WAL Pulse

A project report submitted in partial fulfilment of the requirement for degree of

BACHELOR OF TECHNOLOGY

In

COMPUTER SCIENCE & ENGINEERING

By

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CERTIFICATE OF EXAMINATION

This is to certify that we have examined the thesis entitled **WAL Pulse**, submitted by **Y Pavan Kumar Reddy(R170981)** here by accord my approval of it as a study carried out and presented in a manner required for its acceptance in partial fulfilment for the award of Bachelor of Technology degree for which it has been submitted. This approval does not necessarily endorse or accept every statement made, opinion expressed or conclusions drawn, as recorded in this thesis. It only signifies the acceptance of this thesis for the purpose for which it has been submitted.

EXAMINER

RAJIV GANDHI UNIVERSITY OF KNOWLEDGE AND TECHNOLOGIES

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CERTIFICATE OF PROJECT COMPLETION

This is to certify that I have examined the thesis entitled submitted by **Y Pavan Kumar Reddy (R170981)** under our guidance and supervision for the partial fulfilment for the degree of Bachelor of Technology in Computer Science and Engineering during the academic session September 2022 – April 2023 at RGUKT-RK Valley. To the best of my knowledge, the results embodied in this dissertation work have not been submitted to any university or institute for the award of any degree or diploma.

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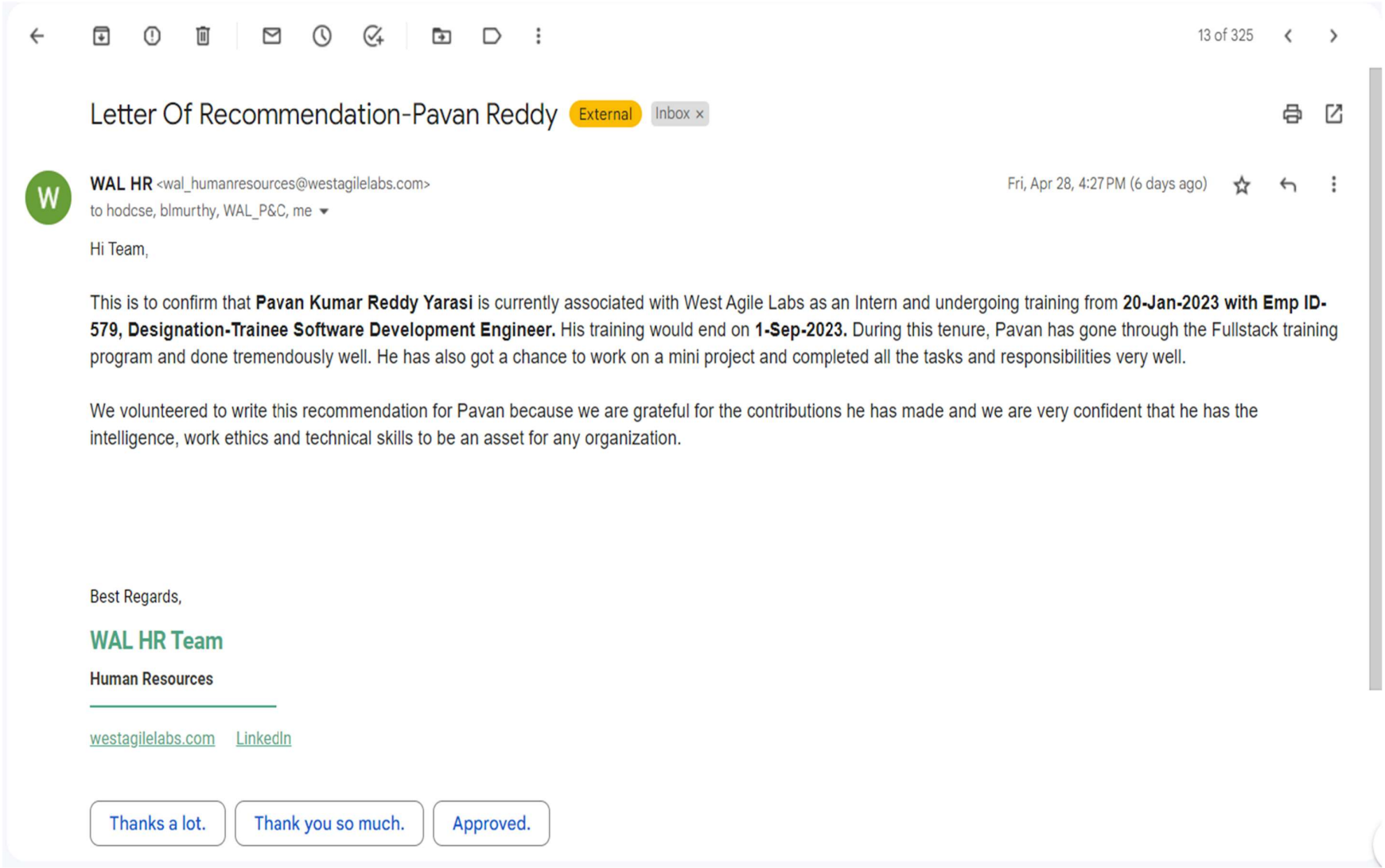
Declaration

I Y Pavan Kumar Reddy hereby declare that this report entitled **"WAL Pulse"** submitted by me under the guidance and supervision of **B. Lingamurthy.** I also declare that it has not been submitted previously in part or in full to this University or other institution.

Date: 04-05-2023 **Y PAVAN KUMAR REDDY**

Place: RK Valley **R170981**



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Letter Of Recommendation-Pavan Reddy

External Inbox ×

WAL HR <wal_humanresources@westagilelabs.com>
to hodcse, blmurthy, WAL_P&C, me

Fri, Apr 28, 4:27 PM (6 days ago)

Hi Team,

This is to confirm that **Pavan Kumar Reddy Yarasi** is currently associated with West Agile Labs as an Intern and undergoing training from **20-Jan-2023 with Emp ID-579, Designation-Trainee Software Development Engineer.** His training would end on **1-Sep-2023.** During this tenure, Pavan has gone through the Fullstack training program and done tremendously well. He has also got a chance to work on a mini project and completed all the tasks and responsibilities very well.

We volunteered to write this recommendation for Pavan because we are grateful for the contributions he has made and we are very confident that he has the intelligence, work ethics and technical skills to be an asset for any organization.

Best Regards,

WAL HR Team

Human Resources

westagilelabs.com LinkedIn

Thanks a lot. Thank you so much. Approved.

Acknowledgement

I would like to express my sincere gratitude to **Alam Khan, Sandeep and Rajesh -** my guides at West Agile labs for constant support for my learning and development. Special thanks to **West Agile Labs** for providing me with this great opportunity.

I am grateful to **B Lingamuthy**, **Internal Guide** for providing valuable suggestions and interest in progress.

At the outset, I would like to thank **Rajiv Gandhi University of Knowledge and Technologies** and **West Agile Labs**, for providing all the necessary resources for the successful completion of my course work.

With Sincere Regards

Y Pavan Kumar Reddy,

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Abstract

In today's fast-paced business environment, maintaining an organization's software systems is crucial for ensuring that the organization remains competitive and meets the needs of its customers. Full-stack development has emerged as a popular approach for building and maintaining software systems, as it allows developers to work on both the front-end and back-end components of an application.

This project aims to explore the use of full-stack development in maintaining an organization's software systems. The project will involve developing a maintenance system using popular full-stack development frameworks such as React, and Node.js. The system will be designed to address common maintenance issues such as bug fixing, feature updates, and security patches.

The project will involve several phases, including requirements gathering, design, development, testing, and deployment. Throughout these phases, best practices for full-stack development will be followed, including agile development methodologies, continuous integration and deployment, and automated testing.

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1.Introduction

1.1. Purpose of this Document

This document is the detailed report of work done by me in the WAL Pulse project through the second semester of the academic year 2022-23.

1.2 Diagrams

- **Use-case Diagram**

1.3 Organization Profile

We created West Agile Labs to build digital products. We design, develop, and provide consulting services to companies of all shapes and sizes. From startups to later-stage, well-funded companies to established Fortune 500 businesses, our globally distributed team provides the best services offered in the market.

We partner with companies that align with our create, build, and scale philosophy. We create ideas and design solutions for both your needs and your

customers'. We develop and build your software and technology today so that it supports your business. We develop and build our relationship with you and scale our efforts so that we can support you tomorrow and beyond.

2. Overall Description

2.1 Project Perspective

The Product is used to maintain the sales of any organization. They can easily add new salesman. salesman can able to order products for the stores in his/her circle. Stores can also be maintained easily.

2.2 Project Functions

- Project Portfolio
- Detailed project view
- Add/update project details
- Add team composition
- Project updates
- Resource requests
- Raise project concerns

2.3 Operating Environment

- **Development environments**

  A development environment is where most of the technical programming takes place and is used by developers to build applications and write their code, from platform-specific native apps to progressive web apps and cross-platform apps. Visual Studio Code is mainly used environment for Development.

- **Staging environments**

  Staging Environment refers to the environment where the testing of the developed project will be done. For frontend, the testing will be done using the browser and any errors can be shown in console of the browser.

- **Production environments**

  When the development team, product owners, and end-users have thoroughly tested the product in the staging environment, the web app is pushed to the production environment. Amazon Web Services (AWS) is used as the production environment.

2.4 User Characteristics

- **Super admin**

  A person whose job is to role mapping.

- **Admin user (special admin)**

  A person who have access to all projects in the organization and able to add new projects

- **GDO Head**

  He has access to those projects which are under his/her super control.

- **Project Manager**
  He has access to those projects which are under his/her supervision.

3. Detailed Functional Requirements

- **Super admin**
  - Get All registered employee details
  - Role Mapping
  - Edit or delete user/employee
- **Admin User**
  - Project portfolio consists of all projects in the organisation
  - Add / edit project details (new project)
  - Get all project concerns
  - Project detailed view
  - Get resource requests
- **GDO Head**
  - Project Portfolio consists of those projects which or their supervision
  - Add / edit team composition
  - Get all concerns of projects which are under their supervision
  - Project detailed view
  - Raise resource request
- **Project Manager**
  - Project portfolio consists of those projects which or their supervision
  - Get all concerns of projects which are under their supervision
  - Project detailed view
  - Post project updates
  - Post project concerns

4. System Requirements

4.1 Software Requirements

The Software Requirements of the project are

- **Frontend Development**

1. ReactJs
2. Bootstrap
3. ReactBootstrap
4. JavaScript

- **Backend Development**
  1. NodeJs
- **Databases**
  1. MySQL
- **Version Control**
  1. GitHub

- **Testing**
  1. Jest

1. React.js

ReactJS is a popular open-source JavaScript library that allows developers to build user interfaces. It follows a component-based architecture where each part of the UI is represented as a separate component. This approach makes it easier to manage and maintain large-scale applications. ReactJS also uses a virtual DOM, which helps update the UI efficiently without the need to reload the entire page. Additionally, ReactJS is declarative, meaning that it allows developers to describe what the UI should look like, and the library handles the underlying logic. This helps simplify the development process and makes it easier to reason about the code.

ReactJS has a number of benefits that have contributed to its popularity among developers. For example, it allows for reusable code and encourages the separation of concerns, making it easier to manage complex applications. ReactJS is also highly adaptable and can be used in a variety of contexts, including web development, mobile app development, and even VR and AR applications. Furthermore, the large community of developers who use ReactJS provides ample resources and support, making it easier for developers to learn and use the library.

Overall, ReactJS is a powerful tool for building dynamic and interactive user interfaces. Its component-based architecture, virtual DOM, and declarative approach make it a popular choice for developers who want to build complex applications while minimizing the complexity of the underlying code. With its versatility and community support, ReactJS is likely to continue to be a prominent player in the world of front-end web development for years to come.

2. Bootstrap

Bootstrap is a popular open-source front-end framework that provides developers with a set of pre-designed components and styles for building responsive, mobile-first websites and web applications. These components and styles can be easily customized and combined to create a consistent and professional-looking user interface. Bootstrap is designed to be flexible and easy to use, making it a popular choice for both beginner and experienced developers.

One of the key advantages of using Bootstrap is its focus on mobile-first design. With the rise of mobile devices, it's essential for websites and web applications to be optimized for smaller screens. Bootstrap makes it easy to create responsive designs that adapt to different screen sizes and orientations. This means that users can have a consistent and enjoyable experience regardless of the device they're using.

Bootstrap also provides a number of built-in features and plugins that can help developers create more complex functionality with ease. For example, Bootstrap includes a range of form controls, such as input fields and select boxes, that can be easily customized and styled. It also includes a variety of JavaScript plugins for things like modals, carousels, and tooltips. These plugins can be easily added to a project and customized to fit specific requirements.

Finally, it's worth noting that Bootstrap is constantly evolving. The framework is updated frequently with new features and improvements based on feedback from the community. This means that Bootstrap is always improving and adapting to the changing needs of developers and users. With its focus on mobile-first design, flexibility, and ease of use, Bootstrap is likely to continue to be a popular choice for front-end web development for years to come.

3. React-Bootstrap

React-Bootstrap is a library that combines the functionality of the ReactJS library with the pre-designed components and styles of Bootstrap. It provides a set of components that can be used to build responsive, mobile-first web pages and applications using ReactJS. React-Bootstrap is maintained by a community of developers and is designed to be flexible, customizable, and easy to use.

One of the main benefits of using React-Bootstrap is that it simplifies the process of building complex user interfaces with ReactJS. Instead of building components from scratch, developers can use the pre-designed components and styles provided by Bootstrap, which are optimized for responsiveness and mobile-first design. React-Bootstrap also includes a range of additional components and features that are not available in the standard Bootstrap library, such as an accordion component and a list group component.

Another advantage of React-Bootstrap is that it integrates seamlessly with ReactJS, allowing developers to take advantage of the powerful features and capabilities of both libraries. The library provides a set of components that can be easily imported into ReactJS projects, and developers can also customize and extend these components as needed. This makes it easier to build consistent and professional-looking user interfaces using ReactJS, while also taking advantage of the robust functionality provided by Bootstrap.

4.JavaScript

JavaScript is a high-level, object-oriented programming language that is primarily used for client-side web development. It is a core technology for creating dynamic and interactive web pages and is supported by all major web browsers. JavaScript is a versatile language that can also be used for server-side web development, desktop application development, and game development.

One of the key advantages of using JavaScript is its versatility and ease of use. JavaScript is a relatively simple language to learn, with a syntax that is similar to other programming languages like C++ and Java. It is also an interpreted language, which means that it can be run directly in a web browser without the need for a separate compiler. This makes it easy to get started with JavaScript development and allows developers to quickly create interactive web pages and applications.

Another advantage of JavaScript is its flexibility and ability to integrate with other technologies. JavaScript can be used in conjunction with a wide range of web technologies, including HTML, CSS, and various JavaScript libraries and frameworks. This allows developers to create powerful and sophisticated web applications with a high degree of customization and functionality. Additionally, JavaScript is a popular choice for developing cross-platform mobile applications using technologies like React Native and Ionic.

5.NodeJs

Node.js is an open-source, cross-platform, server-side JavaScript runtime environment. It is built on top of Google's V8 JavaScript engine and is designed to enable developers to build scalable, high-performance web applications using JavaScript. Node.js is particularly well-suited for real-time, data-intensive applications that require fast, non-blocking I/O operations.

One of the key benefits of using Node.js is its ability to handle a large number of connections simultaneously. Unlike traditional server-side technologies like PHP or Java, which use a threaded approach to handle requests, Node.js uses an event-driven, non-blocking I/O model. This means that it can handle multiple requests at the same time without blocking other operations, resulting in better performance and scalability.

Another advantage of Node.js is its extensive ecosystem of modules and packages. The Node.js package manager, npm, is one of the largest package repositories in the world, with over one million packages available for download. This allows developers to easily integrate third-party libraries and tools into their projects, accelerating the development process and increasing the functionality of their applications.

6.MySQL

MySQL is a popular open-source relational database management system that is widely used for web applications and other data-driven projects. It is one of the

most widely used database systems in the world, and is known for its scalability, reliability, and ease of use. MySQL is designed to be fast, efficient, and flexible, making it an ideal choice for a wide range of applications.

One of the key features of MySQL is its ability to handle large volumes of data with ease. It is optimized for performance and can handle millions of rows of data without sacrificing speed or reliability. Additionally, MySQL supports a range of storage engines, allowing developers to choose the best engine for their specific use case. For example, the InnoDB engine is optimized for performance and reliability, while the MyISAM engine is optimized for speed and simplicity.

Another advantage of MySQL is its ease of use and flexibility. MySQL is designed to be user-friendly and intuitive, with a simple and intuitive command line interface that makes it easy to manage databases and execute SQL queries. Additionally, MySQL supports a wide range of programming languages and frameworks, including PHP, Java, Python, and Ruby on Rails. This makes it easy to integrate MySQL with other technologies and platforms, and to build sophisticated data-driven applications.

7.GitHUB

GitHub is a web-based platform that enables developers to store, manage, and collaborate on code repositories. It provides a centralized location where developers can share their code, track changes, and work together on projects. GitHub is built around the Git version control system, which enables developers to easily manage changes to their code and track the progress of their projects.

One of the key benefits of GitHub is its collaborative features. Developers can easily share their code with others, invite collaborators to work on their projects, and track changes to their code in real-time. GitHub also offers a range of tools and features to support collaboration, including pull requests, issue tracking, and code reviews. These tools enable developers to work together more efficiently and effectively, and to ensure that their code is of high quality.

Another advantage of GitHub is its large and active community of developers. GitHub has millions of users and hosts millions of code repositories, making it one of the largest and most vibrant developer communities in the world. This community provides a wealth of resources and support for developers, including forums, documentation, and open-source libraries. Developers can also use GitHub to showcase their work and build a reputation as a skilled and knowledgeable developer, which can be valuable in their careers.

8.Jest

Jest is a popular open-source testing framework for JavaScript. It is designed to make it easy to write tests for JavaScript code, and to provide a comprehensive and reliable testing experience. Jest is used by many developers and organizations around the world, and is known for its simplicity, speed, and flexibility.

One of the key benefits of Jest is its ease of use. Jest is designed to be simple and intuitive, with a user-friendly interface that makes it easy to write and run tests. It provides a range of powerful features and tools for testing, including mock functions, snapshot testing, and code coverage reports. These tools enable developers to write more comprehensive and reliable tests, and to identify and fix bugs more quickly and efficiently.

Another advantage of Jest is its speed and performance. Jest is optimized for speed and efficiency, and is designed to run tests quickly and reliably. It uses a range of advanced techniques and algorithms to minimize the time required to run tests, including parallelization, caching, and intelligent test scheduling. This makes Jest a great choice for large and complex test suites, where performance and reliability are critical.

4.2 Hardware Requirements

Works on Mobile or Laptop which is having a browser. The Device should be able to run JavaScript. JavaScript should be enabled to use the website.

4.3 User Requirements

User Should have a device that can run JavaScript applications. It is recommended to have a camera to the device to upload some photos of outlets.

4.4 Input and Output Requirements

For Text Input it is advised to use any keyboard. For pictorial inputs it is advised to having any camera. For output it should have some display and a browser.

5. Non-Functional Requirements

Following are the non-functional requirements will be there in the insurance to the internet:

- Secure access to Student's and Warden confidential data.
- 24X7 availability.
- Better component design to get better performance at peak time.
- Flexible service-based architecture will be highly desirable for future extension.

Non-Functional Requirements define system properties and constraints. Various other Non-Functional Requirements are:

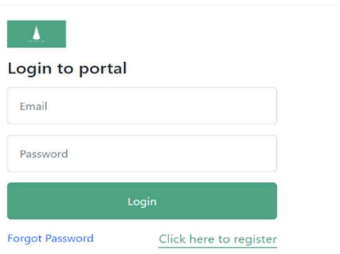
- **Accessibility**
- **Availability**
- **Portability**
- **Recoverability**

- **Reliability**
- **Security**
- **Expandability**
- **Maintainability**

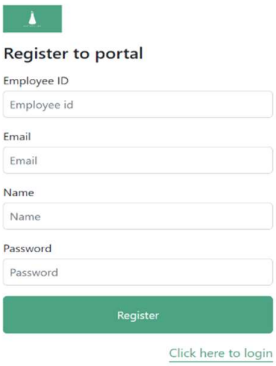
My Learning throughout the Internship

1. **HTML, CSS –** 10 days
2. **Basic source code management using git –** 2 days
3. **JavaScript –** 4 days
4. **ES6 & above new features** – 4 days
5. **Node.js deep dive –** 10 days
6. **SQL basics –** 4 days
7. **ORM - Sequelize –** 3 days
8. **TypeScript** – 5 days
9. **React.js + Redux -** 8 days
10. **Tasks**
    a. Completed lot of assignment at the time of training
    b. To-Do-List - task
    c. Review UI – task
    d. Mini project- WAL Pulse

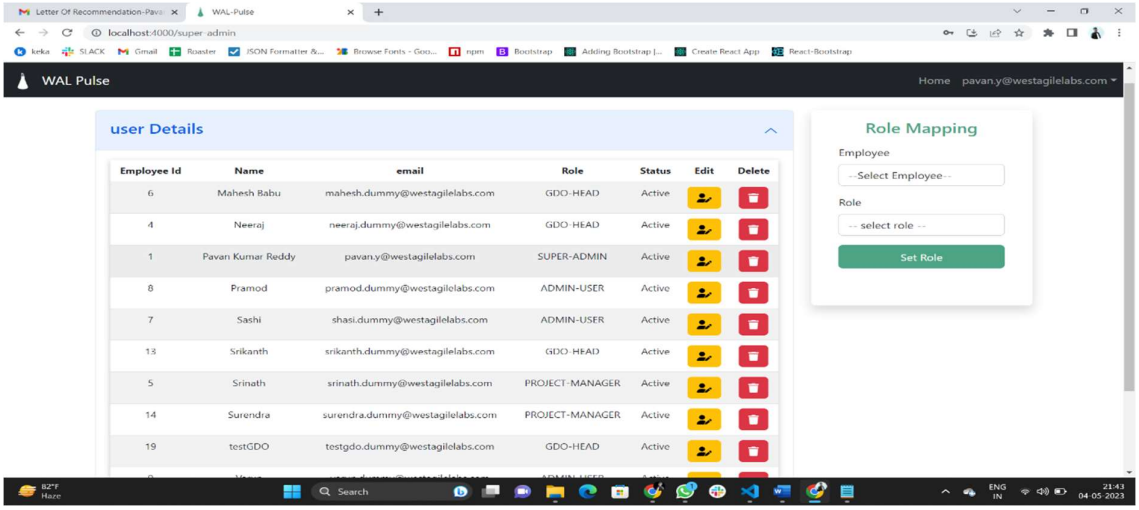
Login Page



Registration Page

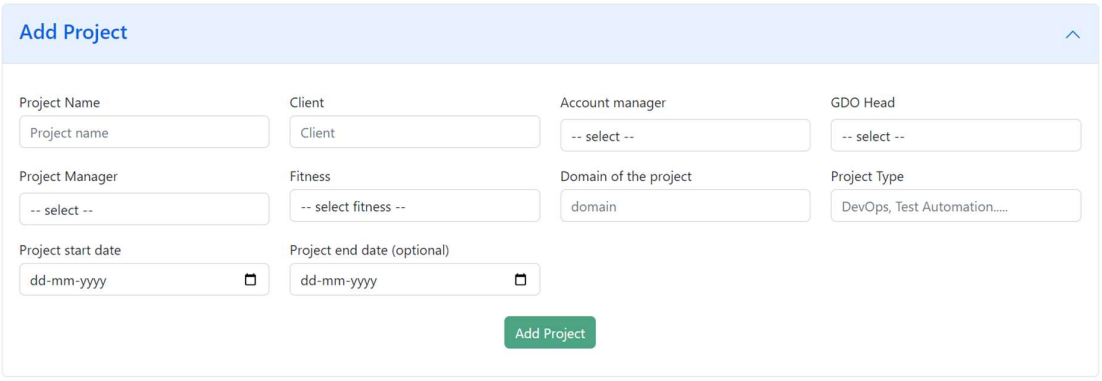


Super Admin Page



Admin User Page

Add Project



Project Portfolio:

Projects Portfolio

Click at anywhere on the project details to get detailed view of particular project

Project Id	Project Name	Client	Account Manager	GDO Head	Project Maganer	Fitness	Status	Start Date	End Date	Edit
15	testing	testing	6	19	14	amber	In-Progress	2023-04-03	2023-04-04	
11	new project	client	1	4	5	amber	In-Progress	2023-04-01	-	
10	new Project1	New Client	1	4	5	amber	In-Progress	2023-03-29	-	
5	Test Project	Test	6	19	14	green	In-Progress	2023-03-14	-	
4	Online OutPass	RGUKT	6	4	5	red	In-Progress	2023-03-14	-	
2	Online OutPass System	RGUKT	6	4	5	amber	In-Progress	2023-03-14	-	
1	WAL Pulse project	West Agile Labs	6	4	5	green	In-Progress	2023-03-13	-	

All Concerns:

All Concerns

Concern Id	Project Id	Project Name	GDO Head	Project manager	Concern Description	Severity	Status	Raised On	Mitigated On
6	5	Test Project	19	14	testing	low	Raised	2023-04-03	-
5	11	new project	4	5	testing	low	Raised	2023-04-03	-
4	11	new project	4	5	testing	medium	Raised	2023-03-31	-
3	2	Online OutPass System	4	5	TEsting WAL Pulse project Note Is is only testing purpose	medium	Raised	2023-03-28	-
2	1	WAL Pulse project	4	5	Here is my concern 2 for project 2	medium	Raised	2023-03-10	-
1	1	WAL Pulse project	4	5	Here is my concern 1 for project 1	medium	Raised	2023-03-10	-

All resource requests:

All Resource Requests

Request Id	Project Id	Project Name	Project GDO	Request Description	Requested On
20	10	new Project1	4	testing toast	2023-03-31
19	10	new Project1	4	testing toast	2023-03-31
18	1	WAL Pulse project	4	1234	2023-03-30
16	1	WAL Pulse project	4	sdf	2023-03-27
15	1	WAL Pulse project	4	fef	2023-03-27
14	1	WAL Pulse project	4	fef	2023-03-27
13	1	WAL Pulse project	4	vfv	2023-03-27
12	1	WAL Pulse project	4	vfv	2023-03-27
11	4	Online OutPass	4	sddf	2023-03-27
10	4	Online OutPass	4	sddf	2023-03-27
9	1	WAL Pulse project	4	dff	2023-03-27
8	1	WAL Pulse project	4	dff	2023-03-27