

Project Report

Team-2: Workflow Management System for MNCs

Course: IT314 – Software Engineering

Project Abstract:

This project aims to increase the ease of managing workflow of firms, by having all the details of every project activity in the organization, consolidated at one place. The software empowers all the stakeholders of an organization, comprising project managers, employees, HR representatives, business owners, clients, coders and non-coders with a platform to easily build, deliver, monitor and maintain projects undertaken by the firm. The software features login and authentication-based access, with role-based access control. Features like various form elements, multiple project support, user notifications during various events, and DevOps integration have also been incorporated. A project manager can create the project workspace and add the project members, who then collaborate on that project. Every account has its own dashboard to monitor different aspects, and option to create projects. Company executives can simply login to the software, browse through the projects, see the various project status indicators, the people involved, and also add notes for people to see. This application not only helps the team to stay in sync but also allows the clients to see the progress, without having to wait for months before deployment. We also plan to incorporate drag and drop workflow management in the future.

Project Team Members:

Student ID	Student Name
201701006	Swarnaditya Maitra (Team Leader)
201701003	Jahnavi Gupta
201701010	Milan Nagariya
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201701036 ¹	Surpaneni Sri Akhil
201701043	Arex Jambusarwala
201701049	Shein Sopariwala
201701052	Rishi Sanghvi
201701066	Milek Agrawal
201701069	Phalguni Khudkhudia
201701071	Smit Patel
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¹ Not involved with the project at all.

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I - User Stories and acceptance criteria

No.	Front of Card	Back of Card
1	As a new user, I must be able to sign up/login so that I can access the project workspace.	<ul style="list-style-type: none"> ● If Successful, the user can access his existing project list and will get an option to either create a project or to join a project. ● If it doesn't work then, "Services not available, please try again" message will be displayed.
2	As a Company, I would like to have different avenues for the different employees so that I can assign role-based access to these users in the project workspace.	<ul style="list-style-type: none"> ● The Company / Person who is the creator of the project will have the right to change the access rights of different parts of the project workspace for different roles based on the requirement.
3	As a team leader, I should be able to create and launch new projects, so that I can organize all work.	<ul style="list-style-type: none"> ● All the signed-up users will have a right to create and launch a project and the creator will act as the team leader. ● Users will not be able to access the creator page unless he is signed in.
4	As a team leader, I should be able to authorize the employees who want to join my project, so that I have control on who is using the project workspace.	<ul style="list-style-type: none"> ● When someone attempts to join the project workspace using a unique project code, the team leader of the project will be notified and then he can decide whether to authorize the user or not. ● If authorization fails, then the person who is trying to join the project will not be able to access the content of the project.
5	As a team member, I should be able to see all the team members who are there in my project workspace so that I can know the role of each member and part of the project that they are working upon.	<ul style="list-style-type: none"> ● If a person is a team member, then he will be able to see the list of all team members working in the team, roles assigned to them and part of the project they are working on.
6	As a regular employee, I should have the option to add a new page to my project, so that I can select a view as per my requirements.	<ul style="list-style-type: none"> ● If the user is a part of the project team, he will be able to see the updated project workspace. ● The logged in team member will be notified about the changes in the project workspace.

		<ul style="list-style-type: none"> Updated views will not be shown if either user is not logged in or some failure occurs.
7	As a team leader, I want status (priority) indicator tags, so that I can prioritize the tasks.	<ul style="list-style-type: none"> Different tags indicating the importance of task can be added by the team leader along with the deadline. Other users can see the deadline and can work accordingly. All users will be notified about the priorities assigned and will also get notification before the deadline ends.
8	As a client, I should be able to view project workspace, so that I can provide my feedback on the work.	<ul style="list-style-type: none"> Clients can see the content but cannot edit anything. He can provide his feedback on the work going on and all the users will be notified about it.
9	As a stakeholder, I must be able to create and drop notes, so that I can convey my concerns and suggestions.	<ul style="list-style-type: none"> All the stakeholders other than the client will have access to the workspace. They can provide their feedback on the work going on and all the other users except the client will be notified about it.
10	As a designer, I need upload functionality because I need to share my design wireframes with the developers of my team.	<ul style="list-style-type: none"> All the uploaded designs will be in either png or jpg format. Users can see the design in the project workspace itself. If images are not fetched from the database then, "Error in fetching data from database. Please try again!" message will be shown.
11	As an HR, I should be able to assign/reassign/remove any team leader from any of the projects to ensure smooth functioning of the team.	<ul style="list-style-type: none"> HR can reassign the team leader but not the other team members.
12	As an HR, I should be able to view project workspace so that I can keep tabs on all the projects currently being undertaken by the company.	<ul style="list-style-type: none"> HR can see the content but cannot edit anything. He can provide his feedback on the work going on and all the users will be notified about it.
13	As a regular employee, I wish to be able to choose themes and reorganize pages so that I can customize my dashboard view.	<ul style="list-style-type: none"> Users can customize the view of the project workspace according to their choice but the changes will be limited to only his account. i.e. the view of other users will not be affected. All the devices with which the user is

		logged in will have the same theme
14	As a client, I need notifications as soon as each issue that was addressed in a note by me, is resolved or a milestone is reached.	<ul style="list-style-type: none"> When the issue is resolved by the concerned team member, he/she can send a notification to the client telling him about the changes done to resolve the issue.
15	As a regular employee, I need notifications whenever any changes to any tasks in which I am involved are made, so that I am updated about the project at all times.	
16	As a developer, I should have Git/Github integration so that the changes done in the project workspace are directly reflected on Github and vice-versa.	<ul style="list-style-type: none"> If authorization from github is successful, users can directly import the issues from github and the changes done on d3 will be reflected on github as well. If authorization fails, users will not have access to the project issues directly from github and in such case they will need to include the issues manually.
17	As a stakeholder, I should be able to access the website from multiple browsers, so that it's more convenient to use.	
18	As an investor, I need access to usage statistics, so that I can decide the amount to be invested.	
19	As a company, I need the tool to be scalable, so that many concurrent transactions can happen simultaneously.	<ul style="list-style-type: none"> If users are under maximum request limit, they will not experience huge delays in receiving the result. If the number of requests per minute exceeds the max. limit, user will get an error page.
20	As a company, I need the project data to be absolutely confidential, so that valuable info is not leaked.	
21	As a company, the downtime should not be more than 10 mins, so that workflow is not tangibly interrupted.	

II – Prioritization

For prioritizing our stories, we have used the **MoSCoW** technique. This is our grouping, based on it:

1) MUST HAVE:

- a) As a new user, I must be able to sign up/login so that I can access the project workspace.
- b) As a Company, I would like to have different avenues for the different employees so that I can assign role-based access to these users in the project workspace.
- c) As a team leader, I should be able to create and launch new projects, so that I can organize all work.
- d) As a team leader, I should be able to authorize the employees who want to join my project, so that I have a control on who is using the project workspace.
- e) As a client, I should be able to view project workspace, to provide my feedback on the work.
- f) As a regular employee, I should have the option to add a new page to my project, so that I can select a view as per my requirements.
- g) As a regular employee, I need notifications whenever any changes to any tasks in which I am involved are made, so that I am updated about the project at all times.
- h) As a company, I need the tool to be scalable, so that many concurrent transactions can happen simultaneously.
- i) As a company, I need the project data to be absolutely confidential, so that valuable info is not leaked.

2) SHOULD HAVE:

- a) As a team member, I should be able to see all the team members who are there in my project workspace so that I can know the role of each member and part of the project that they are working upon.
- b) As a team leader, I want status (priority) indicator tags, so that I can prioritize the tasks.
- c) As a stakeholder, I must be able to create and drop notes, so that I can convey my concerns and suggestions.
- d) As a designer, I need upload functionality because I need to share my design wireframes with the developers of my team.
- e) As an HR, I should be able to view project workspace so that I can keep tabs on all the projects currently being undertaken by the company
- f) As a client, I need notifications as soon as each issue that was addressed in a note by me, is resolved or a milestone is reached.
- g) As a stakeholder, I should be able to access the website from multiple browsers, so that it's more convenient to use.
- h) As a company, the downtime should not be more than 10 mins, so that workflow is not tangibly interrupted.

3) COULD HAVE:

- a) As a regular employee, I wish to be able to choose themes and reorganize pages so that I can customize my dashboard view.
- b) As an HR, I should be able to assign/reassign/remove any team leader from any of the projects to ensure smooth functioning of the team.
- c) As a developer, I should have Git/Github integration so that the changes done in the project workspace are directly reflected on Github and vice-versa.

4) WON'T HAVE:

- a) As an investor, I need access to usage statistics, so that I can decide the amount to be invested

III - Functional and Non-functional Requirements

Features (Functional Requirements)

1. Login and Authentication
2. Role-based access control
3. Multiple projects handling
4. Different dashboard views for different users
5. Form elements to be displayed on dashboard
6. Drag and drop workflow management
7. Status indicator tags
8. User notification based on events (triggers)
9. Devops Integration (Eg: Git)

Non-functional Requirements

1. Scalability (up to a few thousand users at a time)
2. Availability
3. Privacy and security for all data flows and communication
4. Real-time analytics
5. Should work on all browsers above IE8
6. Responsiveness: Appropriate display as per the screen, i.e., laptop, mobile, and tablet

IV - Classification of Sprints

FIRST SPRINT (19th Feb to 26th Feb)

1. As a new user, I must be able to sign up/login so that I can access the project workspace.
2. As a Company, I would like to have different avenues for the different employees so that I can assign role-based access to these users in the project workspace.
3. As a team leader, I should be able to create and launch new projects, so that I can organize all work.
4. As a team leader, I should be able to authorize the employees who want to join my project, so that I have a control on who is using the project workspace.
5. As a team member, I should be able to see all the team members who are there in my project workspace so that I can know the role of each member and part of the project that they are working upon.

SECOND SPRINT (7th March to 17th March)

1. As a regular employee, I should have the option to add a new page to my project, so that I can select a view as per my requirements.
2. As a team leader, I want status (priority) indicator tags, so that I can prioritize the tasks.

THIRD SPRINT (18th March to 22nd March)

1. As a client, I should be able to view project workspace, so that I can provide my feedback on the work.
2. As a stakeholder, I must be able to create and drop notes, so that I can convey my concerns and suggestions.
3. As a designer, I need upload functionality because I need to share my design wireframes with the developers of my team.
4. As an HR, I should be able to assign/reassign/remove any team leader from any of the projects to ensure the smooth functioning of the team.
5. As an HR, I should be able to view project workspace so that I can keep tabs on all the projects currently being undertaken by the company.

FOURTH SPRINT (23rd March to 28th March)

1. As a regular employee, I wish to be able to choose themes and reorganize pages so that I can customize my dashboard view.

2. As a client, I need notifications as soon as each issue that was addressed in a note by me, is resolved or a milestone is reached.
3. As a regular employee, I need notifications whenever any changes to any tasks in which I am involved are made so that I am updated about the project at all times.
4. As a stakeholder, I should be able to access the website from multiple browsers, so that it's more convenient to use.
5. As a company, I need the tool to be scalable, so that many concurrent transactions can happen simultaneously.
6. As a company, I need the project data to be absolutely confidential, so that valuable info is not leaked.
7. As a company, the downtime should not be more than 10 mins, so that workflow is not tangibly interrupted.

FIFTH SPRINT (29th March to 2nd April)

1. As a developer, I should have Git/Github integration so that the changes done in the project workspace are directly reflected on Github and vice-versa.
2. As an investor, I need access to usage statistics, so that I can decide the amount to be invested.

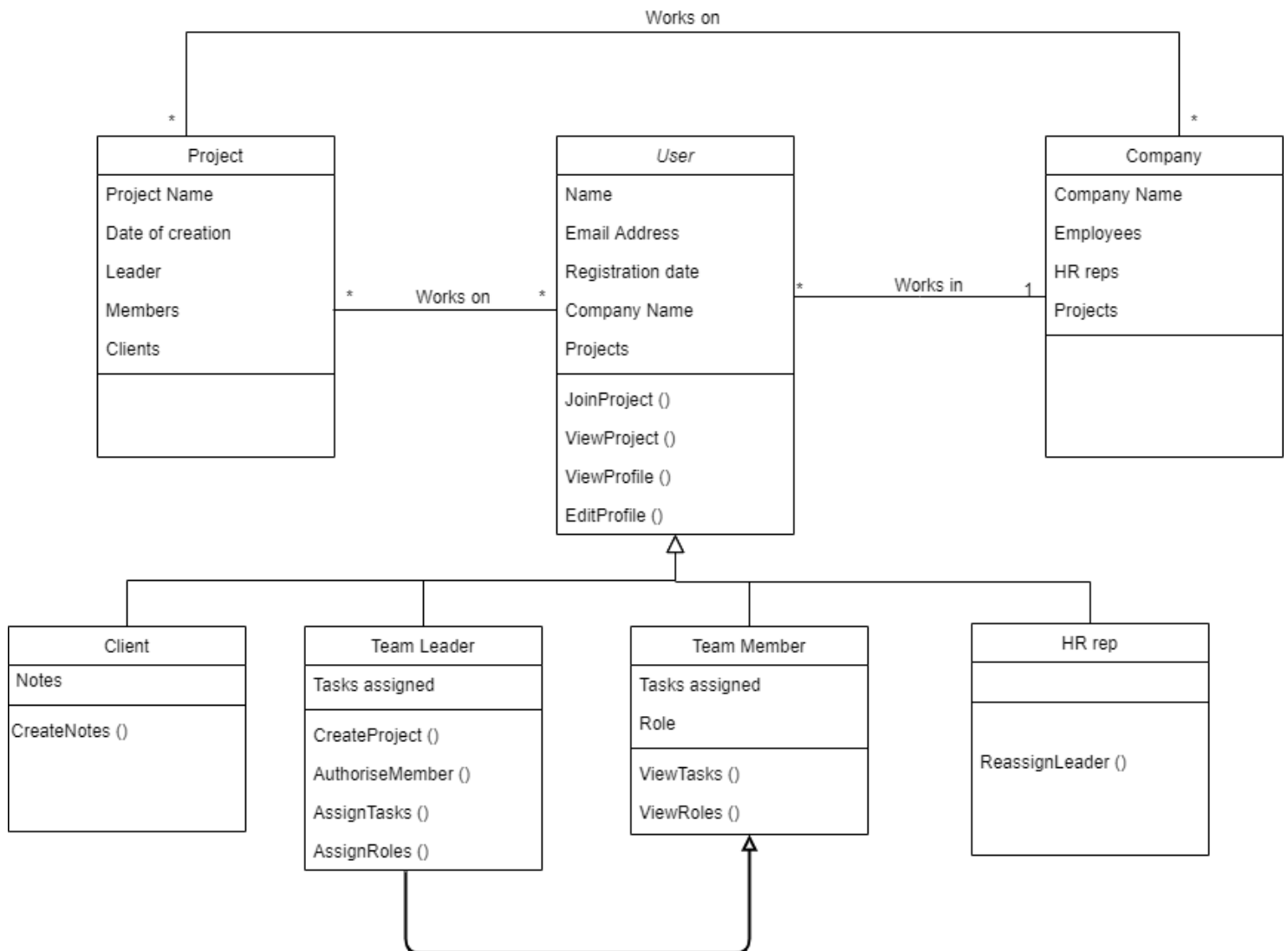
SIXTH SPRINT (3rd April to 7th April)

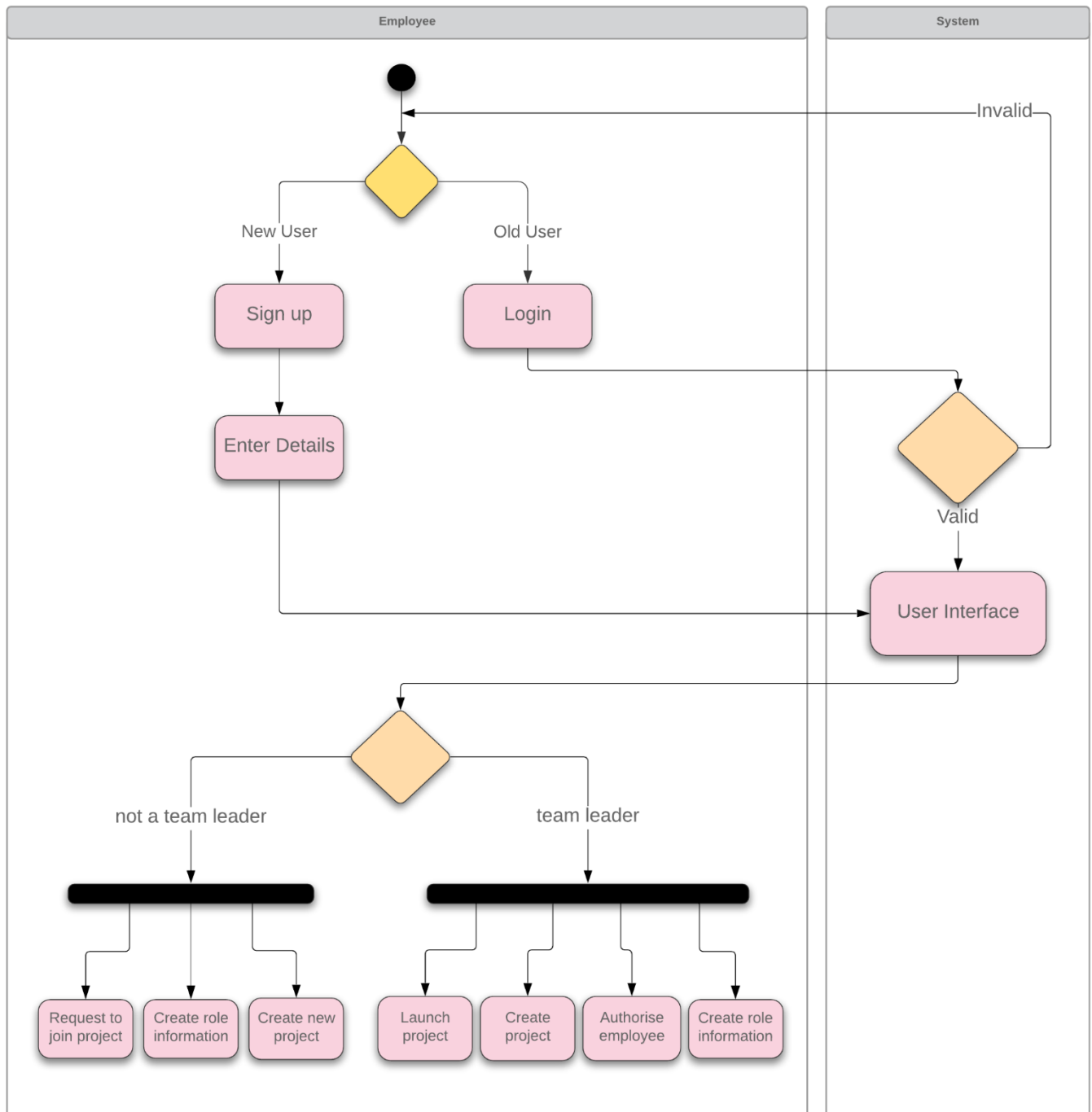
1. Testing and Deployment
-

V - Class and Activity diagrams

Sprint 1

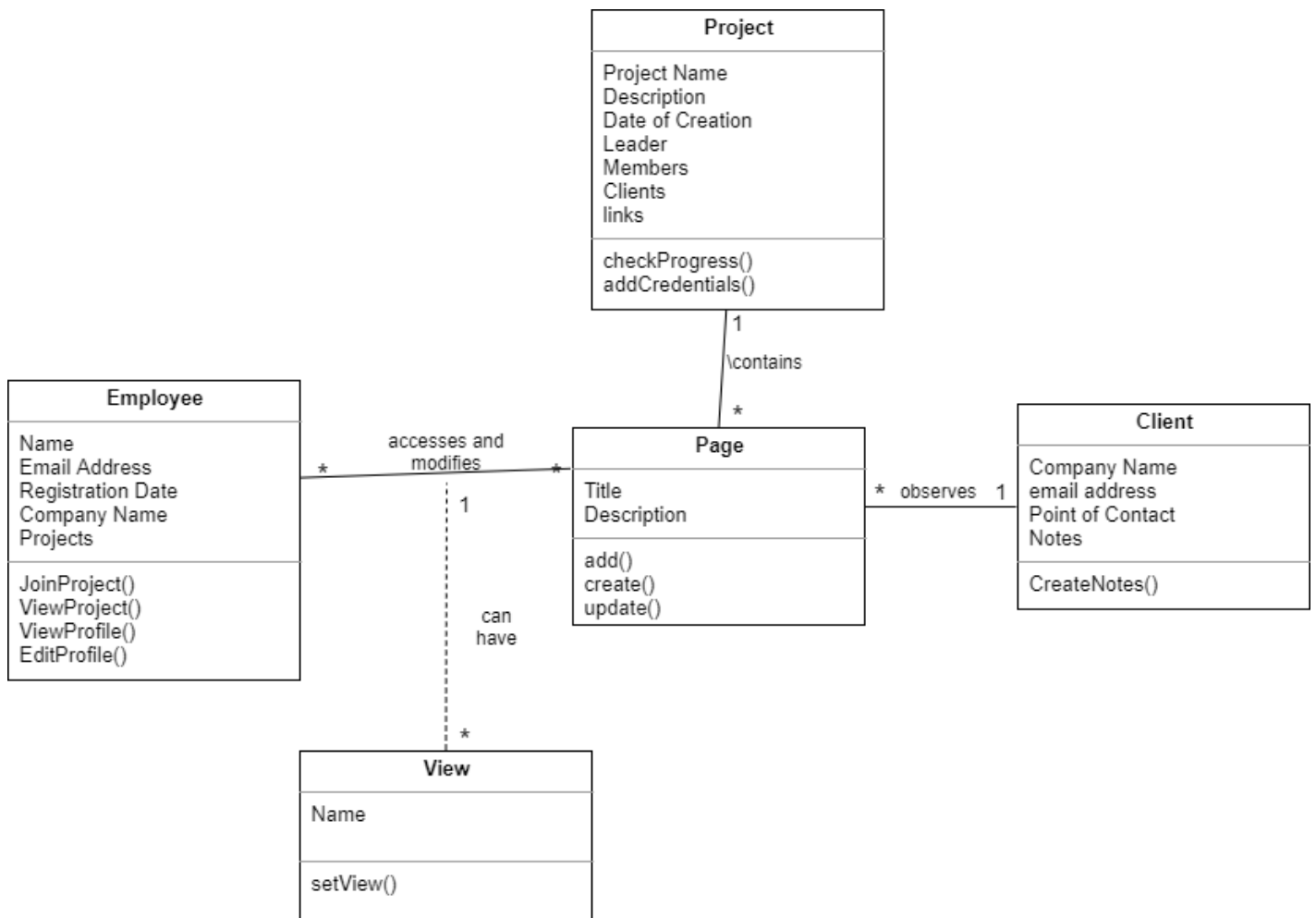
a) Class Diagram for Sprint-1



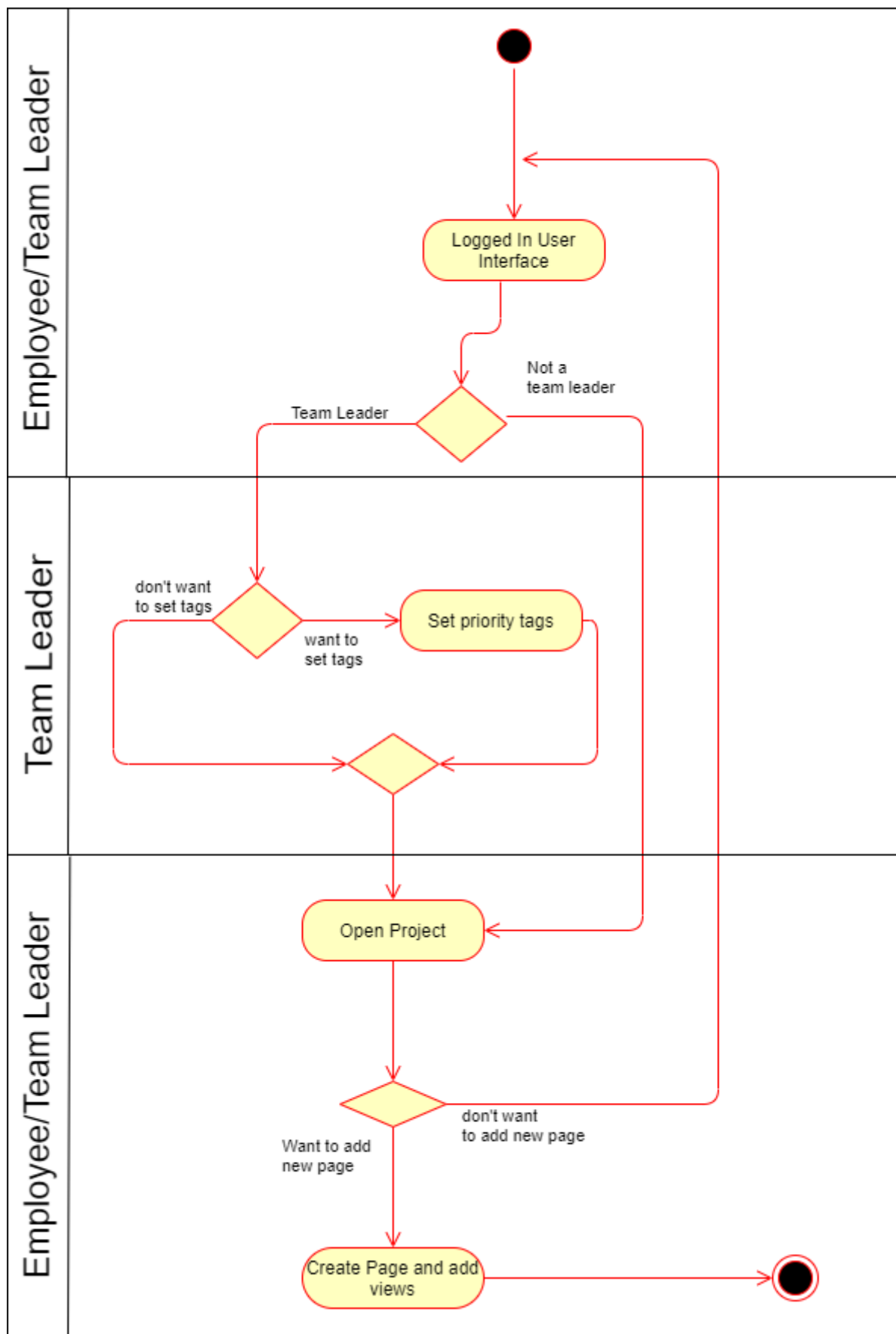
b) Activity diagram for Sprint 1

Sprint 2

a) Class Diagram for Sprint-2

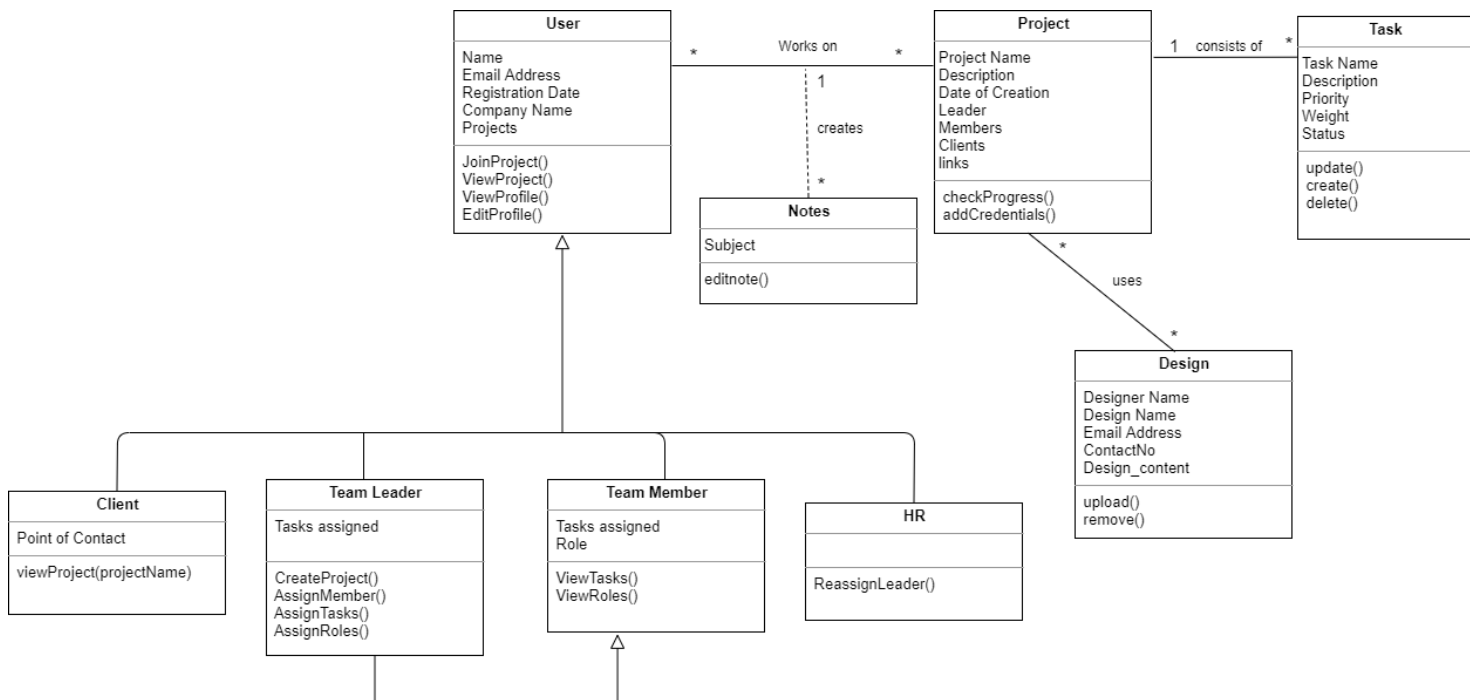


b) Activity Diagram for Sprint-2

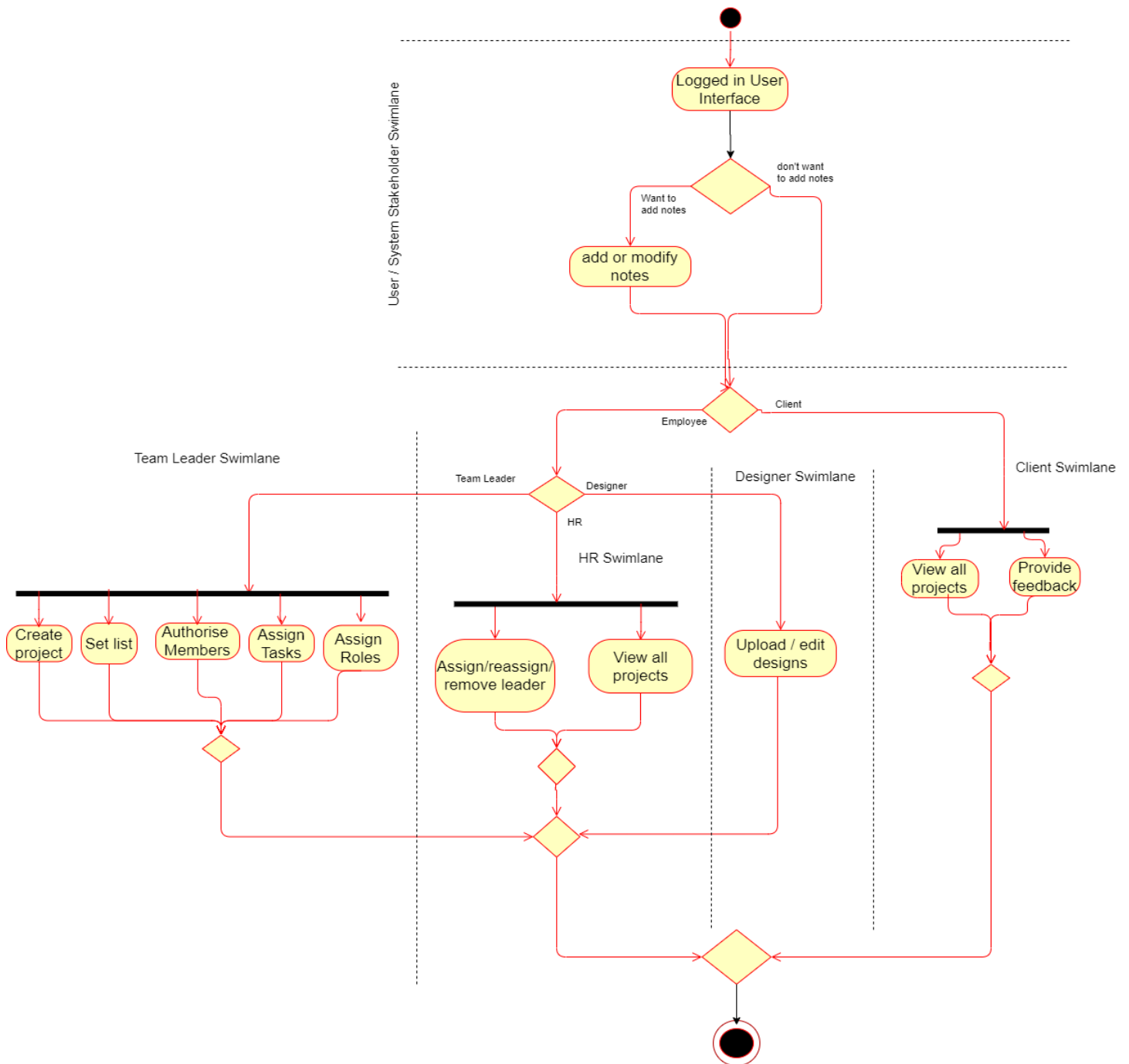


Sprint 3

a) Class Diagram for Sprint-3

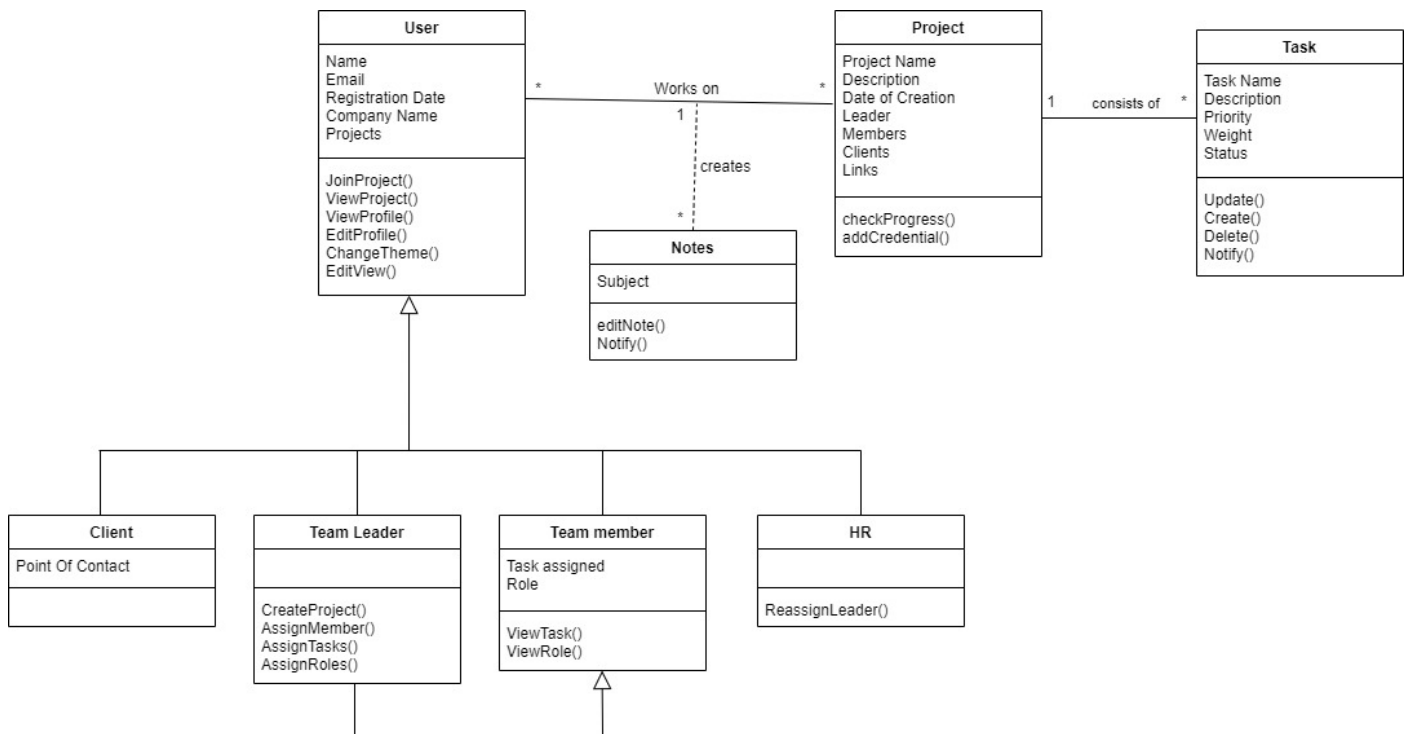


b) Activity Diagram for Sprint-3

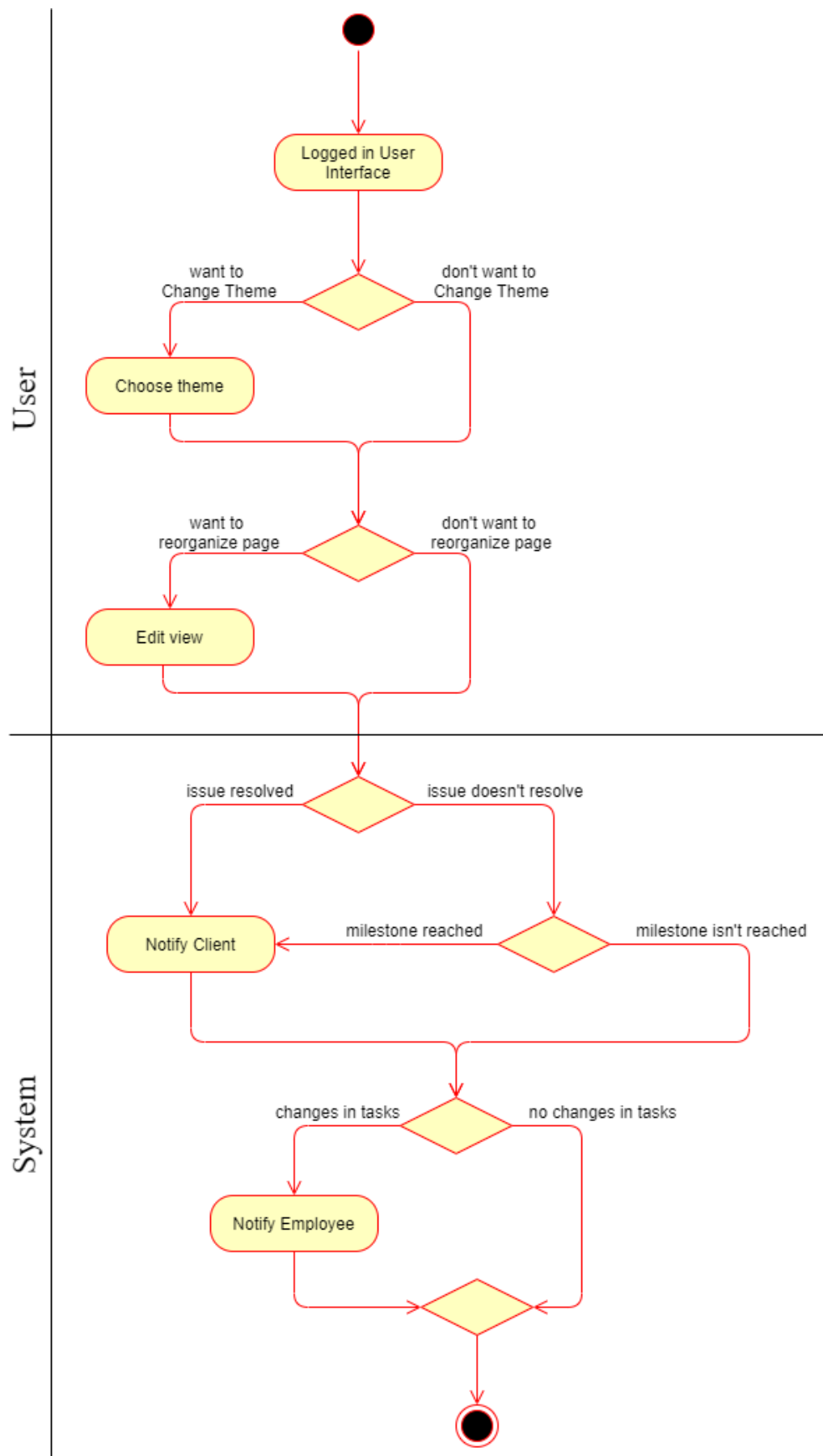


Sprint 4

a) Class Diagram for Sprint-4

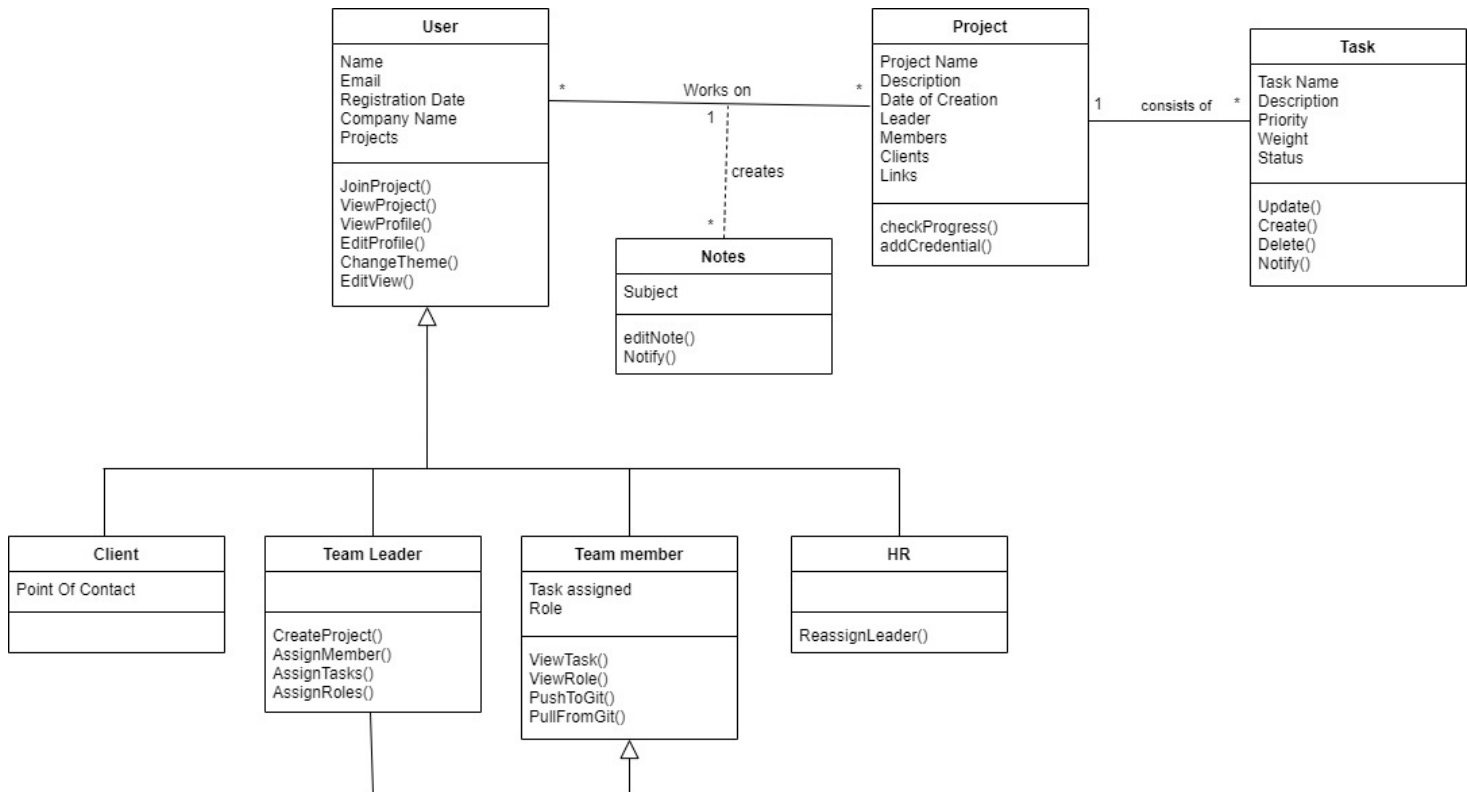


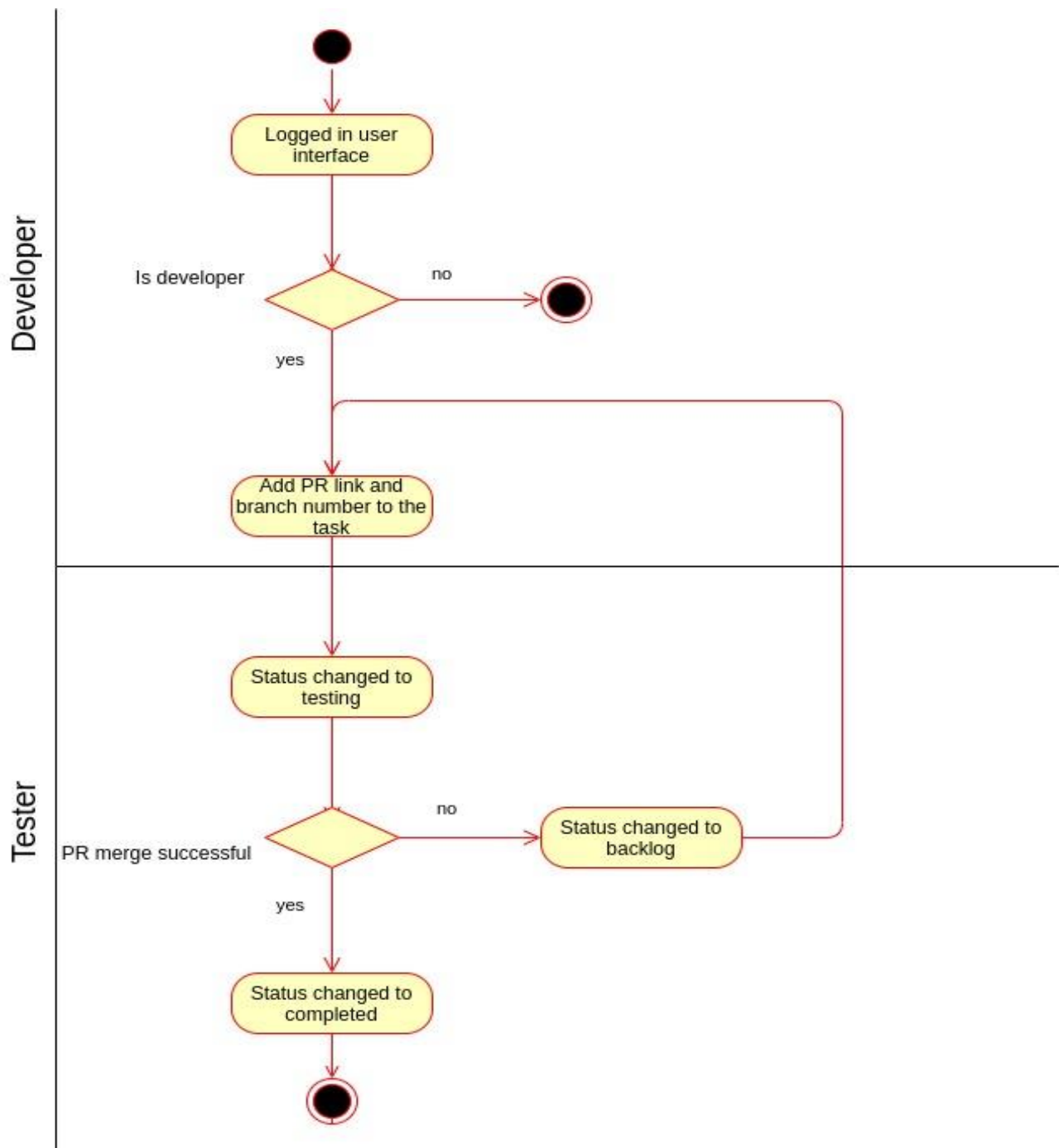
b) Activity Diagram for Sprint-4



Sprint 5

a) Class Diagram for Sprint-5



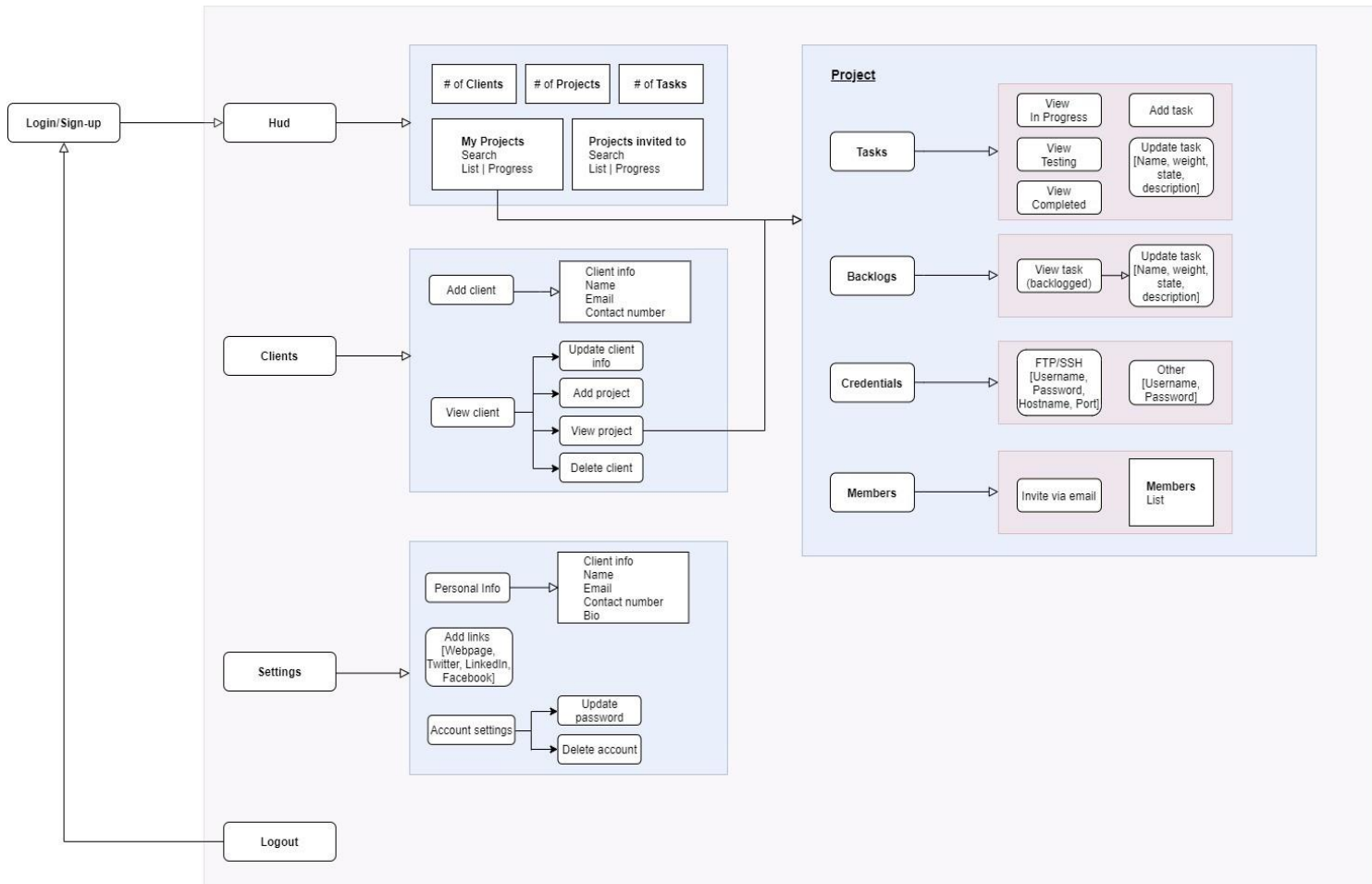
b) Activity Diagram for Sprint-5

Sprint 6 involved testing and deployment. Hence, no class or activity diagrams have been drawn for the same.

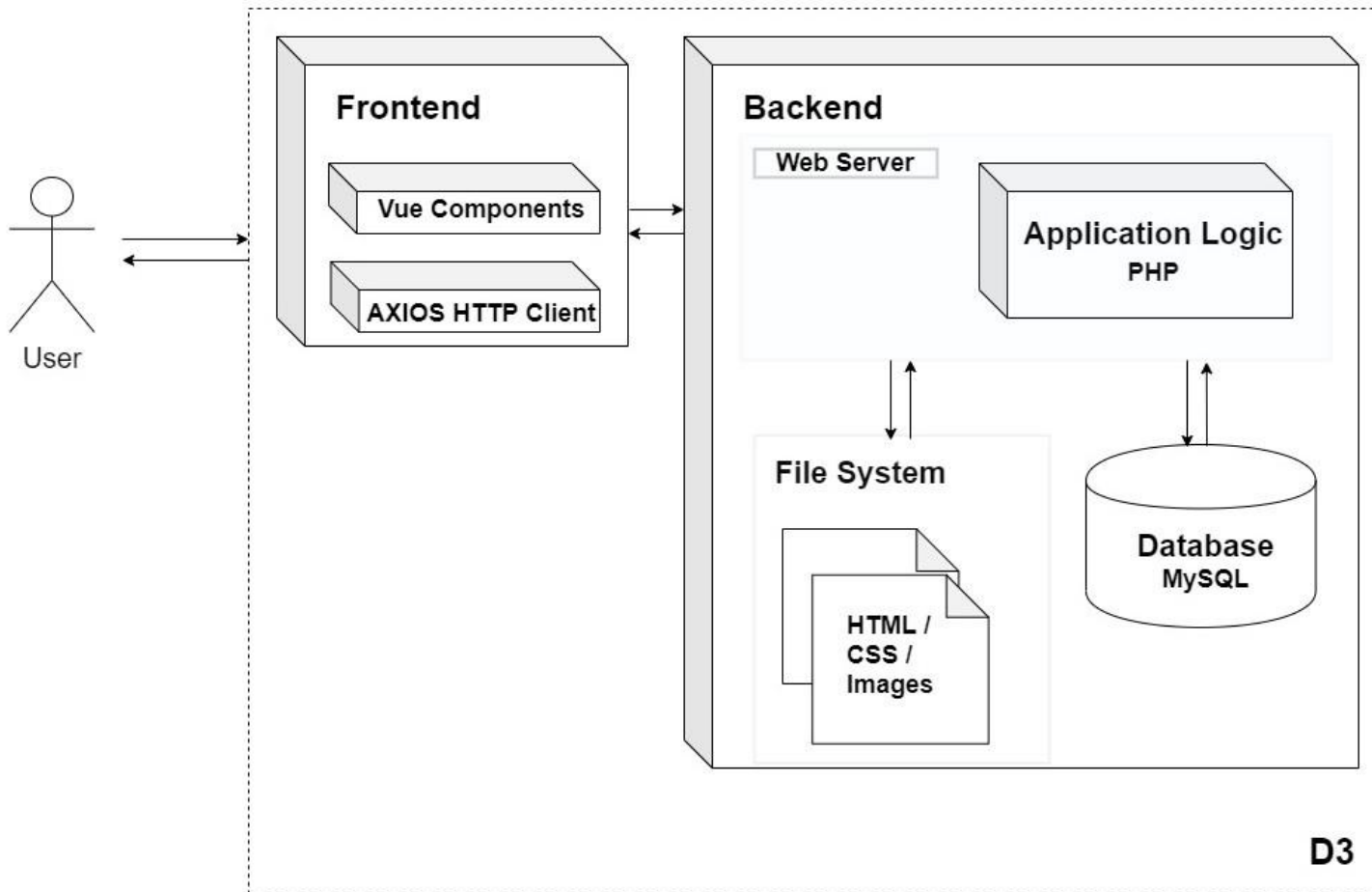
VI – Application Architecture

A) Project Workflow Diagram

Note
 Rounded: interactive component
 Shaded: different layers in screen
 (views) - same shade => same type of view



B) Deployment Diagram



VII – Testing

We used ESLint as the Static Code Analysis Tool, that analyses the source code to flag programming errors, bugs, stylistic errors, and suspicious constructs. Thus, it ensures a good quality of the code, by checking if standards are being adhered to.

We have completed the backend along with testing of all the routes and database using Postman and Robo3t. We have completed most of the client views of our project, and also linked the same with the server side.

Frontend has been tested in Google Lighthouse for bandwidth consumption and to reduce the time needed to load on different devices like Laptop, mobile, etc with different data rates.

Database design is complete and currently we are using a local instance of our database for testing. It can be deployed to make it available for other users as well. Also, our software is quite responsive to the type of screen, be it mobile, laptop, or a tablet.

The **Section A (page: 23-24)** contains snapshots of the functional testing done in postman.

The **Section B (page: 25-27)** is the software testing report, describing the aspects and functionality tested, along with the results of tests that were executed during the testing phases for front-end and back-end of our project.

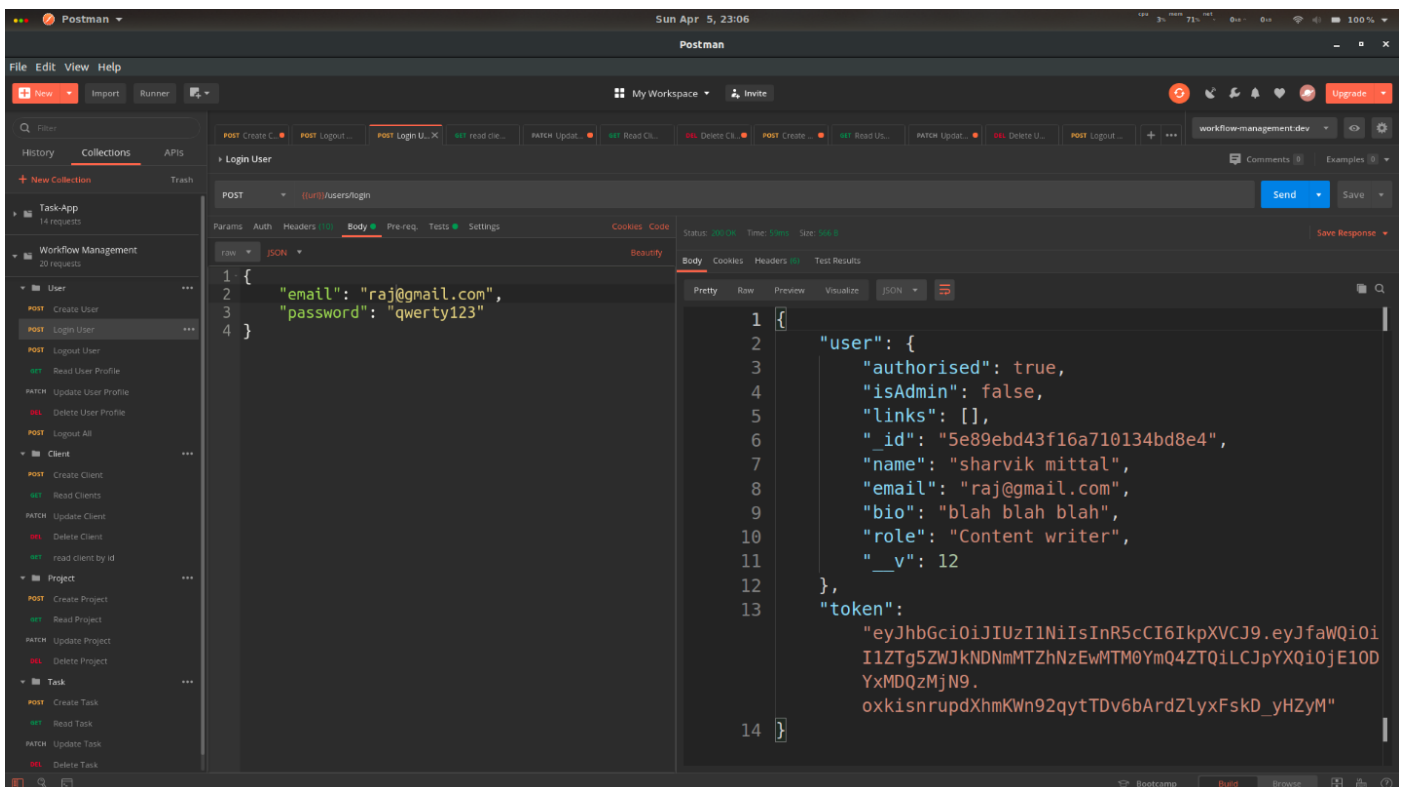
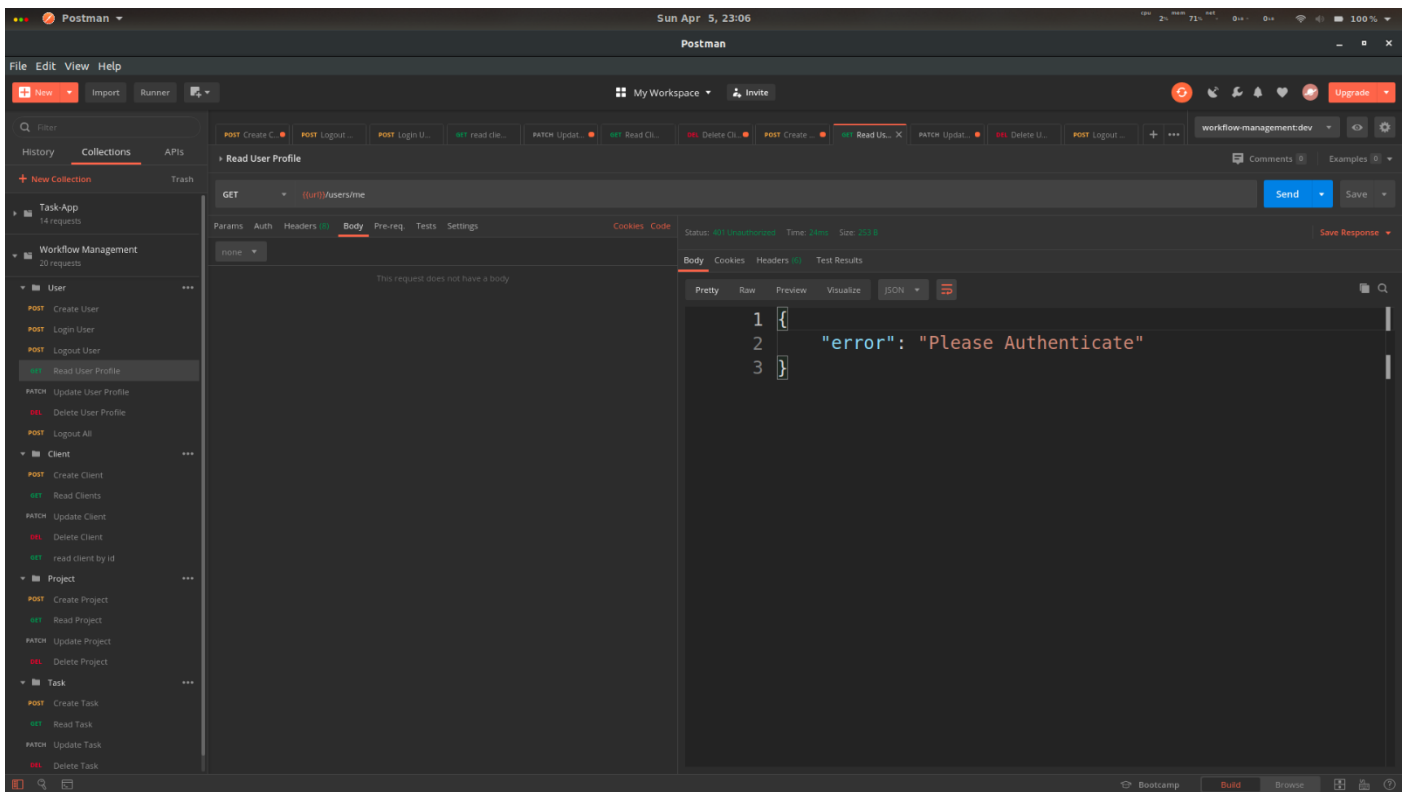
Various aspects of the website were tested using manual testing.

The aspects of the website which were tested include:

- Login for various users
 - Team Members
 - Client-Side Members
- Signup for various users
 - Team Members
 - Client-Side Members
- Functionality for various users
 - Team leader
 - Team Members
 - HR Person
 - Client-Side Members

Multiple test cases are mentioned which depicts the valid and invalid cases based on constraints placed on them. The functionalities are checked by testing each case and the checklist is presented in tabular form.

A) Testing for Backend – done in Postman



The screenshot shows the Postman application interface. The top bar indicates the date and time as "Sun Apr 5, 23:06". The main workspace is titled "Postman". The left sidebar shows a "History" tab with a "Collections" sub-tab. The "Create User" collection is selected, and the "POST" method is chosen. The request URL is "({url})/users". The request body is a JSON object with the following fields: "name", "email", "bio", "role", "password", "authorised", "isAdmin", and "links". The response is a JSON object with the following fields: "user" (containing "authorised", "isAdmin", "links", "_id", "name", "email", "bio", "role", and "__v") and "token" (a long alphanumeric string). The response status is "201 Created" and the size is "513 B".

```
1 {
2   "name": "milan",
3   "email": "milan@gmail.com",
4   "bio": "blah blah blah ",
5   "role": "Content writer",
6   "password": "qwerty123",
7   "authorised": true,
8   "isAdmin": false,
9   "links": []
10 }
```

```
1 {
2   "user": {
3     "authorised": true,
4     "isAdmin": false,
5     "links": [],
6     "_id": "5e8a0737ac4bc314daf29c38",
7     "name": "milan",
8     "email": "milan@gmail.com",
9     "bio": "blah blah blah",
10    "role": "Content writer",
11    "__v": 1
12  },
13  "token":
14    "eyJhbGciOiJIUzI1NiIsInR5cCI6IkpXVCJ9.eyJfaWQiOiJlZThhMDczN2FjNGJmZjE0ZGZmMjIjMzgiLCJpYXQiOiJlODYxMDQxMTI5Lk3e1FHQcF4RWu_LDUz2nbw2rLvcI4q8Xt1NM0FP7tOQ"
```

The screenshot shows the Postman application interface. The top bar indicates the date and time as "Sun Apr 5, 23:06". The main workspace is titled "Postman". The left sidebar shows a "History" tab with a "Collections" sub-tab. The "Create Client" collection is selected, and the "POST" method is chosen. The request URL is "({url})/clients". The request body is a JSON object with the following fields: "client name", "email", and "point_of_contact". The response is a JSON object with the following fields: "projects", "_id", "client_name", "email", "point_of_contact", "owner", and "__v". The response status is "201 Created" and the size is "354 B".

```
1 {
2   "client name": "nit",
3   "email": "20171@daiict.ac.in",
4   "point_of_contact": "admin"
5 }
```

```
1 {
2   "projects": [],
3   "_id": "5e8a07ddac4bc314daf29c3e",
4   "client_name": "nit",
5   "email": "20171@daiict.ac.in",
6   "point_of_contact": "admin",
7   "owner": "5e8a0737ac4bc314daf29c38",
8   "__v": 0
9 }
```


B) Manual Testing Report

1) Registration Page

Validators: Passwords should have a minimum length of 8 characters.

Email	Name	Password	Verdict
pdbaby@verizon.net	Pranav Desai	tanuja	Invalid
isaacson@aol.com	Isaac Newton	gravity2.0	Valid
sjava@gmail.com	Sanjay Srivastava	IOT	Invalid
andale@verizon.net	Dale Anzusi	coronavirus	Valid
gknauss@optonline.net	Ganpat Nauss	Jesus@1	Invalid
carroll@me.com	Andy Carroll	lalalala	Invalid
kewley@live...com	-	-	Invalid
Abc.example.com	-	-	Invalid
()<>[:;,@\`{}] @example.org	12# Dds	()<>[:;,@\`{}] @	Valid
james bond@gmail.com	-	-	Invalid
leo@messi@10@messi.com	Mateo	Antonella	Invalid
leo@messi@messi.com	Ciro	Antonella	Valid
example-3#@abs.co.uk	##*@&%	123456789	Valid
adityamittal	-	-	Invalid
adityamittal@	-	-	Invalid
zohan@zohan.com	zohan	zohan123	Valid
benshapiro@dailywire.com	Ben Shapiro	prolife@123	Valid
adityamittal@.com	-	-	Invalid

2) Login Page

Assumption: Input Email ID and Password should be registered.

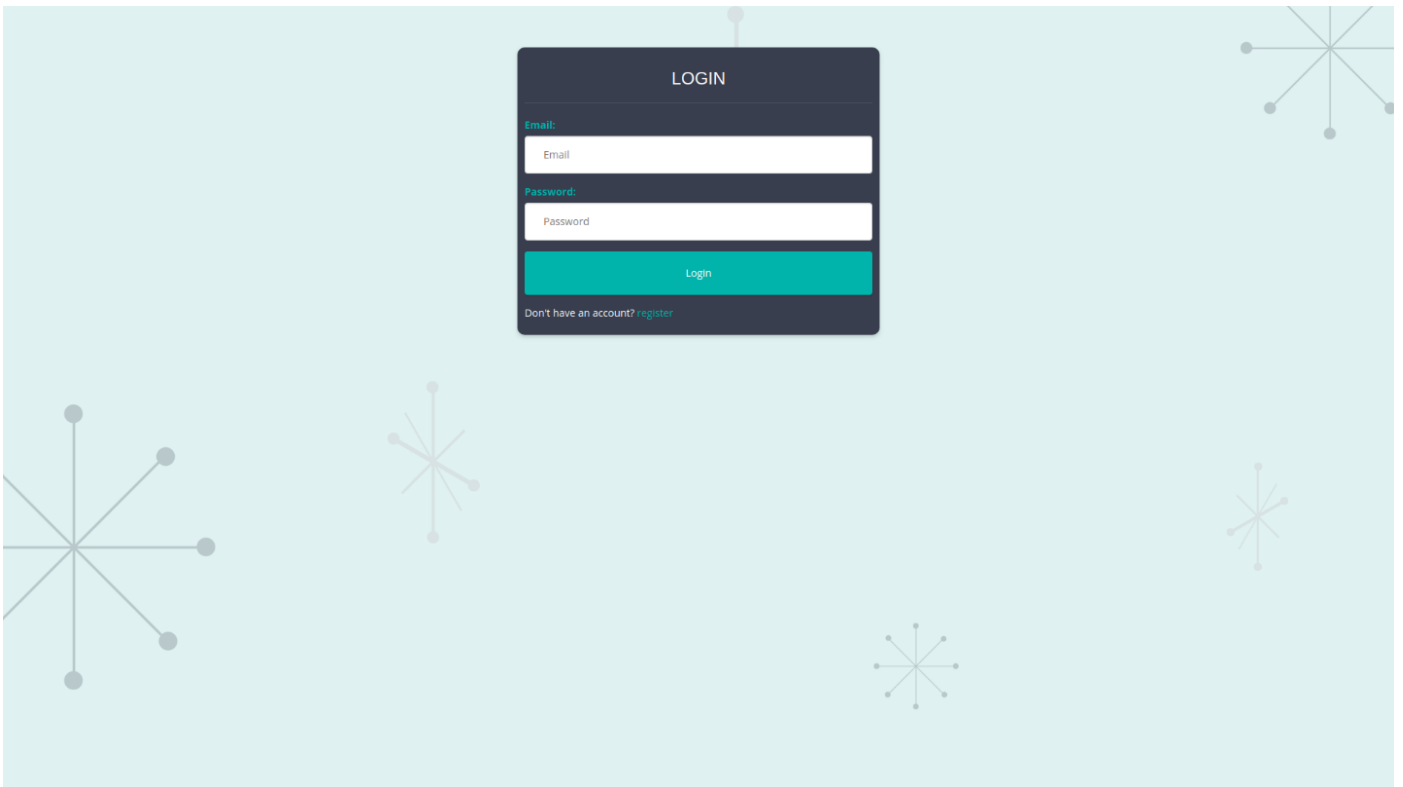
A Valid Email address with leading and trailing spaces will count as INVALID.

Email	Password	Verdict
xyz@hotmail.com	hallelujah	Valid
ayush@gmail.com	qwerty	Invalid

Login with valid details.	[Valid][Functioning]
Login with invalid details.	[In-Valid][Functioning]
If a user is a team leader, is able to launch(create) a new project.	[Valid][Functioning]
If a user is a team leader, is able to create role information and assign roles in a project for other members of the team.	[Valid][Functioning]
A user able to request to join the project.	[Valid][Functioning]
A Team Leader able to open a new page in a project.	[Valid][Functioning]
A Team Member able to open a new page in a project.	[Valid][Functioning]
A Team Leader able to set priority tags in a project.	[Valid][Functioning]
A Team Member able to set priority tags in a project.	[In-Valid][Functioning]
A user able to add or modify notes.	[Valid][Functioning]
A HR Person able to assign or remove leaders.	[In-Valid][Functioning]
A normal member able to assign or remove leaders.	[In-Valid][Functioning]
A person from the client side able to view projects and provide feedback.	[Valid][Functioning]
A team member able to Upload files.	[Valid][Functioning]
A person from the client side is able to upload files.	[In-Valid][Functioning]

Some screenshots of the front-end and back-end components are shared in the next section.

VIII – Implementation: Front-end UI Designs



The image shows a login form centered on a light blue background with faint, stylized starburst patterns. The form is a dark navy blue rectangle with rounded corners. At the top, the word "LOGIN" is written in white, uppercase letters. Below this, there are two input fields: "Email" and "Password", both with white text and white borders. A teal-colored button with the word "Login" in white is positioned below the password field. At the bottom of the form, there is a link that says "Don't have an account? [register](#)" in white text.

LOGIN

Email:

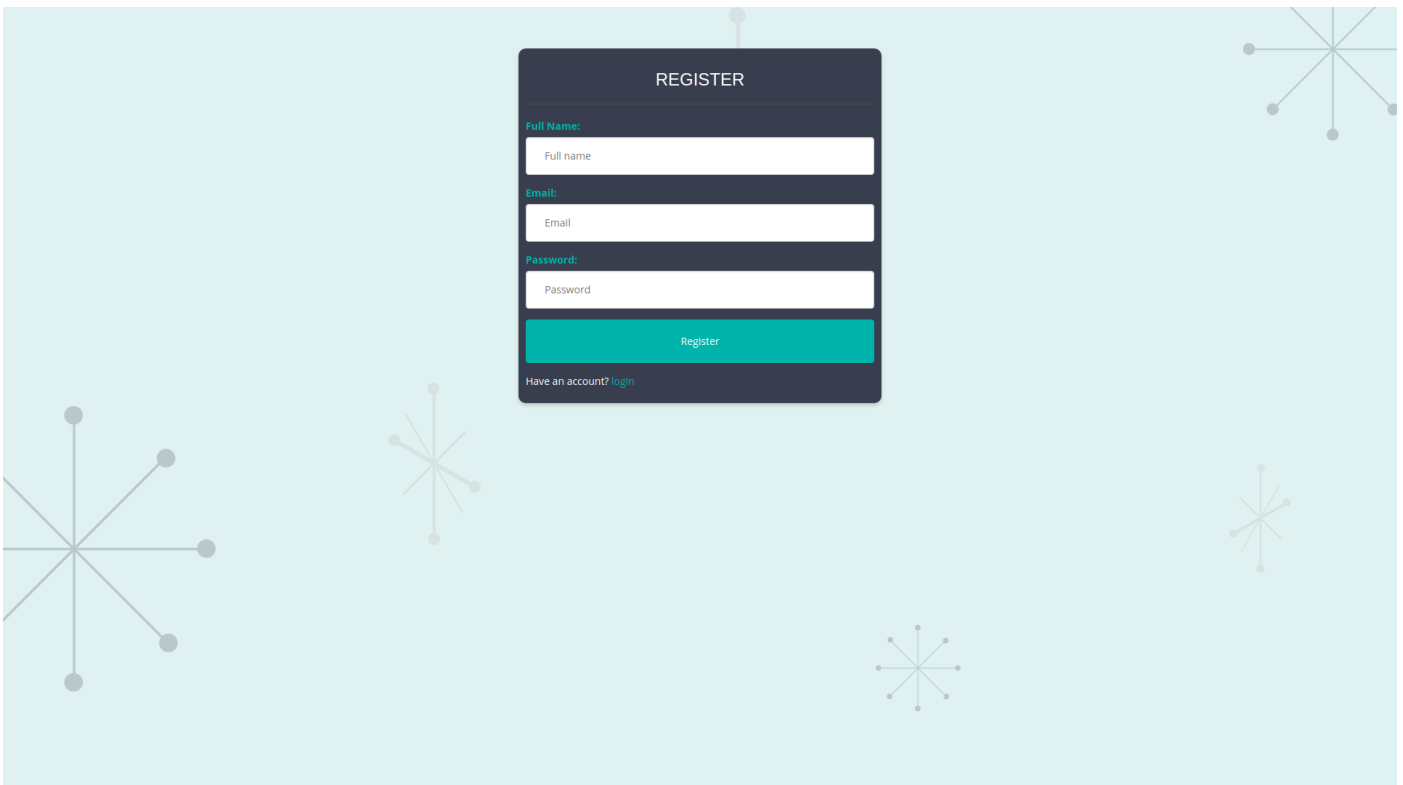
Email

Password:

Password

Login

Don't have an account? [register](#)



The image shows a register form centered on a light blue background with faint, stylized starburst patterns. The form is a dark navy blue rectangle with rounded corners. At the top, the word "REGISTER" is written in white, uppercase letters. Below this, there are three input fields: "Full Name:", "Email:", and "Password:", all with white text and white borders. A teal-colored button with the word "Register" in white is positioned below the password field. At the bottom of the form, there is a link that says "Have an account? [login](#)" in white text.

REGISTER

Full Name:

Full name

Email:


Email

Password:

Password

Register

Have an account? [login](#)


milek

Search

Hud

Clients

Settings

Logout

Connect your device

Hud

Press **F11** to exit full screen

Clients

3

Projects

1


Tasks

1

My Projects

#	Name	Progress
1	Project Manager	<div><div></div></div>

Projects that you have been invited to will show up here. Currently you have not been invited to any project.


milek

Search

Hud

Clients

Settings

Logout

Connect your device

Clients

SEN

Swarn

SEN

SEN

Contact name: ST

Contact number: 1234567890

Contact email: milekag02@gmail.com

Projects

#	Name
1	Project Manager

New Project

Delete SEN

New Client


Client Name

Email


Point Of Contact


Contact Number


Save



milek

Search

 Hud

 Clients






 Settings

 Logout

Connect your account to view more

Project Manager

Description: <https://github.com/milekag01/sbg.git>

Progress | Low  Normal  Medium  High  Highest 

Tasks (2)

Backlog (2)


Credentials (0)


Members

In Progress (0)

Testing (1)

Completed (1)


w.9
backend route


w.9
list view



Version Control


w.23


New Task



milek

Search

 Hud

 Clients






 Settings

 Logout

Connect your account to view more

Project Manager

Description: <https://github.com/milekag01/sbg.git>

Progress | Low  Normal  Medium  High  Highest 


Tasks (2)


Backlog (2)

Credentials (0)

Members

Backlog (2)


w.8
Dashboard


w.6
front views



Version Control


w.23


New Task



milek

Search

 Hud

 Clients

 Settings

 Logout

Connect your device

Project Manager

Description: <https://github.com/milekag01/sbg.git>

P Version Control

Progress | Low ● Normal ● Medium ● High ● Highest ●

Tasks (2)

Backlog (2)

Credentials (0)

Members

New Task


FTP/SSH ⊙ Other ⊙

Name


Username


Password


Save



milek

Search

 Hud

 Clients

 Settings

 Logout

Connect your device

Project Manager

Description: <https://github.com/milekag01/sbg.git>

P Version Control

Progress | Low ● Normal ● Medium ● High ● Highest ●

Tasks (2)

Backlog (2)

Credentials (0)


Members


New Task

Email:


Send Invite


Members


#	Name	Actions
1	milek	



mlek

Search

 Hud


 Clients

 Settings

 Logout

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Settings


mlek
mlekagrawal@gmail.com
Developer

BIO
Backend & Frontend Developer

Personal Info


Link

Links


Account Settings


Your changes have been saved


Save Changes



mlek

Search

 Hud


 Clients

 Settings

 Logout

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Settings


mlek
mlekagrawal@gmail.com
Developer

BIO
Backend & Frontend Developer

Personal Info

Links

Account Settings

Current Password

New Password

Update Password


Delete account

Enable the delete button by typing delete below


Deleting your account will delete ALL, clients, projects and tasks created under this account


Your changes have been saved


Save Changes



milek

Search

 Hud


 Clients

 Settings

 Logout

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Settings



milek

milekagrawal@gmail.com

Developer

BIO

Backend & Frontend Developer

Personal Info

Links

Account Settings

Your changes have been saved

Full Name

milek

Email

milekagrawal@gmail.com

Title

Developer

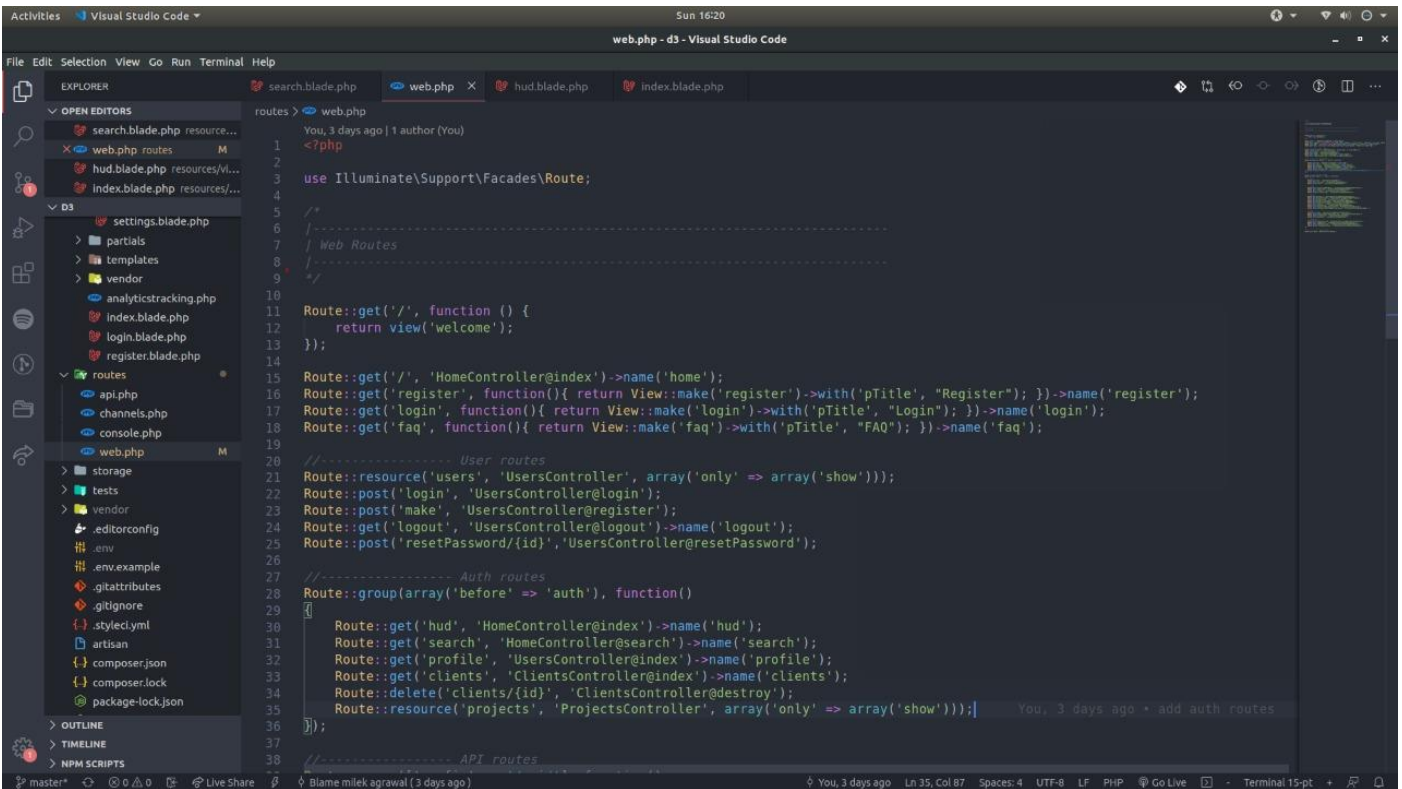
Bio

Backend & Frontend Developer

Save Changes

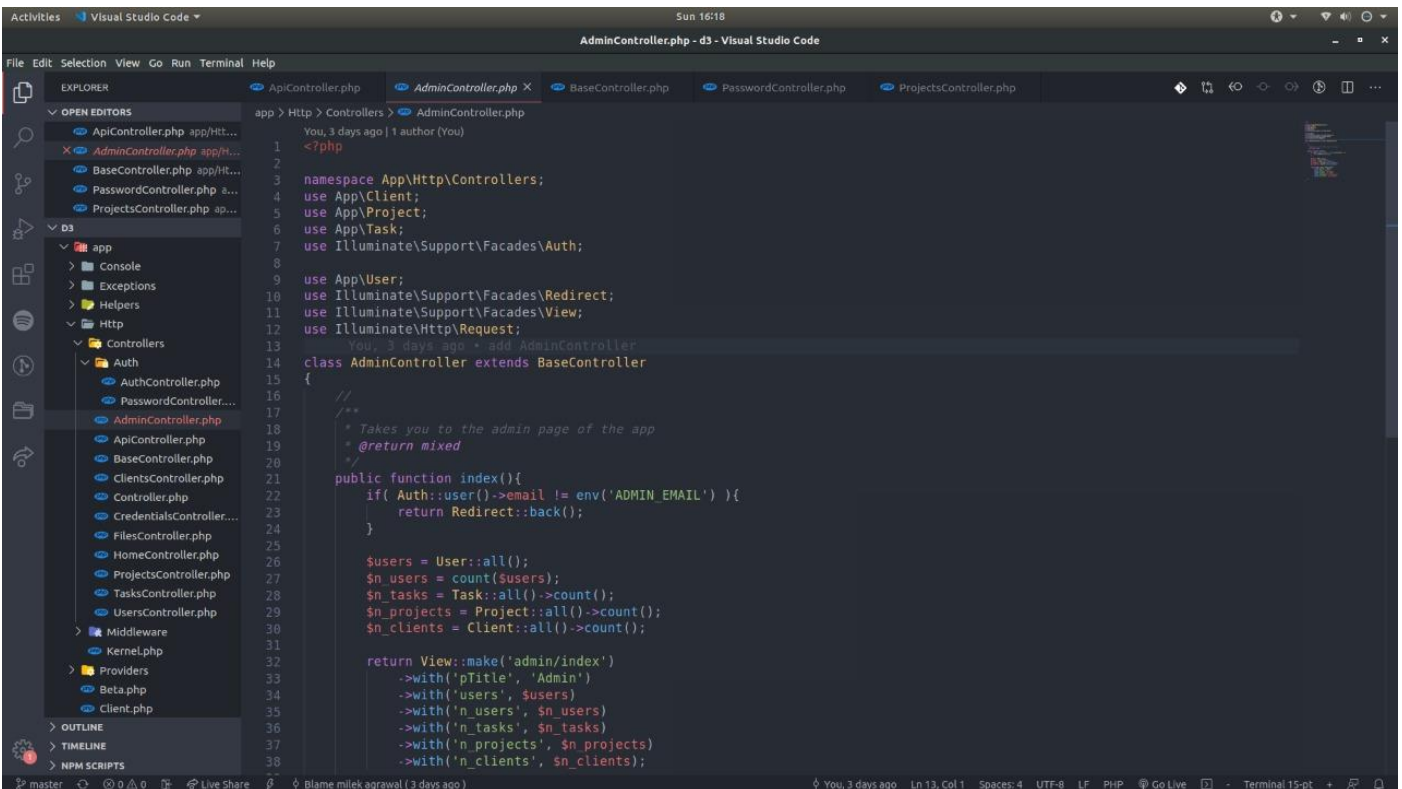
222

IX – Implementation: Back-end (Implemented in PHP, Laravel, Vue.js)



```

1  <?php
2
3  use Illuminate\Support\Facades\Route;
4
5  /*
6   * Web Routes
7   */
8
9
10 Route::get('/', function () {
11     return view('welcome');
12 });
13
14 Route::get('/', 'HomeController@index')->name('home');
15
16 Route::get('register', function(){ return View::make('register')->with('pTitle', "Register"); })->name('register');
17 Route::get('login', function(){ return View::make('login')->with('pTitle', "Login"); })->name('login');
18 Route::get('faq', function(){ return View::make('faq')->with('pTitle', "FAQ"); })->name('faq');
19
20 //----- User routes
21 Route::resource('users', 'UsersController', array('only' => array('show')));
22 Route::post('login', 'UsersController@login');
23 Route::post('make', 'UsersController@register');
24 Route::get('logout', 'UsersController@logout')->name('logout');
25 Route::post('resetPassword/{id}', 'UsersController@resetPassword');
26
27 //----- Auth routes
28 Route::group(array('before' => 'auth'), function()
29 {
30     Route::get('hud', 'HomeController@index')->name('hud');
31     Route::get('search', 'HomeController@search')->name('search');
32     Route::get('profile', 'UsersController@index')->name('profile');
33     Route::get('clients', 'ClientsController@index')->name('clients');
34     Route::delete('clients/{id}', 'ClientsController@destroy');
35     Route::resource('projects', 'ProjectsController', array('only' => array('show')));
36 });
37
38 //----- API routes
  
```



```

1  <?php
2
3  namespace App\Http\Controllers;
4  use App\Client;
5  use App\Project;
6  use App\Task;
7  use Illuminate\Support\Facades\Auth;
8
9  use App\User;
10 use Illuminate\Support\Facades\Redirect;
11 use Illuminate\Support\Facades\View;
12 use Illuminate\Http\Request;
13
14 class AdminController extends BaseController
15 {
16     /**
17      * Takes you to the admin page of the app
18      * @return mixed
19      */
20
21     public function index(){
22         if( Auth::user()->email != env('ADMIN_EMAIL') ){
23             return Redirect::back();
24         }
25
26         $users = User::all();
27         $n_users = count($users);
28         $n_tasks = Task::all()->count();
29         $n_projects = Project::all()->count();
30         $n_clients = Client::all()->count();
31
32         return View::make('admin/index')
33             ->with('pTitle', 'Admin')
34             ->with('users', $users)
35             ->with('n_users', $n_users)
36             ->with('n_tasks', $n_tasks)
37             ->with('n_projects', $n_projects)
38             ->with('n_clients', $n_clients);
39     }
40 }
  
```

Visual Studio Code interface showing the file `Project.php` in the `app` directory. The code defines a `Project` class extending `Model`.

```

1  You, 3 days ago | 1 author (You)
2  <?php  You, 3 days ago * create db access models
3
4  namespace App;
5
6  use Illuminate\Database\Eloquent\Model;
7  use Illuminate\Support\Facades\Auth;
8  use Illuminate\Support\Facades\DB;
9
10 class Project extends Model
11 {
12     //
13     protected $fillable = [
14         'user_id',
15         'client_id',
16         'name',
17         'description',
18         'production',
19         'stage',
20         'dev',
21         'github'
22     ];
23     protected $hidden = [
24         'created_at',
25         'updated_at'
26     ];
27     public function tasks(){
28         return $this->hasMany('App\Task', 'project_id');
29     }
30     public function credentials(){
31         return $this->hasMany('App\Credential', 'project_id');
32     }
33     public function members(){
34         return $this->belongsToMany('App\User');
35     }
36 }
37
38

```

Visual Studio Code interface showing the file `2014_10_12_000000_create_users_table.php` in the `migrations` directory. The code defines a `CreateUsersTable` class extending `Migration`.

```

1  You, 2 days ago | 1 author (You)
2  <?php
3
4  use Illuminate\Database\Migrations\Migration;
5  use Illuminate\Database\Schema\Blueprint;
6  use Illuminate\Support\Facades\Schema;
7
8  class CreateUsersTable extends Migration
9  {
10     /**
11      * Run the migrations.
12      *
13      * @return void
14      */
15     public function up()
16     {
17         Schema::create('users', function (Blueprint $table) {
18             $table->increments('id');
19             $table->string('full_name');
20             $table->string('email')->unique();
21             $table->string('password', 60);
22             $table->string('avatar')->nullable();
23             $table->integer('tasks_created')->nullable();
24             $table->integer('tasks_completed')->nullable();
25             $table->rememberToken();
26             $table->timestamps();
27         });
28     }
29
30     /**
31      * Reverse the migrations.
32      *
33      * @return void
34      */
35     public function down()
36     {
37         Schema::dropIfExists('users');
38     }
39 }

```

The screenshot shows the Visual Studio Code interface with the following details:

- Top Bar:** Displays "search.blade.php - d3 - Visual Studio Code".
- Explorer Sidebar (Left):** Shows the project structure under the "d3" folder. Key files include:
 - projectinvite.blade.php
 - welcome.blade.php
 - errors
 - ins
 - clients
 - projects
 - partials
 - index.blade.php
 - show.blade.php
 - hud.blade.php
 - search.blade.php
 - settings.blade.php
 - templates
 - vendor
 - analyticstracking.php
 - index.blade.php
 - login.blade.php
 - register.blade.php
 - routes
 - api.php
 - channels.php
 - console.php
 - web.php
 - storage
 - tests
 - vendor
- Main Editor Area:** Displays the code for "resources > views > ins > search.blade.php". The code is as follows:


```

@extends('templates/ins/master')

@section('content')
    <div class="row">
        <div class="col-xs-12 page-title-section">
            <h1 class="pull-left">Search</h1>
        </div>

        <div class="col-xs-12">
            <strong class="color-primary">
                {{ count($clients) + count($projects) + count($tasks) }}
            </strong>Results for: "<strong class="color-primary"><i>{{ $q }}</i></strong>"</h4><br><br>
        </div>

        <div class="row">
            <div class="col-xs-12">

                <!-- clients -->
                <div class="panel panel-default panel-list">
                    <div class="panel-heading">Clients {{count($clients)}}</div>
                    <div class="panel-body">

                        @if (count($clients) > 0)
                            @foreach ($clients as $client)
                                <a href="{{ route('clients', ['id' => $client->id]) }}">
                                    {{ $client->name }}
                                </a>
                            @endforeach
                        @else
                            <section class="info">
                                <p class="dimmed">Nothing Found...</p>
                            </section>
                        @endif
                    </div>
                </div>
            </div>
        </div>
    </div>

```
- Status Bar (Bottom):** Shows "You, 2 days ago Ln 79, Col 15 Spaces: 4 UTF-8 LF PHP Go Live Terminal 15-pt".