

# **INTERNSHIP (3181601)**

A PROJECT REPORT

*Submitted by*

**Panchal Darshan Kanubhai**

**200280116111**

*In partial fulfillment for the award of the degree of*

**Bachelor of Engineering**

*In*

**Information Technology**

**L.D. College of Engineering, Ahmedabad**



**Gujarat Technological University, Ahmedabad**

**May, 2024**



## **L D College of Engineering**

Opp Gujarat University,  
Navrangpura, Ahmedabad – 380015  
Gujarat, India

### **CERTIFICATE**

This is to certify that the internship report submitted along with the project entitled **Internship** has been carried out by **Panchal Darshan Kanubhai** under my guidance in partial fulfilment for the degree of Bachelor of Engineering in **Information Technology**, 8<sup>th</sup> Semester of Gujarat Technological University, Ahmedabad during the academic year 2023-24.

Prof. Alka Patel

**Internal Guide**

Dr. Hiteishi Diwanji

**Head of the Department**

Project ID: 416318

**Internship certificate**





## **L D College of Engineering**

Opp Gujarat University,  
Navrangpura, Ahmedabad – 380015  
Gujarat, India

### **DECLARATION**

I hereby declare that the Internship report submitted along with the Project entitled **Internship** submitted in partial fulfilment for the degree of Bachelor of Engineering in **Information Technology** to Gujarat Technological University, Ahmedabad, is a bonofide record of original project work carried put by me at **eSparkBiz Technologies PVT. LTD** under the supervision of **Prof.Alka Patel** that no part of this report has been directly copied from any students' report or taken from any other source without providing due reference.

Name of the Student

Sign of the Student

**Darshan Kanubhai Panchal**

## ACKNOWLEDGEMENT

The successful completion of any project depends upon the co-operation of many individuals. Through this brief note I would like to acknowledge the help of the individuals who have directly or indirectly contributed towards the completion of my project.

First of all, I would like to express my deepest sense of gratitude to the leading team of **eSparkBiz Technologies PVT. LTD, Ahmedabad** for providing me an opportunity to carry on my project report in prestigious organization. Hence, I take this opportunity to put on record my sincere appreciation and gratitude to **Mr. Harikrishna Kundariya (CEO)** of eSparkBiz, Ahmedabad for granting me permission to carry on my project.

I also express my indebtedness to **Mr. Chintan Gor (CTO)**, software development training mentor at eSparkBiz Technologies, Ahmedabad for their kind co-operation, valuable suggestion, guidance and constructive criticism. I would like to thank our HOD **Dr. Hiteishi Diwanji** and my faculty guide **Prof. Alka Patel** for their valuable inputs for my project.

I also heartily wish my deepest sense of reverence to **eSparkBiz Developer Team** for his kind co- operation in each and every way. Last but not the least I would like to thanks my affectionate parents without who's blessing the study could not have been possible.

(Darshan Panchal)

## ABSTRACT

During my internship at eSparkBiz Technologies Pvt Ltd in Ahmedabad, my primary focus was on enhancing accessibility and ensuring quality assurance for their web applications. While my core expertise lies in MERN Stack, I primarily leveraged these skills to make dynamic web-pages with user-friendly interfaces.

During my internship, I delved into MERN stack development, focusing on enhancing the Miova project - a groundbreaking drag-and-drop email builder designed exclusively for internal business communications. Recognizing the limitations of existing tools like Mailchimp, primarily tailored for B2C marketing, Miova aims to address the unique needs of businesses by offering comprehensive metrics essential for assessing the effectiveness of internal communications.

My contributions involved leveraging React for crafting intuitive graphical user interfaces (GUIs), ensuring a seamless user experience that simplifies the email creation process for individuals unfamiliar with email building software. By harnessing the power of MongoDB, Express.js, React, and Node.js, I collaborated on developing a robust platform that empowers businesses to create more engaging communication emails while providing valuable insights into team and individual engagement metrics.

Throughout this endeavor, I remained dedicated to the overarching goal of delivering high-quality software solutions that meet the diverse needs of businesses while ensuring accessibility for all users. This experience not only bolstered my technical proficiency in the MERN stack but also enriched my understanding of software development methodologies and best practices, fostering professional growth and confidence in tackling real-world challenges in project development.

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## List of Abbreviations

- **QA** – Quality Assurance
- **API**– Application Programming Interface
- **UI/UX**– User Interface / User Experience
- **CMS** – Content Management System
- **TEI** – Technology Enhanced Assessment System
- **RDP** – Remote Desktop Protocol

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## **Chapter-1: Overview of the Company**

### **1.1 About Company**

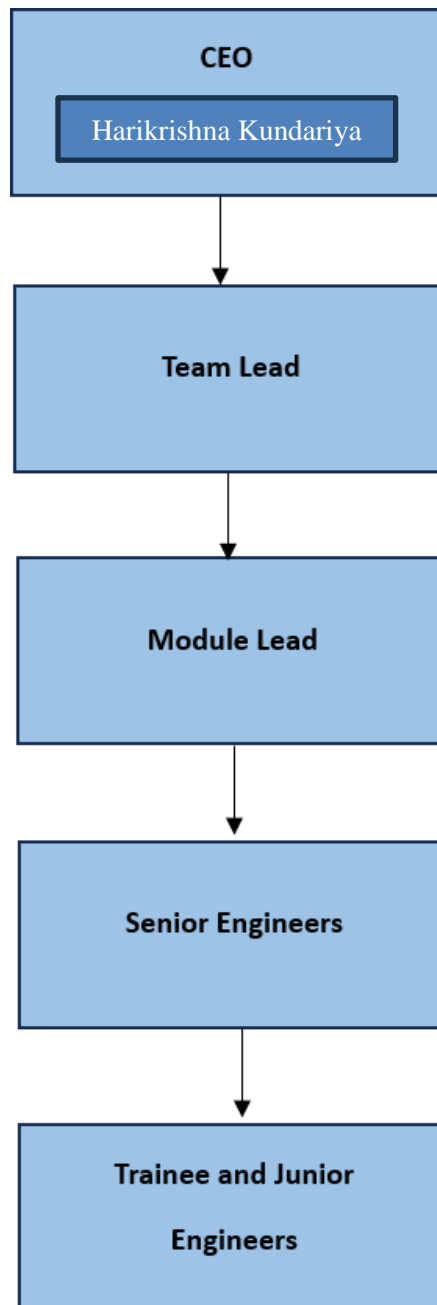
eSparkBiz, a CMMI level 3 and ISO 9001:2008 certified company has established itself as a leading Software and web development solution provider in the IT sector. With over 300+ trained and enthusiastic software engineers and more than 12 years of providing service, we have recorded 1000+ successful project deliveries all over the globe. eSparkBiz is a one-stop solution for all your technological needs and takes care of all your requirements, right from project ideation to development, thorough testing, and service after sales.

We use cutting-edge technology and tools to give the best solutions to our esteemed clients, and not-to-mention, we also follow an agile software development methodology to develop software. We also provide numerous hiring models when you wish to hire our dedicated team of developers.

### **1.2 Services**

- Custom Software Development
- Web Application Development
- Mobile Application Development (Android & iOS)
- IoT App Development
- Node JS Development
- Python Application Development
- ReactJS/React Native
- SaaS Product Development
- Web App Development
- E-commerce Development
- Enterprise Solution
- Custom Solution
- MVP Development

## 1.1 Organization Chart



## 1.3 Organization Chart

### **1.4 Company Size:**

- 201-500 employee
- 2 offices: India (Ahmedabad), U(America)

## **Chapter-2: Overview of the different department of the organization and Layout of the process being carried out in company**

### **2.1 Details about the work being carried out in each department**

#### **Product Engineering**

Focuses on collaborative development techniques to reliably transform product vision into production instructional experiences and systems.

#### **Software Simulation**

Used to train students to be effective user of sophisticated software systems

#### **Web App Development**

Successfully leveraged HTML5 and React technology to help client stay ahead of their competition in the rapidly changing mobile world by developing native apps for mobile devices as well as web applications that run in the devices' browsers.

#### **Automation**

Selenium , Playwright, RPA, UI-Path and more for Automation and bot creation.

#### **Desktop Application**

Offline Gui Interface, pedagogical practices, design thinking, and disruptive technology.

#### **Design & Usability**

The core approach is Design Thinking – a human-centered, prototype-driven process for innovation

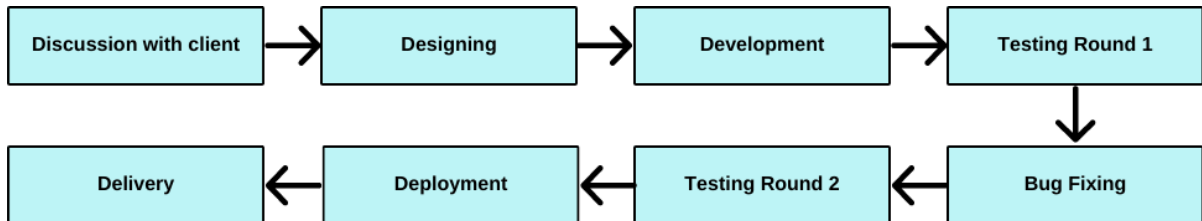
#### **QA & Testing**

Perform variety of tests, such as unit tests, regression tests, functional tests, non-functional tests, system tests, user acceptance tests and release tests.

## 2.2 Documentation and Devices used

- Desktops and Mobile Devices

## 2.3 Schematic Layout of operation for development of end product



2.3 Development Process

## 2.4 Details about each stage of production

### Discussion with client

This includes the requirement gathering from the client and then analyzing the need of the client. The company then provides the delivery time and estimated cost of the product.

### Designing

This phase includes the UI/UX designing of the software as per the need of the client and then that design is provided to the testers and developers.

### Development

The developers start designing the software and simultaneously the testing team starts writing user stories and the test cases

### Testing Round 1

When the developer finishes the basic build, the tester starts testing it on different criteria like functionality, content, performance, cross browser, resolutions, accessibility, etc. The issues and bugs found are reported.



### **Bug Fixing**

When the testers are done with the round 1 of testing the developers starts fixing bug and the build is simultaneously uploaded on the site

### **Testing Round 2**

After successful bug fixing final testing round is done which focuses only on the bugs and issues that were previously reported.

### **Deployment**

The final product is then uploaded on the main prod site

### **Delivery**

The product is delivered to the client.

## **Chapter-3: Introduction to Internship**

### **3.1 Internship Summary**

The internship program at eSparkBiz Technologies PVT. LTD is meticulously designed to offer students a comprehensive field experience, blending academic knowledge with practical application. This unique opportunity enables students to delve into real-world projects and showcase their skills through a major research endeavor.

As a participant in the internship program, my focus was on leveraging automation and full-stack development skills within the Miova project. This entailed developing innovative solutions to enhance accessibility and usability for users, including those with disabilities or impairments.

In my role as an automation specialist, I utilized cutting-edge technologies to streamline processes and improve efficiency. By implementing automated testing frameworks and techniques, I contributed to the development of robust and reliable software solutions that met the highest standards of accessibility and usability.

Additionally, as a full-stack developer, I played a pivotal role in the Miova project, collaborating on the design, development, and implementation of web applications. My responsibilities ranged from front-end development using React, HTML, CSS, and JavaScript to back-end development with Node.js, Express, and MySQL. This holistic approach allowed me to gain valuable insights into the entire software development lifecycle, from conceptualization to deployment.

The internship program at eSparkBiz Technologies provided me with a unique opportunity to bridge the gap between theoretical knowledge and practical application. Through hands-on experience and project-based learning, I honed my technical skills, gained valuable industry insights, and made meaningful contributions to the accessibility and usability of software solutions.

### **3.2 Purpose**

The purpose of my work on the Miova project was to ensure the accessibility and user-friendliness of the web application for all users. It was imperative that individuals could seamlessly navigate the application using various assistive technologies such as screen readers, voice commands, and keyboards. By prioritizing accessibility, we aimed to guarantee that every element of the web application was accessible regardless of the user's preferred method of navigation. This approach was essential to ensure inclusivity and to prevent any user from missing out on important elements due to accessibility barriers.

### 3.3 Objective

The purpose of the internship is to provide an opportunity for individuals to gain hands-on experience and exposure to a specific job, profession or industry. The internship allows the intern to learn the chosen career path is the right fit, if they have the necessary skills and education, and if they enjoy the work.

The objectives of the internship program include:

**Performance Testing:** The internship program provides the intern with the opportunity to gain experience and learn the skills required for the job. This helps the intern to determine if the career is a good fit and if they possess the necessary skills and knowledge to perform well in the job.

**Network Building:** The internship provides an opportunity for interns to build business contacts, which can be helpful for future job prospects or projects. By meeting professionals in their field of interest, interns can learn about career paths, gain device, and potentially secure a job referral.

**Increased Confidence:** Through the internship program, interns gain hands-on experience and develop a clear understanding of their strengths and weaknesses. This experience can lead to increased confidence in job hunting and during interviews.

**Potential for Future Employment:** If the intern performs well during their internship, it may lead to job offer. Employers often prefer to hire individuals who have already proven themselves during their internship, as they have already demonstrated their skills, work ethic, and fit within the company culture.

In summary, the aim and objectives of the internship program are to provide a valuable learning experience, build professional connections, increase confidence, and potentially lead to future employment opportunities.

### 3.4 Scope of Internship Project

The scope of the Miova project revolves around the development of a drag-and-drop email builder designed specifically for internal business communications. Unlike existing tools such as Mailchimp, which are primarily tailored for B2C marketing purposes, Miova focuses on providing a user-friendly platform for creating engaging communication emails and gaining valuable insights into team and individual engagement.

Key aspects of the project scope include:

**1. Email Building:** Miova aims to develop an intuitive drag-and-drop interface for creating internal business emails. The platform will enable users, especially those unfamiliar with email building software, to design visually appealing and effective communication emails effortlessly.

**2. Integration with Business Systems:** Miova will integrate seamlessly with existing business systems to facilitate data synchronization and streamline communication workflows. Integration with platforms like Node.js, Laravel, and Stripe or Paddle for payment and subscription management will enhance the functionality and usability of the application.



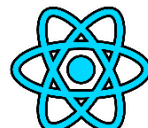


**3. Accessibility and Usability:** Ensuring accessibility and usability for all users is a priority in the development of Miova. The web application will be designed to accommodate individuals with disabilities or impairments, allowing for seamless navigation and interaction using assistive technologies.

**4. Legal Compliance and Reputation:** Miova will prioritize legal compliance and data security to safeguard user information and maintain trust. The project will adhere to relevant regulations such as GDPR and implement robust security measures to protect sensitive data.

**5. Market Penetration and Sales:** Miova aims to penetrate the market by offering a unique solution for internal business communications. By targeting businesses in need of user-friendly email building software, Miova seeks to increase sales and establish itself as a leading platform in the industry.

In summary, the Miova project aims to develop an innovative and user-centric solution for internal business communications, with a focus on accessibility, legal compliance, and market penetration.

### 3.5 Tools & Technology

<b>NodeJS</b>	 <b>Version 21.7.3</b>
<b>REST API</b>	
<b>React.js</b>	 <b>Version 18.2.0</b>
<b>Mysql</b>	 <b>Version 8.3.0</b>
<b>Stripe</b>	 <b>Version 1.33.0</b>

### **3.6 Internship Planning**

#### **3.6.1 Internship Development Approach and Justification**

During my internship at eSparkBiz Technologies Pvt Ltd, I will adopt a structured approach aligned with industry standards and project requirements for Miova. Here's a concise overview:

1. **Requirement Understanding:** Begin by comprehensively understanding the objectives and functionalities of the Miova project, including its drag-and-drop email building features and integration requirements.
2. **Test Planning:** Collaborate with the team to outline test scenarios, cases, and data for comprehensive testing, considering aspects such as email template creation, data synchronization, and user interaction.
3. **Execution Phase:** Initiate with Smoke QA to validate basic functionalities, followed by Round 1 testing across various browsers and devices to ensure compatibility and responsiveness.
4. **Issue Identification:** Document and prioritize any identified issues, working closely with developers to ensure timely resolution and alignment with project goals.
5. **Regression Testing:** Conduct regression testing to validate the overall stability and functionality of Miova, ensuring that new features and fixes do not adversely impact existing functionality.

**Justification:** This approach ensures adherence to best practices, thorough testing, and collaboration, ultimately leading to the delivery of a high-quality Miova solution tailored to meet the needs of internal business communications.

#### **3.6.2 Roles and Responsibilities**

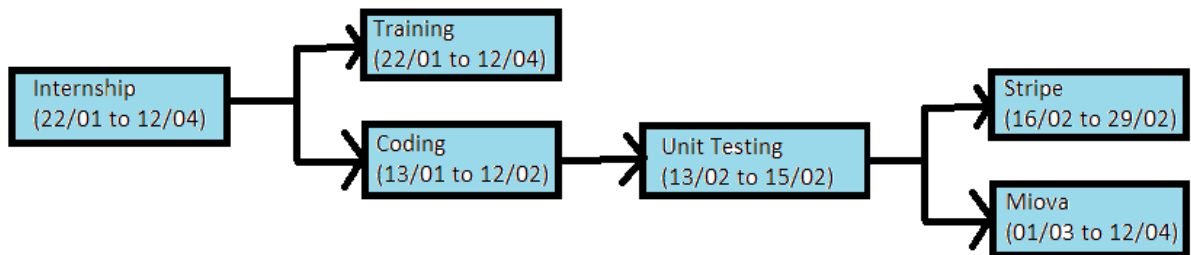
During my internship at eSparkBiz Technologies Pvt Ltd, I was tasked with the following responsibilities as a full-stack developer and automation specialist on the Miova project:

1. **Development:** Collaborating on the design, implementation, and testing of features using technologies such as React, Node.js, Express, Laravel, and Stripe or Paddle for payment and subscription management, adhering to the drag-and-drop email builder concept.
2. **Unit Testing:** Writing and executing unit tests to ensure the reliability and functionality of individual components within the Miova application, considering aspects like email template creation, data synchronization, and user interaction.
3. **Accessibility Considerations:** Incorporating accessibility principles to ensure usability for users with disabilities, such as implementing features for seamless navigation and interaction using assistive technologies.

4. Collaboration: Engaging in regular discussions with the development team to address issues, propose solutions, and ensure alignment with project objectives and requirements for Miova.

1. Documentation: Documenting code and project updates to facilitate knowledge sharing and maintain project transparency.

### 3.7 Project / Internship Scheduling (Gantt/PERT/Network Chart)



3.7 PERT Chart



## Chapter-4: System Analysis

### 4.1 Study of Current system

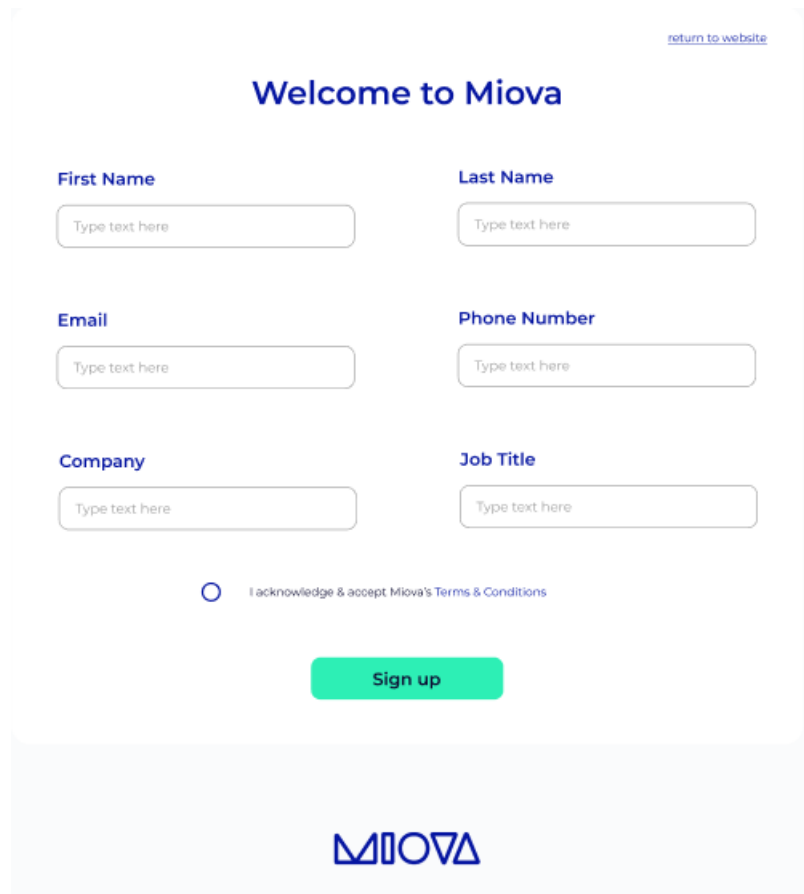
#### 4.1 Study of Current System

No.	System Analysis	Answers
4.1	Study of Current System	The current Data Extraction system lacks comprehensive support for Tally integration post-data extraction and downloading data in multiple formats. Additionally, it lacks a vendor-wise processing modal approach.
4.2	Problems and Weaknesses of current system	<ul style="list-style-type: none"> <li>• Limited integration with Tally post-data extraction complicates reconciliation efforts and affects data accuracy and consistency.</li> <li>• The absence of multiple data format options restricts users' ability to utilize extracted data effectively, limiting analysis and reporting capabilities.</li> <li>• Lack of a vendor-wise processing modal approach makes it challenging to efficiently manage and analyze vendor-specific information and transactions.</li> <li>• Incomplete support for cross-platform compatibility hinders seamless access to extracted data across various devices and operating systems, impacting user accessibility and productivity.</li> <li>• Reliance on manual data entry in the current system increases the likelihood of errors and inconsistencies in data extraction and processing, leading to inaccuracies and inefficiencies in data management.</li> </ul>
4.3	Requirements of new system	To make it accessible for all the user.

4.4	<p>System Feasibility</p> <p>4.4.1 Does the system contribute to the overall objectives of the organization?</p> <p>4.4.2 Can the system be implemented using the current technology and within the given cost and schedule constraints</p> <p>4.4.3 Can the system be integrated with other systems which are already in place?</p>	<ul style="list-style-type: none"> <li>• Yes</li> <li>• Yes</li> <li>• Yes</li> </ul>
4.5	Activity/ Process in New System	<ul style="list-style-type: none"> <li>• Tally Integration</li> <li>• Data Download Formats</li> <li>• Vendor-wise Processing Modal</li> <li>• Cross-platform Compatibility</li> <li>• Automated Data Entry</li> <li>• Compliance with Standards</li> </ul>
4.6	Features of New System/ Proposed System	Whole site is properly accessible in world wide web and mobile device and effectively
4.7	List Main Modules/ Components/ Technology of New System	<ul style="list-style-type: none"> <li>• Tally Integration Module</li> <li>• Data Extraction Component</li> <li>• Data Download Module</li> <li>• Vendor-wise Processing Modal</li> <li>• Cross-platform Compatibility Component</li> <li>• Automated Data Entry System</li> <li>• Compliance Module with Standards and Regulations</li> </ul>
4.8	Selection of Hardware/ Software/ Approached and Justification	<p>Hardware:</p> <ul style="list-style-type: none"> <li>• Tablets</li> <li>• Mobile Phone</li> <li>• Desktop</li> <li>• Laptops</li> </ul> <p>Software</p> <ul style="list-style-type: none"> <li>• Postman</li> <li>• VSCode</li> <li>• Mysql Workbench</li> </ul>

## Chapter-5: System Design

### 5.1 System Design & Methodology



The image shows a registration form for 'Miova'. At the top right, there is a link 'return to website'. The main heading is 'Welcome to Miova'. Below this, there are six input fields arranged in two columns: 'First Name', 'Last Name', 'Email', 'Phone Number', 'Company', and 'Job Title'. Each field has a placeholder text 'Type text here'. Below the input fields, there is a radio button followed by the text 'I acknowledge & accept Miova's Terms & Conditions'. A green 'Sign up' button is positioned below the terms and conditions. At the bottom of the form, the 'MIOVA' logo is displayed.

[return to website](#)

### Welcome to Miova

**First Name**  
Type text here

**Last Name**  
Type text here

**Email**  
Type text here

**Phone Number**  
Type text here

**Company**  
Type text here

**Job Title**  
Type text here

☐ I acknowledge & accept Miova's Terms & Conditions

**Sign up**

**MIOVA**

#### 5.1 Register

The image shows two side-by-side web forms for Miova. The left form is for logging in, titled 'Welcome back', and contains fields for 'Email' and 'Password', a 'Sign in' button, and a 'Create an account' link. The right form is for password reset, titled 'Welcome to Miova', and contains fields for 'Password' and 'Repeat Password', a 'Save Password' button, and a 'return to website' link. Both forms have a 'return to website' link in the top right corner and the Miova logo at the bottom.

## 5.2 Login

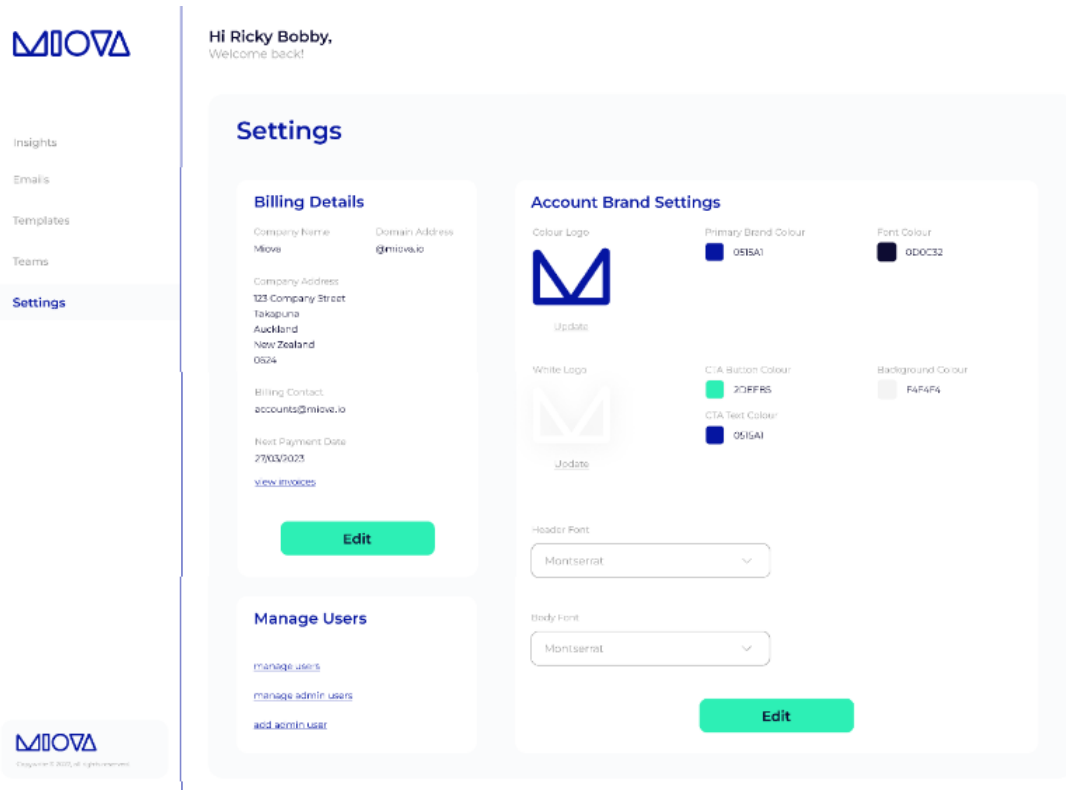
The image shows the Miova dashboard. A modal window is displayed in the center with the title 'Welcome to Miova' and the text: 'To utilise sending emails with Miova we require all users to verify their email. Please verify your email at the link below to get started. By using the platform you acknowledge & accept Miova's [Terms & Conditions](#)'. Below the text is a 'Verify now' button and a link 'Why is this needed?'. The dashboard background shows a sidebar with 'Insights', 'Emails', 'Templates', 'Teams', and 'Settings'. The main content area displays a table with columns 'Rate', 'Audience Score', and 'Response Rate'. The table has three rows of data.

	Rate	Audience Score	Response Rate
	4.25	90%	
	4.56	79%	
	5	60%	

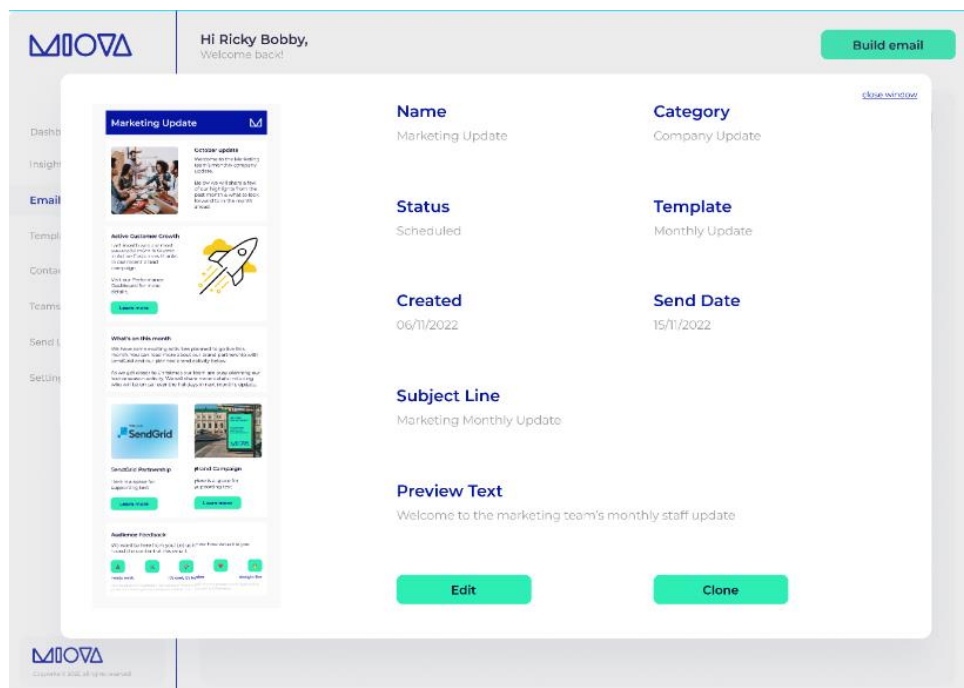
Below the table, there is a table with columns 'Legal', 'Digital Operations', and 'Sales'. The table has three rows of data.

	Legal	Digital Operations	Sales
	91.8%	88.5%	62.7%
	97%	94%	85%
	72	79	79

## 5.3 Dashboard



## 5.4 Profile



## 5.5 Emails

## Templates

Search templates



Filter

6/5

Name	Last Use	Created By
Monthly Update	06/11/2022	Ricky Bobby
All Team Notice	06/11/2022	Ricky Bobby
New Starter	27/09/2022	Ricky Bobby
Company Announcement	12/04/2022	Napoleon Dynamite
Team Update	07/09/2022	Cal Norton
Campaign Update	06/06/2022	Ricky Bobby
All Staff Meeting	08/04/2022	Ricky Bobby
Product Update	06/04/2022	Ricky Bobby
Performance Update	15/02/2022	Cal Norton
Christmas Hours	15/12/2021	Ricky Bobby

### Template Preview

# Marketing Update



## October update

Welcome to the bi-monthly bi-monthly company update.

Below we will share a few of our highlights from the past month & share to link forward to in the months ahead.

### Active Customer Growth

Last month we saw our most significant MQL to Growth in Active Customers thanks to our recent brand campaign.

Visit our Performance Dashboard for more details.

[Learn more](#)

### What's on this month

We have some exciting activities planned to get this little month, you can read more about our below plans with brand and our plan next brand activity below.

As we get closer to Halloween our focus on team planning our festive season activity. We will share more details as to what we'll be up to over the holidays in next month's update.

Edit

## 5.6 Templates

## Teams

Search teams

Filter

1519

Name	Type	Created By
Executive	Primary	Ricky Bobby
Marketing	Primary	Ricky Bobby
Marketing - NZ	Secondary	Ricky Bobby
Marketing - Brand	Secondary	Napoleon Dynamite
Finance	Primary	Cal Norton
Legal	Primary	Ricky Bobby
Customer Success	Primary	Ricky Bobby
Customer Success - UK	Secondary	Ricky Bobby
IT	Primary	Cal Norton
Digital Operations	Primary	Ricky Bobby

[More >](#)  
Page 1 of 2

### Team Preview

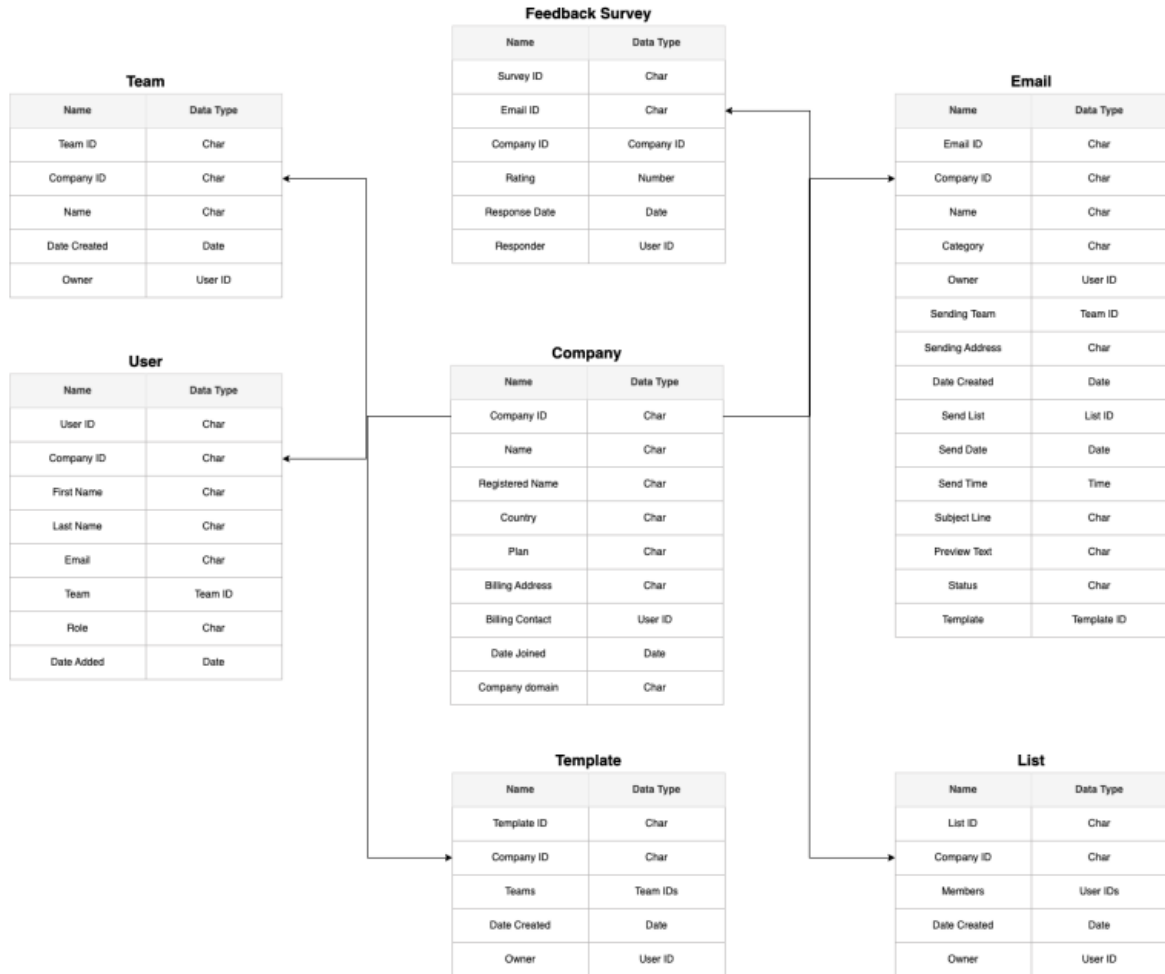
First Name	Email
James	james@mluova.com
Sammy	sammy@mluova.com
Cosper	cosper@mluova.com
Ragnar	ragnar@mluova.com
Chris	chris@mluova.com

[View all >](#)

## Contacts

View

# Data Architecture



## 5.8 UML Diagram

## 5.2 Database Design

```
CREATE TABLE Company (  
    Company_ID CHAR(255) NOT NULL PRIMARY KEY,  
    Name VARCHAR(255) NOT NULL,  
    Domain VARCHAR(255) NOT NULL,  
);
```

```
CREATE TABLE Team (  
    Team_ID CHAR(255) NOT NULL PRIMARY KEY,  
    Name VARCHAR(255) NOT NULL,  
    Company_ID CHAR(255) NOT NULL,  
    FOREIGN KEY (Company_ID) REFERENCES Company(Company_ID)  
);
```

```
CREATE TABLE User (  
    User_ID CHAR(255) NOT NULL PRIMARY KEY,  
    First_Name VARCHAR(255) NOT NULL,  
    Last_Name VARCHAR(255) NOT NULL,  
    Email VARCHAR(255) NOT NULL,  
    Team_ID CHAR(255) NOT NULL,  
    Role VARCHAR(255) NOT NULL,  
    Date_Added DATE NOT NULL,  
    Date_Joined DATE NOT NULL,  
    FOREIGN KEY (Team_ID) REFERENCES Team(Team_ID)  
);
```

```
CREATE TABLE List (  
    List_ID CHAR(255) NOT NULL PRIMARY KEY,  
    Name VARCHAR(255) NOT NULL,  
    Company_ID CHAR(255) NOT NULL,  
    Date_Created DATE NOT NULL,  
    FOREIGN KEY (Company_ID) REFERENCES Company(Company_ID)  
);
```



```
CREATE TABLE Survey (  
    Survey_ID CHAR(255) NOT NULL PRIMARY KEY,  
    Company_ID CHAR(255) NOT NULL,  
    Name VARCHAR(255) NOT NULL,  
    Rating INT NOT NULL,  
    Response_Date DATE NOT NULL,  
    Created_Date DATE NOT NULL,  
    Responder_User_ID CHAR(255) NOT NULL,  
    Category VARCHAR(255) NOT NULL,  
    Owner_User_ID CHAR(255) NOT NULL,  
    FOREIGN KEY (Company_ID) REFERENCES Company(Company_ID),  
    FOREIGN KEY (Responder_User_ID) REFERENCES User(User_ID),  
    FOREIGN KEY (Owner_User_ID) REFERENCES User(User_ID)  
);
```

```
CREATE TABLE Template (  
    Template_ID CHAR(255) NOT NULL PRIMARY KEY,  
    Name VARCHAR(255) NOT NULL,  
    Company_ID CHAR(255) NOT NULL,  
    Owner_User_ID CHAR(255) NOT NULL,  
    Date_Created DATE NOT NULL,  
    FOREIGN KEY (Company_ID) REFERENCES Company(Company_ID),  
    FOREIGN KEY (Owner_User_ID) REFERENCES User(User_ID)  
);
```

```
CREATE TABLE Team_Survey (  
    Team_ID CHAR(255) NOT NULL,  
    Survey_ID CHAR(255) NOT NULL,  
    FOREIGN KEY (Team_ID) REFERENCES Team(Team_ID),  
    FOREIGN KEY (Survey_ID) REFERENCES Survey(Survey_ID)  
);
```

```
CREATE TABLE Send (  
    Survey_ID CHAR(255) NOT NULL,  
    List_ID CHAR(255) NOT NULL,  
    Send_Date DATE NOT NULL,  
    Send_Time TIME NOT NULL,  
    Subject_Line VARCHAR(255) NOT NULL,  
    Preview_Text VARCHAR(255) NOT NULL,  
    Status VARCHAR(255) NOT NULL,  
    Template_ID CHAR(255) NOT NULL,  
    Billing_Contact_User_ID CHAR(255) NOT NULL,  
    Billing_Address VARCHAR(255) NOT NULL,  
    Sending_Address VARCHAR(255) NOT NULL,  
    FOREIGN KEY (Survey_ID) REFERENCES Survey(Survey_ID),  
    FOREIGN KEY (List_ID) REFERENCES List(List_ID),  
    FOREIGN KEY (Template_ID) REFERENCES Template(Template_ID),  
    FOREIGN KEY (Billing_Contact_User_ID) REFERENCES User(User_ID)  
);  
  
CREATE TABLE User_List (  
    User_ID CHAR(255) NOT NULL,  
    List_ID CHAR(255) NOT NULL,  
    FOREIGN KEY (User_ID) REFERENCES User(User_ID),  
    FOREIGN KEY (List_ID) REFERENCES List(List_ID)  
);
```

## 5.9 Schema Design

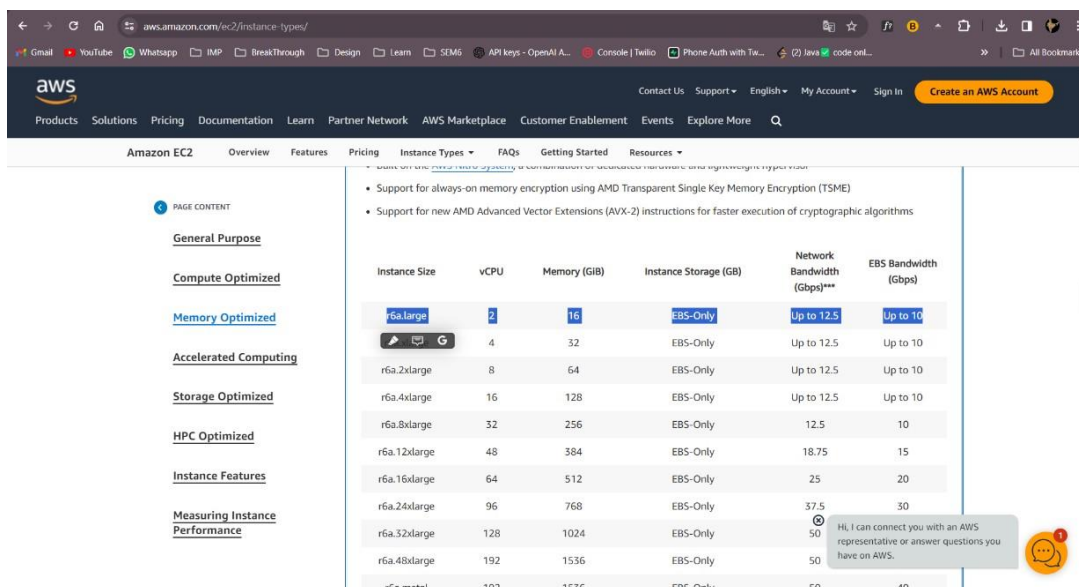
## Chapter-6: Implementation

### 6.1 Implementation Environment

We've opted for hosting our web application on an AWS instance r6a.large for its balance of performance and memory capacity.

Leveraging AWS's reliable infrastructure and Graviton2 processors, we ensure efficient operations and scalability to meet our application's demands.

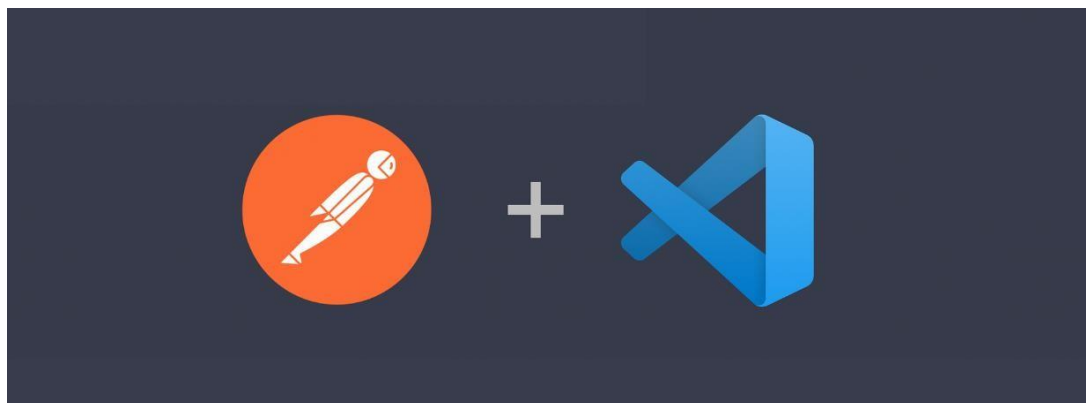
Also Vs Code and Postman for Implementation & Testing



The screenshot shows the AWS EC2 Instance Types page. The 'r6a.large' instance type is highlighted in the table. The table lists various instance types with their specifications.

Instance Size	vCPU	Memory (GiB)	Instance Storage (GB)	Network Bandwidth (Gbps)**	EBS Bandwidth (Gbps)
<b>r6a.large</b>	<b>2</b>	<b>16</b>	EBS-Only	Up to 12.5	Up to 10
r6a.xlarge	4	32	EBS-Only	Up to 12.5	Up to 10
r6a.2xlarge	8	64	EBS-Only	Up to 12.5	Up to 10
r6a.4xlarge	16	128	EBS-Only	Up to 12.5	Up to 10
r6a.8xlarge	32	256	EBS-Only	12.5	10
r6a.12xlarge	48	384	EBS-Only	18.75	15
r6a.16xlarge	64	512	EBS-Only	25	20
r6a.24xlarge	96	768	EBS-Only	37.5	30
r6a.32xlarge	128	1024	EBS-Only	50	40
r6a.48xlarge	192	1536	EBS-Only	50	40
r6a.metal	192	1536	EBS-Only	50	40

### 6.1 Aws Instance



### 6.2 Vs Code And Postman

## 6.2 Process

MySQL chosen for Miova due to its reputation for reliability and scalability in managing structured data.



## 6.3 MySql and Workbench

**RestAPI Setup:** Established a RestAPI backend on the AWS instance, utilizing Nodejs for efficient and high-performance API development.

**API Creation:** Implemented APIs using RestAPI, integrating them with MySQL databaseschema for seamless data interaction and management.

**Route Creation:** Defined routes in RestAPI to handle various endpoints, ensuring properrequest handling and response generation.

GET	/persons/{username}/roles/{rolename}	Get a single role for a single user given the user name and role name.
POST	/persons/{username}/roles	Add a new Role to a user given the user name.
PATCH	/persons/{userName}	Partially update the information for a given user name.
PATCH	/persons/{username}/roles/{rolename}	Partially update the information for a single role given a role name for a user given a user name.
DELETE	/persons/{username}/roles/{rolename}	Delete a single role given a role name for a user given a user name.

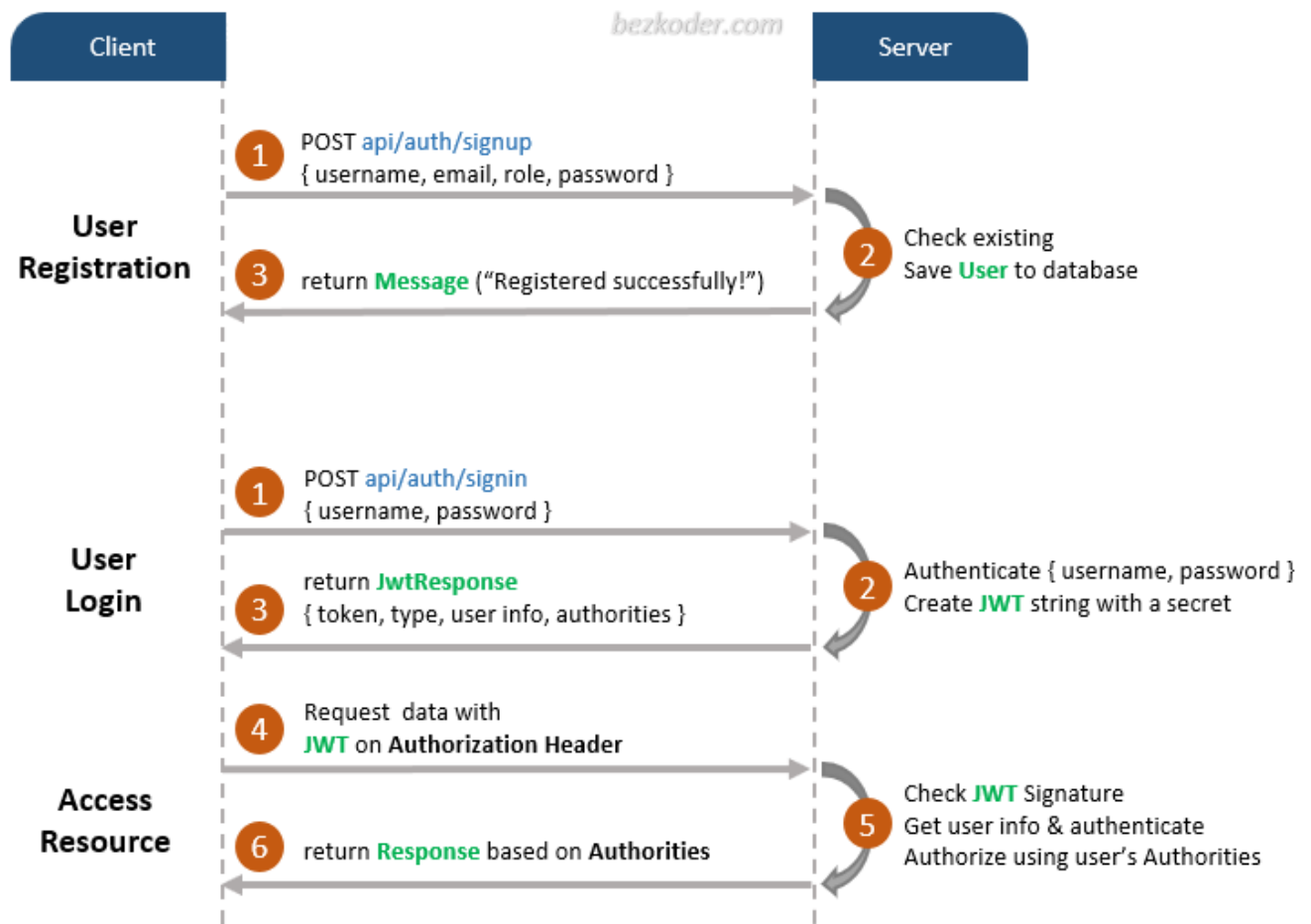
## 6.4 RestAPIs

JWT and Authentication: Implemented JWT (JSON Web Tokens) for secure authentication and authorization, safeguarding data integrity and user privacy.

Access Control: Configured access control mechanisms in RestAPI to manage user permissions and restrict access to sensitive data and functionalities.



## 6.5 Json Web Token



VV


## 6.6 Role Based Access Control

Function	User	Team Leader	Admin	Super Admin
Emails	View Previous Emails	Sent by User	All Sent Emails	All Sent Emails
	Build email	YES	YES	YES
	Edit Scheduled Email	Created by User	Created by Users Team	All Scheduled Emails
	Clone Previous Emails	Sent by User	Sent by Users Team	All Sent Emails
	Select Template	Available to User	Available to Users Team	All Templates
Templates	Schedule & Send	YES	YES	YES
	View & Preview Templates	Available to User	Available to Users Team	All Templates
	Edit Templates	Created by User	Created by Users Team	All Templates
Contacts	Add Contacts	YES	YES	YES
	Delete Contacts	YES	YES	YES
	Edit Contacts	YES	YES	YES
	Search Contacts	YES	YES	YES
Teams	View & Preview Teams	YES	YES	YES
	Edit Teams	NO	Available to Users Team	All Teams
	Create Teams	NO	Only Sub Teams or Users Team	YES
Send Lists	View & Preview Send Lists	YES	YES	YES
	Edit Send Lists	Created by User	Created by Users Team	YES
	Create Send Lists	YES	YES	YES
Settings	Update Subscription Plan	NO	NO	YES
	Change Billing Details	NO	NO	YES
	Set Brand Colours	NO	NO	YES
	Set Team Alternative Colours	NO	NO	YES
	Control Company Logo	NO	NO	YES
	Set User Permissions	NO	Up to User	YES
	Manage Team Templates	NO	Available to Users Team	YES
	Manage Available Components	NO	NO	YES
	Create Custom Components	NO	NO	YES
	Manage Personal Details	YES	YES	YES

## 6.3 Findings/ Results/ Outcomes

After reporting bug, the bug is then assigned to the developer. They replicate the issue and then debug it using appropriate methods.


Once the developer fixes that bug, the status is then changed to Resolved from New

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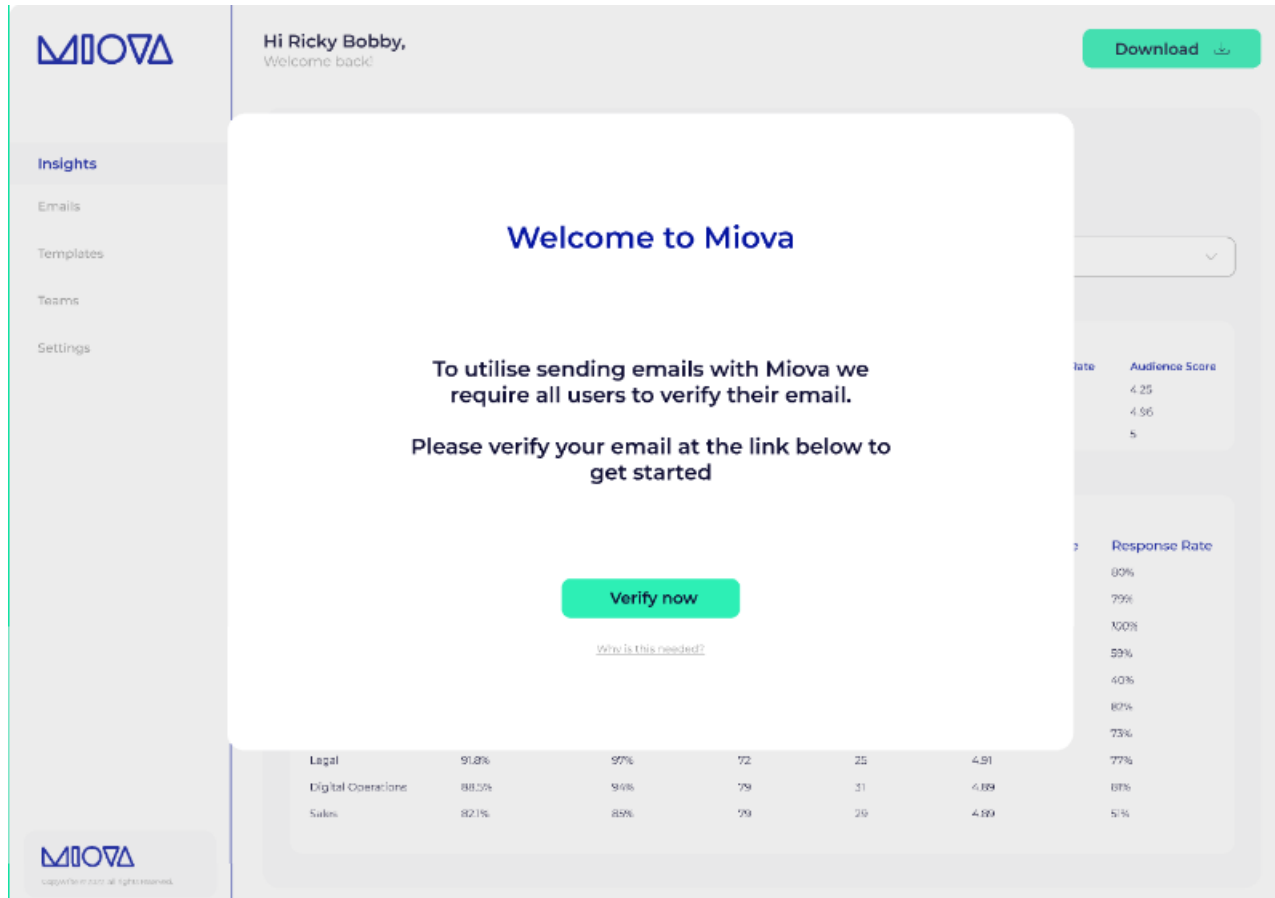
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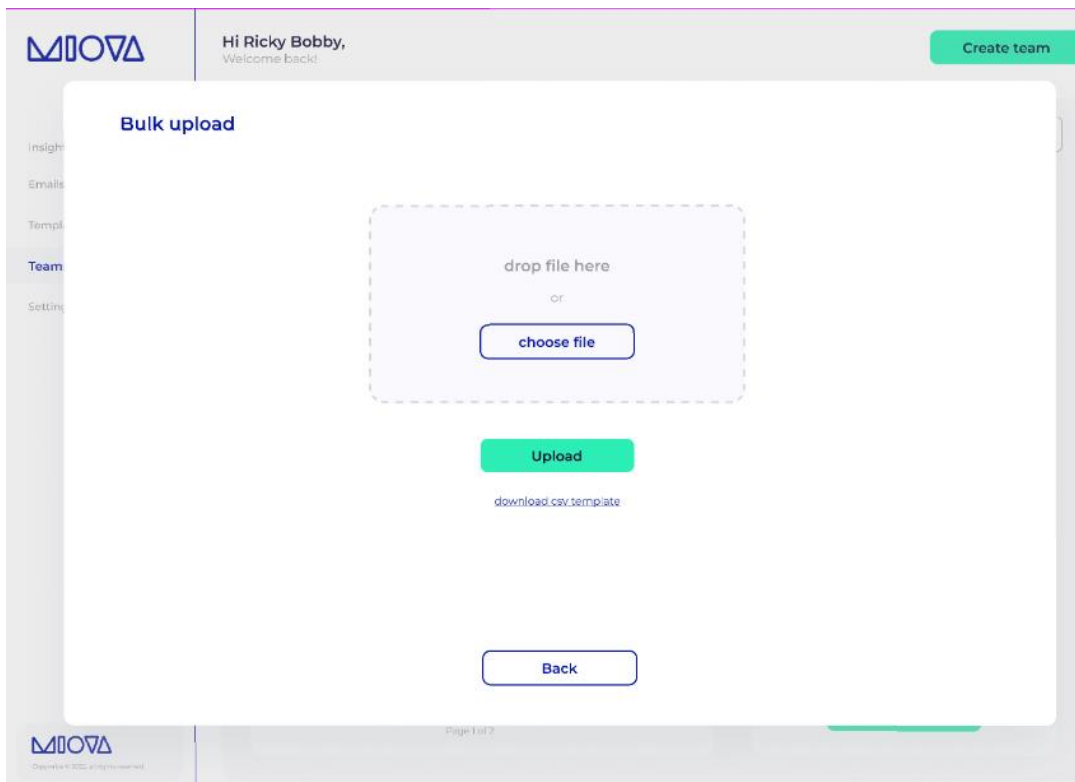
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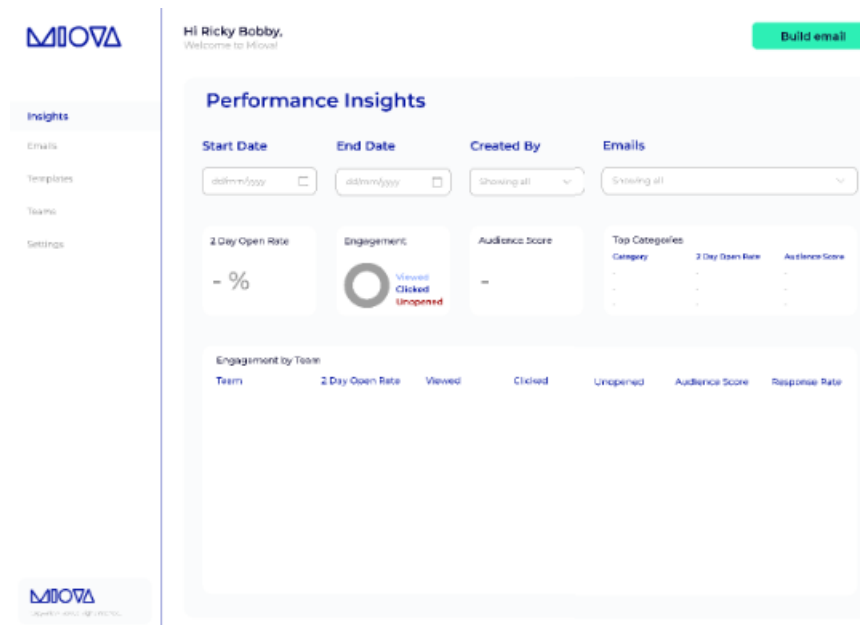


## 6.7 Coming Soon Page for Early Access





## 6.8 Upload Doc Page



## 6.9 Profile

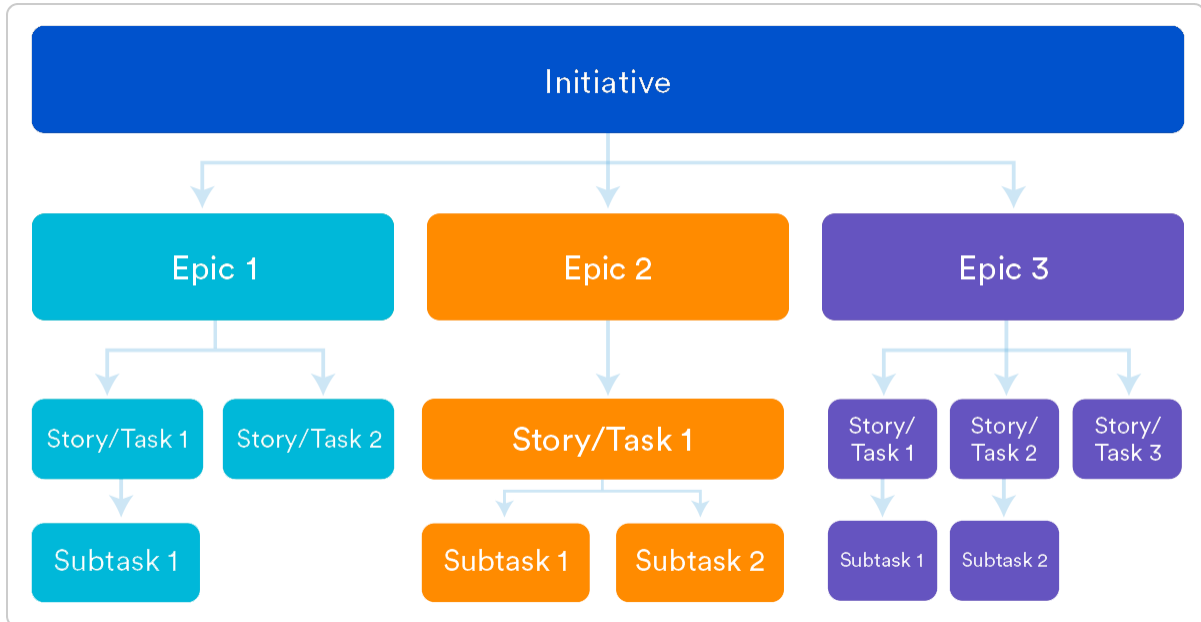
## Chapter-7: Testing

### 7.1 Testing Plan and Strategy:

#### User Stories

A user story is an informal, general explanation of a software feature written from the perspective of the end user. Its purpose is to articulate how a software feature will provide value to the customer.

It's tempting to think that user stories are, simply put, software system requirements. But they're not.



7.1

User story flowchart

#### Test Scenarios

A test scenario, sometimes called a scenario test, is the documentation of a use case. In other words, it describes an action the user may undertake with a Web Apps or app. It may also represent a situation the user may find themselves in while using that software or product.

Test Scenarios are created to ensure that every functionality a Web Apps or app offers is working as expected. It is best to gather input from clients, stakeholders, and developers to create real/accurate test scenarios. This helps effectively cover all possible user scenarios and enables comprehensive testing of all business flows of the software in question.

Test Scenarios are required to verify the entire system's performance from the users' perspective. When creating them, testers need to place themselves in the users' shoes to clarify what real-world scenarios the software will have to handle when made public.

Test Scenario for Colour Mixer			
Tab Name			
Overview	Check the UI of the page		
Header	Heading	Check help button Check the screen that opens after clicking on help button Check Close button to close help menu	
	Problem Question	Check Read out button	
Paint Mixer Tab	Text boxes	Verify text box of colour 1 Verify text box of colour 2	
	Buttons + & -	Verify + icon of colour 1 Verify - icon of colour 1 Verify + icon of colour 2 Verify - icon of colour 2	
		Verify Mix button	
	New Color button	Verify New colours Button	verify the pop up menu
	Mixer	Verify the paint mixer part	
	Table	Verify data table Verify the colour of the most recent row	
		Verify sort button	
Table Tab	Buttons	Verify Clear button	Verify the pop up menu Verify the read out button in pop up Check content of the text Verify Yes and Cancel button

7.2

## Test Scenarios

### Test Cases

A test case is a set of actions performed on a system to determine if it satisfies software requirements and functions correctly. The purpose of a test case is to determine if different features within a system are performing as expected and to confirm that the system satisfies all related standards, guidelines and customer requirements. The process of writing a test case can also help reveal errors or defects within the system.

Test cases are typically written by members of the quality assurance (QA) team or the testing team and can be used as step-by-step instructions for each system test. Testing

begins once the development team has finished a system feature or set of features. A sequence or collection of test cases is called a test suite.

## Accessibility Testing

Accessibility testing is the practice of making your web and mobile apps usable to as many people as possible. It makes apps accessible to those with disabilities, such as vision impairment, hearing disabilities, and other physical or cognitive conditions.

You need to test:

- Labels — Used by assistive technologies, like VoiceOver or NVDA.
- Text contrast — Ratio between text or images and background color.
- Hit area size — Area designated for user interaction.
- View hierarchy of UI — Determines how easy the Android app is to navigate.
- Dynamic font size — Option for users to increase font size to fit their needs.

**Web content accessibility guidelines:** These strategies are established to serve a purpose, which helps us to increase the user-friendliness of a Web Apps.

No.	Section	Non-Text Content	Audio-only and Video-only (prerecorded)	Captions (prerecorded)	Audio Description or Media Alternative (Prerecorded)	Captions(Live)	Audio Description (Prerecorded)	Info and Relationships	Meaningful Sequence	Sensory Characteristics	Orientat
1	1 Browse Item	Pass	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Fail	Pass	Pass	Pass
2	2 Audio Response	Pass	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Fail	Pass	Pass	Pass
3	3 Menu Bar	Pass	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Pass	Pass	Pass	Pass

## 7.3 Accessibility Testing Summary

Project ID: 444577

No	Section	Non-Text Content	Audio-only and Video-only (prerecorded)	Captions (prerecorded)	Audio Description or Media Alternative (Prerecorded)	Captions(Live)	Audio Description (Prerecorded)	Info and Relationships	Meaningful Sequence	Sensory Characteristics	Or
1	Menu	Pass	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Pass	Pass	Pass	Pass
2	Create Item Button	Pass	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Pass	Pass	Pass	Pass
3	Search Bar	Pass	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Pass	Pass	Pass	Pass
4	Filter Button	Pass	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Pass	Pass	Pass	Pass
5	Filter panel - Clear all button	Pass	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Pass	Pass	Pass	Pass
6	Filter Panel - Question Type checkbox	Pass	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Pass	Pass	Pass	Pass
7	Filter Panel - Apply Button	Pass	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Pass	Pass	Pass	Pass
8	Filter Panel - Cancel Button	Pass	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Fail	Pass	Pass	Pass
9	Sort Button	Pass	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Pass	Pass	Pass	Pass
10	Question(item)	Pass	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Pass	Pass	Pass	Pass
11	Actions	Pass	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Pass	Pass	Pass	Pass
12	Skip to first page	Pass	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Pass	Pass	Pass	Pass
13	Previous Page	Pass	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Pass	Pass	Pass	Pass
14	Next Page	Pass	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Pass	Pass	Pass	Pass
15	Skip to Last Page	Pass	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Pass	Pass	Pass	Pass
16	Desktop View	Pass	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Pass	Pass	Pass	Pass
17	Mobile View	Pass	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Pass	Pass	Pass	Pass
18	Switch To Rubric Engine	Pass	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Pass	Pass	Pass	Pass
19	Log Out	Pass	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Pass	Pass	Pass	Pass
20	Title	Pass	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Pass	Pass	Pass	Pass
21	Settings Button	Pass	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Pass	Pass	Pass	Pass

## 7.4 Accessibility Testing Module wise

Severity	Success Criteria	Issue Description	Failure Reason	Occurrences	Screenshot
Minor	2.1.2 No Keyboard Trap	When the page is opened initially the and we press tab key to navigate through menu bar. After pressing enter key on particular menu, the page will be loaded but still we need to navigate through whole menu bar to reach the main content of the opened menu.	F10: Failure of Success Criterion 2.1.2 and Conformance Requirement 5 due to combining multiple content formats in a way that traps users inside one format type	When page is loaded initially and navigate through menu bar using keyboard and enter any menu	
Moderate	1.3.1 Info and Relationships	The audio response page when tested using axe devtools, when the "Audio recorder style" was expanded identified a issue that landmark are not applied properly	F92: Failure of Success Criterion 1.3.1 due to the use of role presentation on content which conveys semantic information	Audio Recorder type dropdown expanded	
Major	1.3.1 Info and Relationships	The an-label is missing for sort by in Browse Item page.	F92: Failure of Success Criterion 1.3.1 due to the use of role presentation on content which conveys semantic information	Sort by Menu in Mobile view	
Moderate	1.3.1 Info and Relationships	The browse response page when tested using axe devtools, when the "Sort by" was expanded identified a issue that landmark are not applied properly	F92: Failure of Success Criterion 1.3.1 due to the use of role presentation on content which conveys semantic information	Sort by dropdown expanded	
Major	1.4.3 Contrast(Minimum)	In the edit item preview tab, the selected question color contrast is not according to the specified ratio	F83: Failure of Success Criterion 1.4.3 and 1.4.6 due to using background images that do not provide sufficient contrast with foreground text (or images of text)	Edit Item Menu - Preview Tab	
Moderate	1.3.1 Info and Relationships	After navigating the menu bar and the focus is in Edit Item Section, the screen reader is directly reading the logo "Desktop Mode" and not reading that the focus is now on Edit Item Page		When the focus is received on the main content of Edit Item menu after navigation through whole menu	
		Once the audio is recorded and we click on "Start Recording" button again the pop up is shown with yes no buttons after clicking on "Yes" Button the focus went on to the google tab. So, to come back on audio	F85: Failure of Success Criterion 2.4.3 due to using dialogs or menus that are	Focus after clicking on "Start	<a href="https://drive.google.com/file/d/1q7A5kpaE8d3JGU02Mf2j/view">https://drive.google.com/file/d/1q7A5kpaE8d3JGU02Mf2j/view</a>

## 7.5 Issues Report

## Chapter-8: Conclusion and Discussion

### 8.1 Dates of Continuous Evaluation (CE-I and CE-II)

#### 8.1 Continuous Evaluation Dates

CE-I	3 <sup>rd</sup> Feb 2024
CE-II	2 <sup>nd</sup> March 2024
CE-III	6 <sup>th</sup> April 2024

### 8.2 Summary of Internship

Internship has given me an authentic experience in a job role providing me with an introductory experience to a career path, its duties and daily operations. In this internship I have worked on many new technologies and tested end to end project.

This project has boosted my confidence. I have enjoyed my internship, and these has helped me to find that my career is on the right path. So, for identifying my career goals I have find that internship is the best way for it. As a fresher and college student I have only theoretical knowledge and not have any kind of experience that how to work in IT organization, how the work culture looks like in company's and how to make smooth transition from as a student to employee. So, internship helped me to find the answers of those question.

It helps me to gain some practical knowledge, it provides me the best work environment and make my student to employee transition smoothly. Overall, it was an amazing experience. And I am very thankful to **eSparkBiz Technologies** , and whole team for giving me this opportunity to work with them and their very supportive nature towards me.

### **8.3 Conclusion**

Consequently, by addressing the reported accessibility issues, Miova endeavors to enhance its accessibility for all users. Upon resolution of these issues, the web application will align fully with accessibility guidelines, ensuring a seamless and inclusive user experience.

### **8.4 Future Work**

In the future, the goal is to ensure that Miova becomes fully accessible to all users, regardless of their abilities or disabilities. Efforts will focus on implementing accessibility features and guidelines to ensure that blind, deaf, or physically impaired users can navigate and utilize the web application seamlessly, without encountering any barriers or challenges.

## References

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