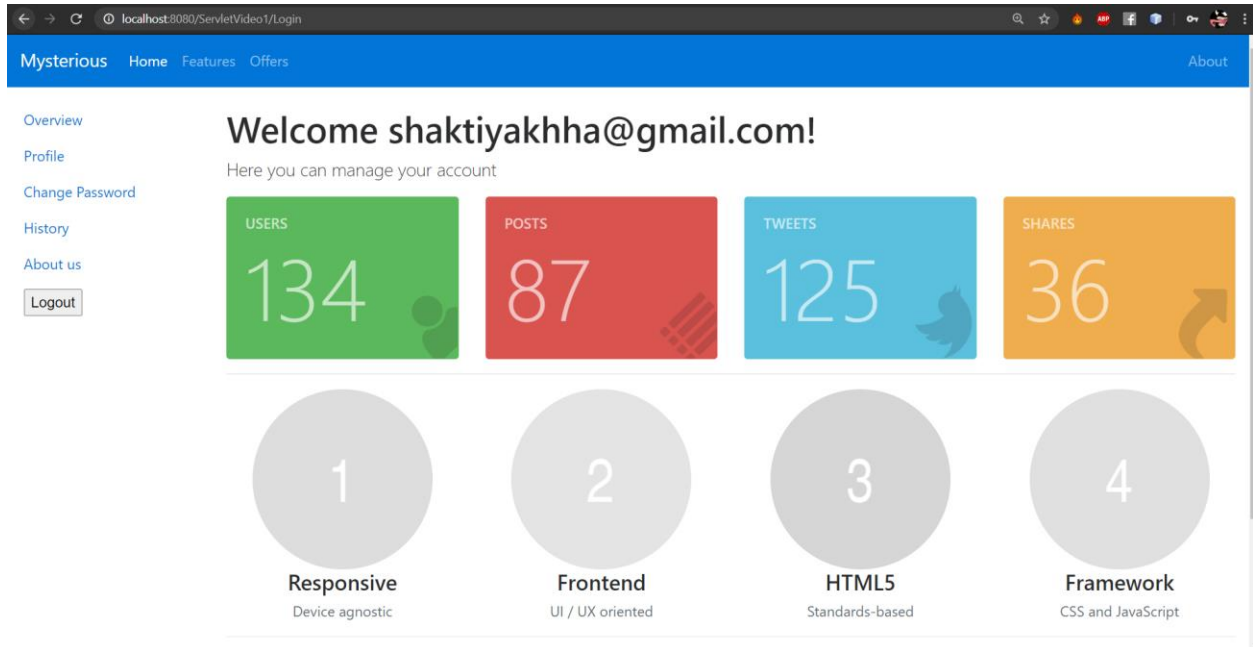
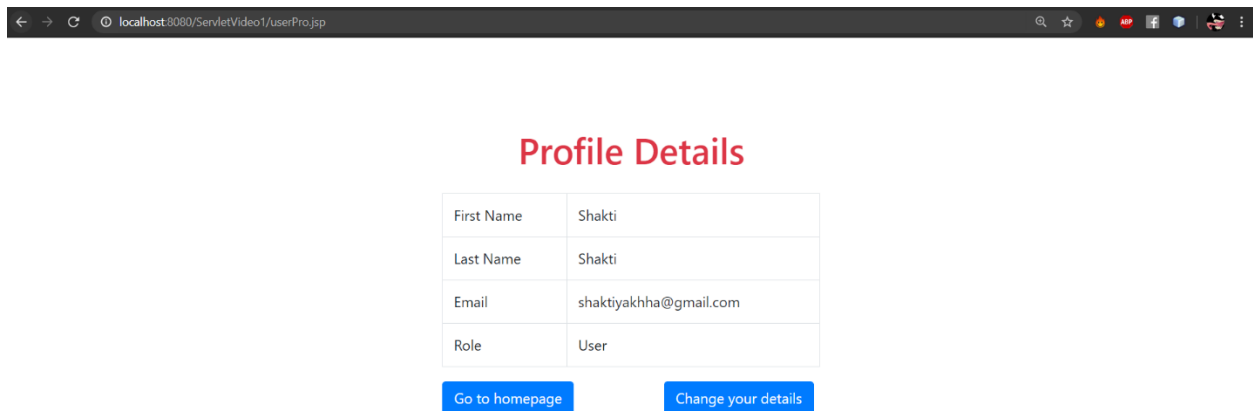


Figure 40 User's Dashboard

9. On clicking on **Profile** button you can view your profile details.



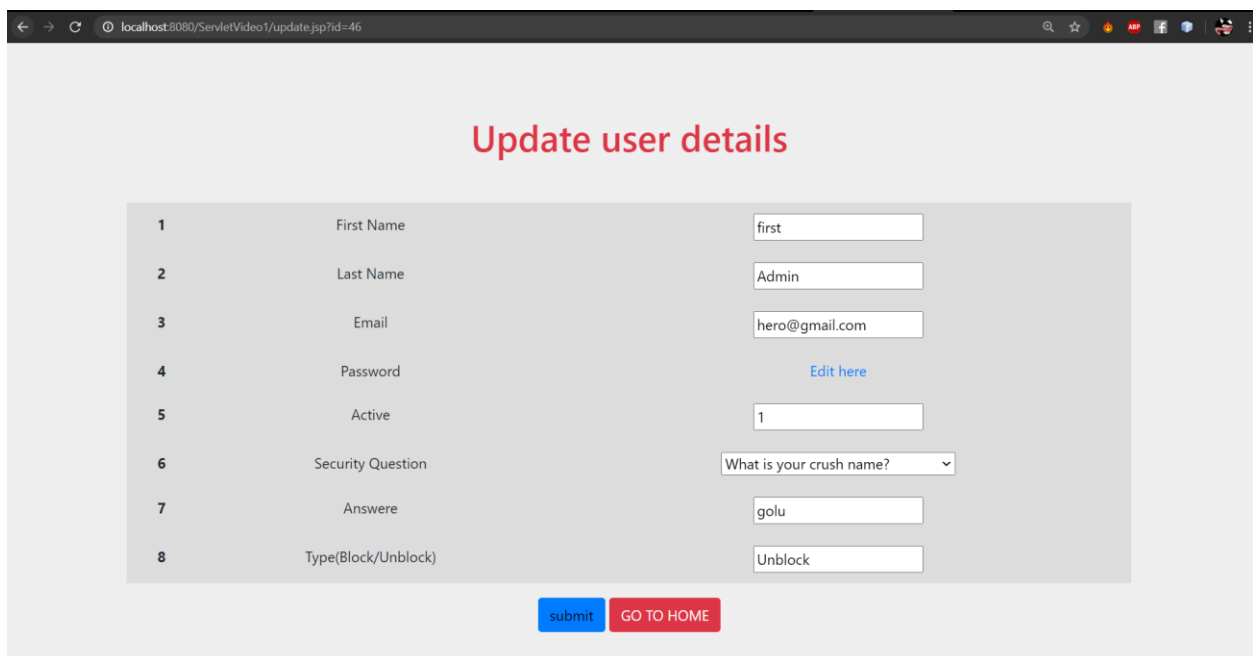
The screenshot shows a web browser window with the address bar displaying 'localhost:8080/ServletVideo1/userPro.jsp'. The page title is 'Profile Details' in red. Below the title is a table with the following details:

First Name	Shakti
Last Name	Shakti
Email	shaktiyakhha@gmail.com
Role	User

Below the table are two blue buttons: 'Go to homepage' and 'Change your details'.

Figure 41 Profile Details

10. If you have to update your profile then click on **edit** button and enter new info and click **update** button.



The screenshot shows a web browser window with the address bar displaying 'localhost:8080/ServletVideo1/update.jsp?id=46'. The page title is 'Update user details' in red. Below the title is a form with the following fields:

1	First Name	<input type="text" value="first"/>
2	Last Name	<input type="text" value="Admin"/>
3	Email	<input type="text" value="hero@gmail.com"/>
4	Password	Edit here
5	Active	<input type="text" value="1"/>
6	Security Question	<input type="text" value="What is your crush name?"/>
7	Answer	<input type="text" value="golu"/>
8	Type(Block/Unblock)	<input type="text" value="Unblock"/>

Below the form are two buttons: 'submit' (blue) and 'GO TO HOME' (red).

Figure 42 Update User Details

11. You can also view your history log by clicking on **HISTORYLOG**.

History

#	Email	Action	Detail	Time
1	shaktiyakhha@gmail.com	User Registered	User is Registered	2020-06-09 10:57:22.0

©2020 Mysterious

Figure 43 History

12. If you are done with all work your click **LOGOUT** button to logout from the system.

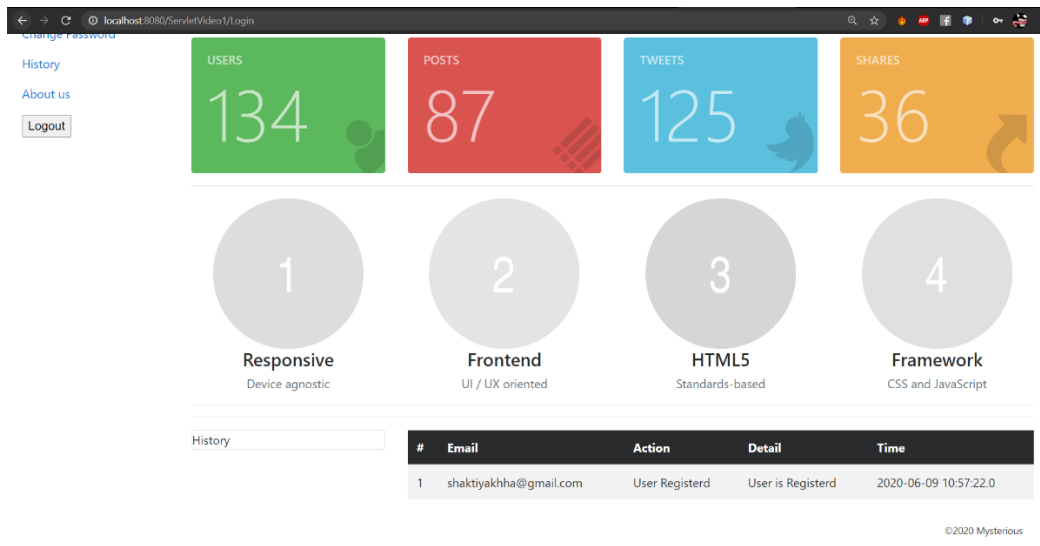


Figure 44 Log out

13. In case you forgot password then GOTO login page and click on **FORGOT PASSWORD?** Link.

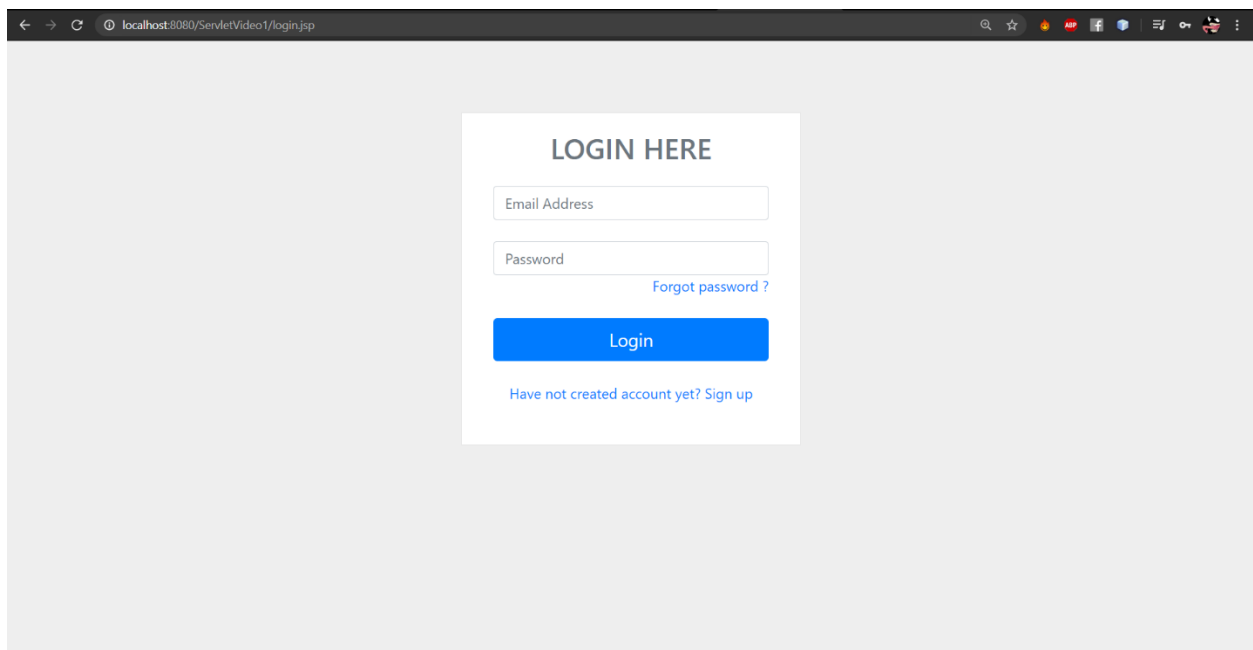


Figure 45 Login Page

14. After that you will be redirected to forgot password page. Here you must choose same security question (same during sign up) and must give same answer (same during sign up time) of it. And **CLICK ON SUBMIT** button.

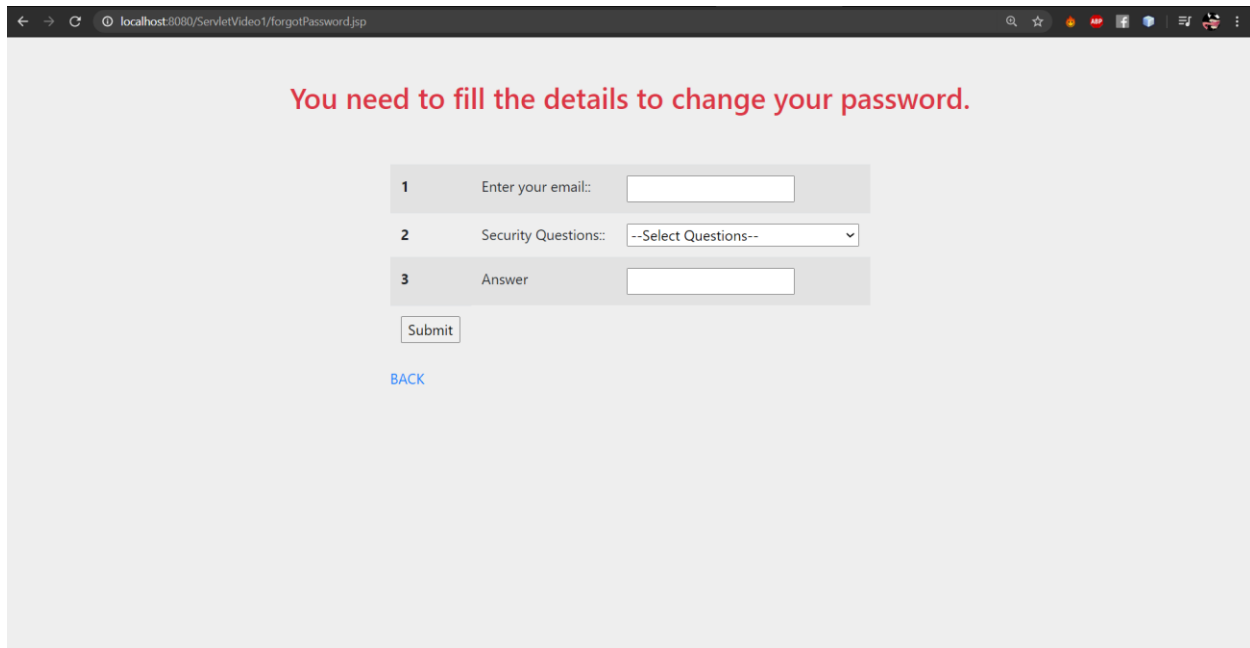
A screenshot of a web browser showing a forgot password page. The browser's address bar displays 'localhost:8080/ServletVideo1/forgotPassword.jsp'. The page has a light gray background. At the top, a red heading reads 'You need to fill the details to change your password.' Below this, there are three numbered steps: 1. 'Enter your email:' with a text input field. 2. 'Security Questions:' with a dropdown menu showing '--Select Questions--'. 3. 'Answer' with a text input field. A 'Submit' button is located below the answer field. At the bottom left, there is a blue 'BACK' link.

Figure 46 Forgot Password

15. If both question and answer are matched then you will be redirected to Reset Password page. Here you must enter new password and confirm password then **CLICK ON SUBMIT** Button.

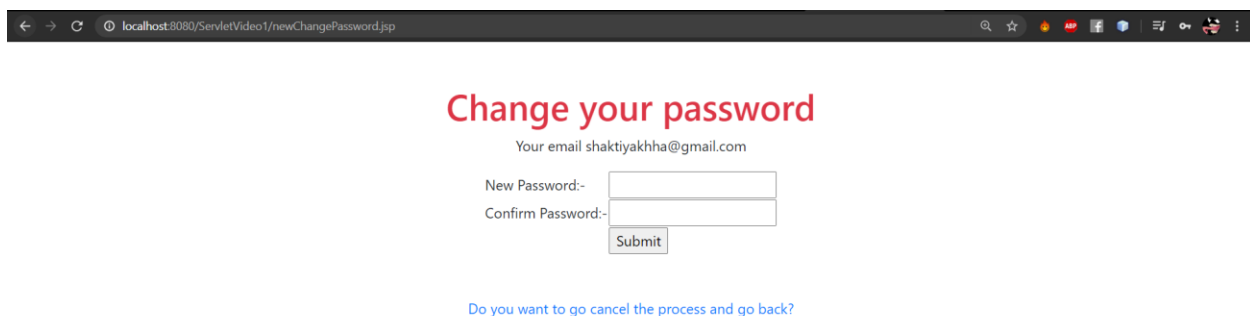
A screenshot of a web browser showing a change password page. The browser's address bar displays 'localhost:8080/ServletVideo1/newChangePassword.jsp'. The page has a light gray background. At the top, a red heading reads 'Change your password'. Below the heading, the email 'Your email shaktiyakhha@gmail.com' is displayed. There are two input fields: 'New Password:-' and 'Confirm Password:-'. A 'Submit' button is located below the confirm password field. At the bottom, there is a blue link that reads 'Do you want to go cancel the process and go back?'.

Figure 47 Change your password



Figure 48 Password Changed

16. After that you can login into the system.

5.3 Viewing homepage as a guest:

Enter the site URL (<http://localhost:8080/ums>) in your address bar and you will be shown the homepage. If you want to be a user of this system you can sign up then login into system.

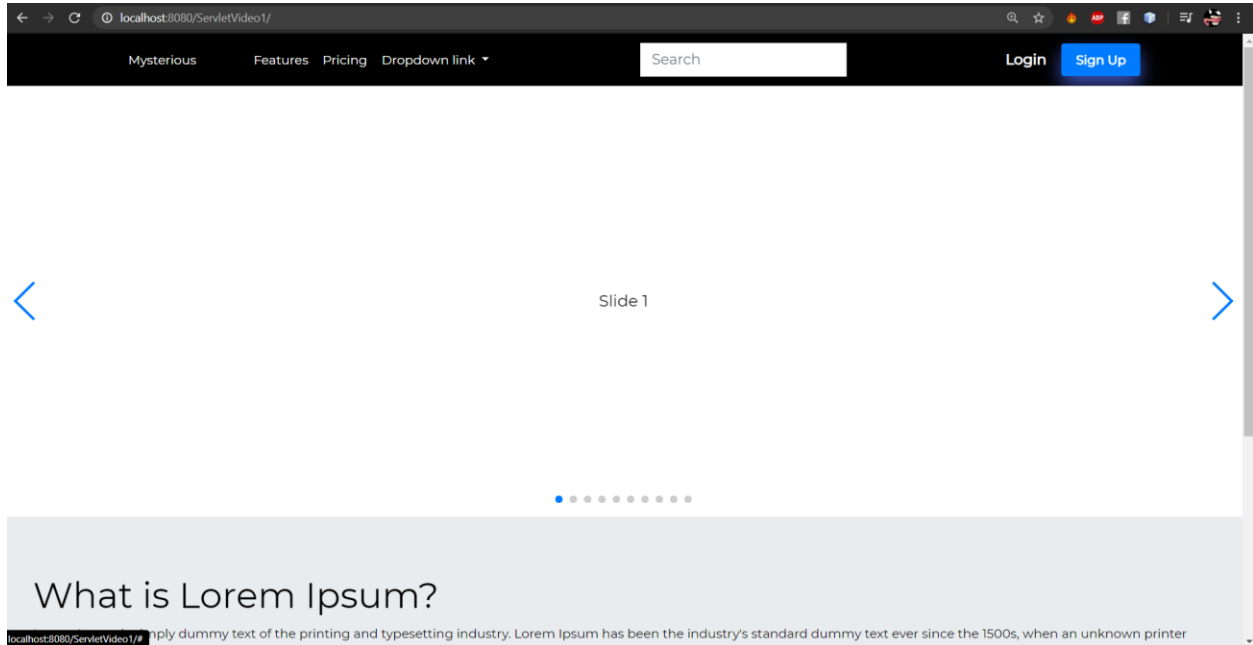


Figure 49 Index Page

6. Chapter 6: Testing and Evaluation

6.1 Testing of the application:

6.1.1 White box Testing:

Test cases written by Junit:

- Login : testing for blank email, role, length of password

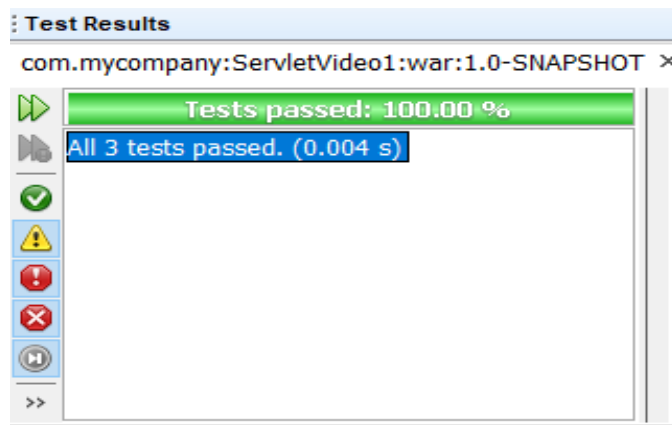


Figure 50 Testing For Login

- Register : testing for blank registration, registration

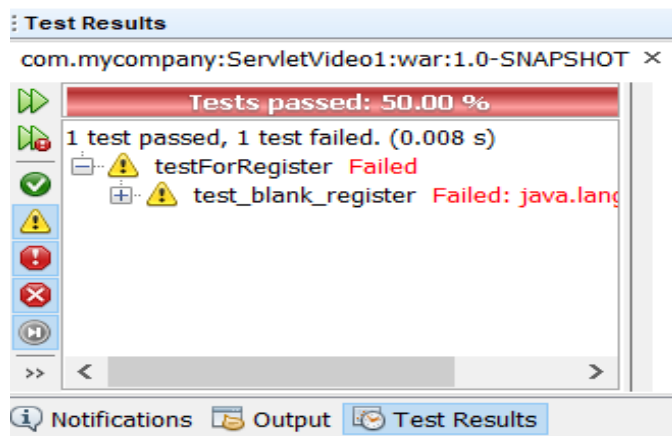


Figure 51 Testing For Register

- Forgot Password: testing for checking email, question and answer

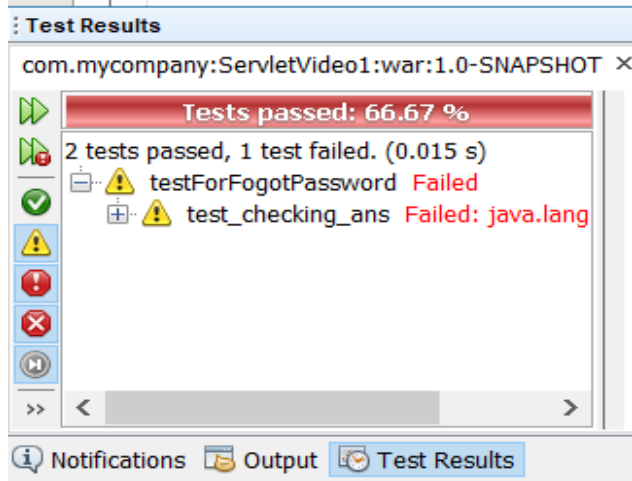


Figure 52 Testing For Forgot Password

- User : testing for getting id and email and answer

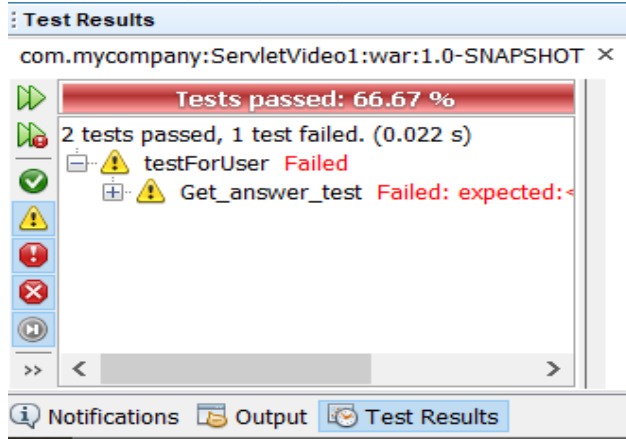


Figure 53 Testing For User

- History : testing for actions and history by user's email

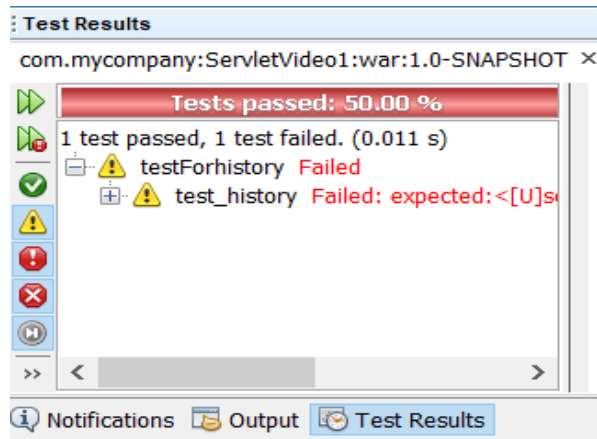


Figure 54 Testing For History

6.1.2 Black box Testing:

UserSt oryID	TestC aseID	Title	Descri ption	TestS tep	TestData	EXPECTED RESULT	POSTCON DITION	ACT UAL RES ULT	STA TUS
US001	TS-1	Login	Testin g login for Admin	1. Acce ss the softw are	username: admin password:****	successfully login	Land on admin's home page	pas s	TR UE
	TS-2			2.logi n Scre en appe ars	username: "" password: ""	Error Message will be shown.	Land on Login page	pas s	TR UE
	TS-3			3.Ent er the usern ame and pass word 4. Click on the login butto n	username: admin1 password:****	Error Message will be shown: "Invalid Username"	Land on Login page	pas s	TR UE

	TS-4	Logout	Testin g logout for	1. Clic k on logou t butto n	N/A	Successfull y logout	Lands on Login page	pas s	TR UE
US002				1. Go to User page 2. User table appe ars 3. Click on searc h bar 4. Enter user name 5. Click on searc h butto m					
	TS-5				Search user: Ram	List of users whose name is "Ram"	Land on user page		
				1. Go to User page 2. User table apper s 3. Click on sort by butto n 4. Selec t sort optio n					
	TS-6	View Users	Testin g view page for Admin and searc h users		Sort by : name Sort by: date	List of users by Name in accending List of users by date (recentlly added users)	Land on user page		
US003	TS-7	Create new user	Admin will create	1.Go to URL// :	Username:"use r1" Full Name:"Ram	Account created successfully	Redirect to same page.	pas s	TR UE

			new users.	2. Enter username	Rai" Date of Birth:"2057-12-12"				
				3. Enter Fullname	Address:"Chakrapath,Ktm" Contact:9810178410				
				4. Enter DOB	Gender:"Male" user_type:user				
	TS-8			5. Enter password	password:***** confirm password:*****				
				6. Enter Contact	Username:"user1" Full Name:"Ram Rai"	Error Message will be shown: "Password doesn't match"	Redirect to same page.	pas s	TR UE
				7. Enter Gender	Date of Birth:"2057-12-12" Address:"Chakrapath,Ktm"				
	TS-9			8. Enter user_type	Contact:9810178410 Gender:"Male" user_type:user				
				9. Enter password	password:***** confirm password:*****				
				10. Enter confirm password	Username:"admin" Full Name:"Ram Rai"	Error Message will be shown: "username already taken"	Redirect to same page.	pas s	TR UE
				11. Click on Sign Button	Date of Birth:"2057-12-12" Address:"Chakrapath,Ktm" Contact:9810178410 Gender:"Male" user_type:user				
US004	TS-10	Edit Email of user	Admin will edit email of user	1. Go to URL// : 2. Select user 3.	Email:XYZ@gmail.com New Email: ABC@gmail.com Email:ASD@gmail.com	Sucessfully changed Error Message will be shown: "Email is	Redirect to same page	pas s	TR UE

				Click on edit button 4. Click on edit email bar 5. Update email 6. Click save button	New Email: XYZ@gmail.com	already used"			
US005	TS-11	Change the role of users	Admin will change role of users	1. Go to URL// : 2. Select user 3. Click on edit button 4. Click on edit Role bar 5. Update role 6. Click save button	Role: user New Role: admin	Sucessfully changed Recorded in history log.	Redirect to same page	pas s	TR UE
US006	TS-12	Change password of users	Admin will change password of user	1. Go to URL// : 2. Select user 3.	Current password:***** ** New password: ***** Confirm password: *****	Sucessfully change	Redirect to same page	pas s	TR UE

				Click on edit button 4. Click on edit password bar 5. Update password 6. Click save button	Current password:***** ** New password:***** Confirm password:*****	Error message will be shown "Password unmatched"			
US007	TS-13	Reset password of users	Admin will reset password if users forget old password.	1. Go to URL// : 2. Select user 3. Click on edit button 4. Click on edit password bar 5. reset password 6. Click save button	Current password:***** New password: "User123"	Successfully password reset	Redirect to same page	password	TRUE
US008	TS-14	Disable user	Admin will disable user for	1. Go to URL// : 2.	disable user	User is disabled temporarily	Redirect to same page	password	TRUE

			temporarily	Select user 3. Click on disable button 4. Click save button					
US009	TS-15	enable user	Admin will enable user	1. Go to URL// : 2. Select user 3. Click on enable button 4. Click save button	Enable user	User is enable.	Redirect to same page	pass	TRUE
US0010	TS-16	Remove user	Admin will remove user	1. Go to URL// : 2. Select user 3. Click on remove button 4. Click save button	username="ram"	User is removed.	Redirect to same page. Go to database check user table. select * from user where username="ram" this record should not be found	pass	TRUE
US0011	TS-17	History log	Admin will view history	1. Go to URL// :	username="sita 12"	List of activities performed	Land on History page.	pass	TRUE

			of users	2. Navigate to User table 3. Select user 4. Click on "history" button		by user.			
US0012	TS-18	Report	Admin will view report page of users	1. Go to URL/ : 2. Click on "Report" button 3. Select option 4. Choose the report format	Choose option: Weekly Choose option: Monthly Choose option: Annually	Graphical representation of data (Total user, active, inactive users) i.e. Pie chart	Land on Report page	pass	TRUE
USC001	TS-19	Register	Client will register	1. Go to sign up page 2. Enter username 3. Enter Fullname 4. Enter DOB 5. Enter Address	username: Ram fullname: ram limbu DOB: 2055-02-25 Address: Chakrapath contact: 98552555 Gender: Male user_type: user password: shsh confirm password: shsh	Successfully registered	Land on Login page	pass	TRUE

				ress 6.Ent er Cont act 7.Ent er Gend er 8.Ent er user_ type 9.Ent er pass word 10.E nter confir m pass word 11.Cli ck on Sign Butto n					
USC0 02				1. Go to login page 2.logi n Scre en appe ars 3.Ent er the usern ame and pass word 4. Click on the login butto n					
	TS-20	Login/L ogout	Testin g login for user		username:Ram 123 password:***** ** username:"" password:""	Sucessfully logged in Error message will be shown: "Invalid username/p assword"	home page	pas s	TR UE
	TS-21	Login/L ogout	Testin g log out for user	1.Clic k on logou t	N/A	Sucessfully logged out	login page	pas s	TR UE

				button					
USC003	TS-22	Update email addresses	User can update their email address	1. Go to URL// 2. Click on profile info 3. Click on edit button 4. Click on edit email bar 5. Update email 6. Click save button	Email:XYZ@gmail.com New Email: ABC@gmail.com Email:ASD@gmail.com New Email: XYZ@gmail.com	Sucessfully changed Error Message will be shown: "Email is already used"	Redirect to same page	passwords	TRUE
USC004	TS-23	Recover account	User can recover their account if they forgot password	1. Go to login page 2. login Screen appears 3. Click on the forgot password button	Email: ABC@gmail.com **Send recovery code in given email** Code: 873654 New password:***** **	Sucessfully changed Error massege will be shown if code incorrect:"Invalid code"	Redirect to login page	passwords	TRUE

7. Chapter 7: Conclusion and Future Scope

7.1 Conclusion:

In conclusion, User Management System is a web application which have the functionality to create user account and manage account. In this web application user can create account and manage their account. There are mainly three types of users, they are Admin, Client, and Guest.

And at last it can be concluded that this project was a real experience. This project helped us in gaining valuable information and knowledge on several topics like Java web application, junit testing, database connectivity, CRUD operation and many more. During this course of assignment, we have gone through various obstacles. But thanks to our lecturer without the help of his guidance and internet we could not have our job done. After completing this assignment, we are very clear with all the basic java web application, Junit testing, database connectivity, and CRUD operation through web application which will be going to assist us in future.

7.2 Future Scope:

The future scope of this project is:

1. Adding more features like dealing with monitoring the information and transection of online.
2. Adding more types of users according to their roles.
3. Allowing users to add profile picture and more user information like age, phone, etc.
4. Allowing users to sign up using their Google or Facebook account using OAuth.
5. Using OTP (One-time password) based verification instead of security question.
6. Using JSON Web Tokens instead of sessions.

Contribution sheet:

Questions	Completion Date	Details	Contribution
1	2020-04-13	User Stories	Member 1,2,3,4: Member 1: User stories and acceptance criteria Member 2: User stories and acceptance criteria Member 3: Dependencies Member 4: Story points
		Acceptance Criteria	
		Dependencies	
		Story Points	
2	2020-04-16	Data Dictionary, according to the stories written	Member 1,2,3,4: Member 2: Wireframe Member 3: Mockups Member 1: Data dictionary Member 4: Mockups
		Mockup Design link to user stories	
3	2020-05-10	Implement the user stories written	Member 1,2,3,4: Member 1: forgot password, history, toast, validation and role based authentication Member 2: login, signup, sending email, homepage, logout Member 3: Add, delete, read ,update

			user, dashboard Member 4: Edit data, database connection, block, unblock , Front end
		Implementation according to user story	
		Proper output	
		Code Commenting	
		Design pattern used	
4	2020-04-28	Test case for every functionality according to the user stories written	Member 1,2,3: Member 1: Test cases for admin user stories. Member 3: Test cases for guest user stories Member 2: Junit unit testing, test cases for client user stories
5	2020-06-8	Documentation	Member 1,2,3,4: Member 1: Implementation, Conclusion and future scope, data dictionary, user manual, Gantt chart Member 2: Testing/evaluation and formatting ,contribution sheet, user manual Member 3: Full details of the artefact and Deployment guide, ERD, context diagram, class diagram, use case diagram, Member 4: Introduction, Development, implementation, plan/schedule. sequence diagram

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