Development of Human Resource Internal Application

Project Plan

Rowy Hardware

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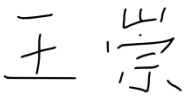
DOCUMENT CHANGE CONTROL

Version	Date	Authors	Summary of Changes
1	3/10/2024	Wan Huey Shin	Client decided exclude sales and marketing department from the Leaderboard System
2	22/11/2024	Wan Huey Shin	Changed project supervisor name

DOCUMENT SIGN OFF

Name	Position	Signature	Date
Wan Huey Shin	Team Leader		2 Oct 2024
Cheah Ruo Ying	Team Members		2 Oct 2024
Wang Chong	Team Members		2 Oct 2024
Lee En Qi	Team Members		2 Oct 2024

Ismail Mamedov	Team Members		2 Oct 2024

CLIENT SIGN OFF

Name	Position	Signature	Date
Lew Kok Sin	Director		04/10/24
Organisation			
Rowy Hardware Sdn Bhd			

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INTRODUCTION

The purpose of this document is to outline the project plan for the development of Rowy Hardware Sdn Bhd's Human Resource Internal Application. This project aims to provide an intuitive, digital platform that will streamline HR processes, from performance management and KPI tracking to leave applications and reward distribution. The document is a guide for all project stakeholders, including the HR department, department heads, and the development team. It sets clear objectives, deliverables, and timelines while ensuring that everyone involved has a defined role. This structured plan will assist in identifying potential risks, managing dependencies, and ensuring the project progresses smoothly, ultimately delivering a more efficient and engaging workplace system for Rowy Hardware.

1.1. BACKGROUND

Rowy Hardware Sdn Bhd, a company specializing in water-related hardware, identified a need to modernize its HR processes, particularly around performance management, KPI tracking, and employee engagement. With approximately 50 employees across 6 departments, including accounting, the company relied heavily on outdated manual processes such as paper forms and Excel sheets, which hindered efficiency and transparency.

The HR department, in collaboration with department heads, initiated this project to improve performance tracking and foster a more competitive and motivational work environment. By developing this internal application, Rowy Hardware aims to replace manual systems with a playful, engaging digital platform. Key features, such as a dynamic leaderboard system and a points-based reward structure, will encourage continuous improvement and provide employees with real-time performance feedback. This initiative reflects the company's drive to enhance internal operations and align with modern HR best practices while maintaining a fun and competitive culture.

1.2. KEY PROJECT PERSONNEL

The key personnel involved in this project are as follows:

1.2.1. CLIENT

Rowy Hardware Sdn Bhd is a Malaysian company that specializes in water-related hardware products and services. With approximately 50 employees spread across six departments, the company has been in business for several years, providing high-quality hardware to its customers. The client identified a need to streamline their Human Resource processes, particularly in performance management, KPI tracking, and leave application. The client envisions a more modern, digital system that not only enhances operational efficiency but also fosters employee engagement and a competitive environment. This internal application is a step towards digitizing and modernizing their HR practices.

1.2.2. OTHER STAKEHOLDERS

In addition to the client, the following stakeholders hold a significant stake in the project:

1. **HR Department:** The main beneficiary of the new HR system. Responsible for managing employee performance, leave applications, and maintaining employee data.
    - **HR Manager:** Oversees HR operations and ensures the system meets HR needs.
    - **HR Officers:** Day-to-day users of the system, managing employee records and performance data.
2. **Department Heads:** Managers of the six departments (Sales, Marketing, Accounting, etc.). They will use the system to track employee KPIs, manage leave requests, and foster a competitive work environment.
3. **IT Department:** Supports the technical infrastructure and deployment of the application. They will be responsible for ensuring the system runs smoothly and securely after implementation.
4. **Employees:** As end users, employees will interact with the system to view their KPIs, apply for leave, and engage in the competitive leaderboard. Their feedback and engagement with the system are vital to its success.

Suggested Roles:

1. **Project Champion:** A senior manager or executive who ensures the project aligns with company goals and receives ongoing support.
2. **Legal Consultant:** To ensure that the system complies with relevant labor and privacy laws, a legal consultant may be involved to advise on data handling and employee rights.

1.2.3. PROJECT SUPERVISOR, TEAM LEADER AND KEY PROJECT MEMBERS

The development team is responsible for building and implementing the system. The key project members and their roles are as follows:

1. **Project Supervisor (Dr. Robina Tinawin):**
   Oversees the entire project, ensuring all timelines and goals are met. The project supervisor also manages communication between stakeholders and the development team.
2. **Team Leader (Wan Huey Shin):**
   Responsible for coordinating the development team, assigning tasks, and ensuring smooth execution of the project.
3. **Backend Developer (WangChong):**
   Manages the server-side logic, handles database integration, and oversees the performance management and KPI tracking functionalities.
4. **Frontend Developer (Cheah Ruo Ying):**
   Focuses on creating a user-friendly interface for both web and mobile platforms, ensuring that the system is accessible and responsive.
5. **QA Engineer (Lee En Qi):**
   Conducts rigorous testing to identify and resolve any bugs or errors within the system, ensuring smooth functionality and compliance with specifications.
6. **UI/UX Designer (Ismail):**
   Designs the user interface, with a focus on delivering an intuitive and engaging experience for all users, including HR staff, managers, and employees.
7. **Database Administrator (WangChong):**

Manages employee data within the system, ensuring that performance records, leave data, and employee details are secure and properly maintained.

2. TERMS OF REFERENCE

The goal of the project is to modernise and revolutionise the human resource (HR) at Rowy Hardware. The client envisioned replacing the manually processes, such as leave application and KPI tracking, with an automated and digital platform. The platform also aims to foster an engaging and competitive environment for the employees. The intended user groups, including HR administrators, department managers, and employees.

2.1. OBJECTIVES

The objectives are listed in the order of importance and will be used to measure the success of the project.

1. **Development of website:** Our primary goal is to design and develop a user-friendly website that supports web and mobile devices. The website should be interactive, ease to use, and enjoyable for all employees to use.

2. **Digital KPIs tracking:** Rowy Hardware currently using manual way to track the KPIs using Excel sheet. The digital system will be implemented to replace the current manual process of KPIs tracking. The new system aims in reduction of human errors, and reduction in time spent on performance management.

3. **Foster Competitive and Fun Environment:** By implementing the rewards system and leaderboard system that updates in real times, and displays the top performers, it creates a competitive and productive environment for the employees. Targeting to increase the overall efficiency and engagement of the employees. Besides, introducing the announcement of the employees birthday will promote a fun environment within the workplace and build the relationship among the employees.

4. **Streamline leave application and approval:** Eliminating paper-based leaving form and achieving a fully digital leave application system after the launching of the system. This new system should reduce the time spent for application approvals.

5. **Enhance the announcement system:** Replace the current use of WhatsApp for announcements with an integrated announcement system within the platform. This

new announcement system should aim for an improvement in communication efficiency, structured to communicate important updates and events.

6. **Client Satisfaction:** The project success is not only based on the functionality of the system, it also depends on the satisfaction of the clients. Our client should be at least 90% satisfied with our final product.

7. **Team Satisfaction and Collaboration:** The success of the project should also be determined by the overall team satisfaction and collaboration within our own team. We should ensure effective collaboration through team meetings, aiming to maintain a highly motivated and productive team. Besides, each team member should feel at least 90% satisfaction of the final product and feel valued for their contribution to the project's success.

2.2. SCOPE

In this section, project boundaries are defined, including things that the project will and will not accomplish, and the earliest start date and the latest finish date.

Project Boundaries:

What the Project Will Accomplish:

1. **Performance Management System**

    a. **KPI Tracking and Management:**

        i. Develop a platform that allows HR and Managers to manage and track tasks and KPIs for employees.

        ii. Staff will be able to view their KPI progress and points accumulated through performance.

        iii. KPIs will be set annually, but performance will be tracked and updated monthly to provide regular feedback.

        iv. A points-based system will reward employees based on their performance against KPIs, encouraging continuous improvement.

b. Leaderboard System:

i. Display department-specific leaderboards to foster healthy competition and engagement among employees.

ii. Leaderboards will dynamically update to reflect the latest performance inputs, ensuring transparency and motivation.

iii. To maintain privacy, the Sales and Marketing department will be excluded from the Leaderboard System,

iv. Points earned from KPI achievements can be redeemed for performance rewards (e.g., gift cards), which will be visible in a redemption catalog.

v. The leaderboard design will be playful and engaging to build a competitive environment across departments.

c. Report Generation:

i. Provide tools for generating graphical reports to help HR, managers, and staff visualize performance data and trends over time.

2. Leave Application System:

a. Create a system where employees can apply for leave, attach supporting documents(e.g., PDFs or images), and track their leave status.

b. Employees must submit leave applications **3 days in advance**

c. Approval Process:

i. For standard leave requests requiring two managers, only one manager is required to approve the request, while the second manager is notified and must acknowledge it.

ii. In special cases (e.g., urgent requests or high-priority roles), the leave application will bypass the standard approval process and escalate directly to higher authorities.

d. Provide real-time notifications for managers and staff regarding leave applications using email

e. Display the available annual leave balance for each employee.

3. **Employee Data Management:**

    a. Allow HR to manually update employee records, add new staff, or remove staff.

4. **Announcement Center:**

    a. Enable HR to post announcements and updates to staff.

    b. Automatically announce birthdays with fun, customizable features (e.g., stickers).

    c. Allow colleagues to send birthday wishes or emojis.

5. **Employee Rating:**

    a. Add a questionnaire that allows department managers to review and rate employees on a scale of 1-5, with an option to add remarks.

6. **Web and Mobile Accessibility:**

    a. Develop the platform as a web-based system that is accessible via mobile devices.

    b. User groups include HR (admin), managers, and staff.

What the Project Will Not Accomplish:

1. The system will not use manual, paper-based, or Excel-based tracking for KPIs and performance management.
2. It will not require staff to register or enter their data into the system manually, except for updates by HR.
3. External communication platforms (e.g., messaging tools) will not be included.

Project Timeline:

1. **Earliest Start Date:** Immediately upon approval of the project scope and requirements.

2. **Latest Finish Date:** To be determined, depending on the final approval, but estimated completion would be May 2025..

2.3. CRITICAL SUCCESS FACTORS

The factors stated below are crucial to the success of the project. Failure to meet these factors will consider the project to be unsuccessful.

Usability: The platform should be user-friendly, interactive and enjoyable for all the user groups, including employees, managers, and HR. If the users find the system to be complicated and difficult to use, it will lead to dissatisfaction and project failure.

Performance and Responsiveness: The system should respond quickly and smoothly in handling real-time performance data, updates, and notifications with minimal delays. Performance lag or slow responsiveness will make the system less effective, affecting the user experience negatively.

Accuracy: The system should provide accurate results in data tracking, task assignments, and ranking calculations. Any Inconsistencies or errors in data processing will determine loss of trust in the system, resulting in potential failure of the project.

Security: The system should implement strong measures to protect the sensitive employees data from unauthorised access and breaches. Failure in maintaining security will affect the trust of the system among the users.

Timeline Adherence: The project should stay on schedule to avoid delays or incomplete work, ensuring that all features are delivered within the project timeline. Falling behind the proposed schedule could jeopardise the successful completion of the project.

2.4. ACCEPTANCE CRITERIA

The success and acceptance of the project will be determined based on the following criteria.

User Testing and Feedback: The system must undergo a thorough user acceptance testing (UAT) before deploying to all the users. For example, the selected users from Rowy Hardware Sdn. Bhd. would test the functionality and usability of the system and provide the feedback. The success of the project will be determined by positive feedback received.

Performance Evaluation: The system must meet the performance metrics. The client must verify that the system performs tasks and processes data quickly and smoothly without any delays. The speed of the system and the load times should be within the acceptable limits.

Features Completeness: All aspects of the functionalities stated in the project scope, such as performance tracking, leaderboards, reward system, announcement, and leave application, must be fully working. A pass rate of 100% is required to all features to ensure that all the functionalities of the features are working as expected, meeting the client needs.

Security Compliance: The system must ensure that it meets all requirements of the security. This includes data protection from the sensitive user information. The clients must verify that all the security measures are implemented properly. Examples could be hash is implemented on the password, or the employees name are blurred in the leaderboards for the sales department, and others.

3. ESTABLISHMENT

3.1. PROCESSES, PROCEDURES AND STANDARDS

1. **Software Development Methodology: Scrum**

   We will adopt Scrum for the project. Scrum is an Agile framework that allows for iterative development, enabling the team to deliver working software in short sprints, typically lasting 2–4 weeks. It was chosen for this project due to its flexibility, collaborative nature, and ability to quickly adapt to changing requirements. Scrum promotes continuous feedback, which aligns well with the project's evolving frontend and backend components.

2. **Processes**

   a. **Versioning System**:

      We will use **Git** for version control. This allows the team to work collaboratively, track changes, manage branches, and integrate code changes efficiently. GitHub will serve as the central repository for managing the codebase, ensuring that all changes are well-documented and recoverable if issues arise.

   b. **User-Centred Design (UCD) Process**:

A **User-Centred Design** process will be followed to ensure that the final product meets the end users' needs. Adobe XD will be used to create prototypes that will be tested with users to gather feedback before the actual development begins. The iterative feedback loop from users will help ensure that the interface and experience are intuitive and user-friendly.

3. **Coding Standards**

    a. **Frontend (HTML, CSS, Vue.js)**:

        - **HTML/CSS**:
            - Follow **W3C standards** for HTML5 and CSS3.
            - Ensure proper use of semantic HTML to improve accessibility and SEO.
            - Adhere to **BEM (Block Element Modifier)** for CSS class naming to maintain a scalable and maintainable style structure.
        - **Vue.js**:
            - Follow Vue.js official coding guidelines.
            - Use **Vue Router** for managing routing and **Vuex** for state management, adhering to modular and component-based architecture.

    b. **Backend (Django)**:

        - Follow **PEP 8** standards for Python code style in Django.
        - Ensure proper use of Django's **MVT (Model-View-Template)** architecture.
        - Implement DRY (Don't Repeat Yourself) principles to minimize code redundancy.

4. **General Best Practices**:

    - Maintain consistent code formatting, with well-documented comments for clarity.

- Follow security best practices (e.g., validating user inputs and managing sensitive data).
- Use Unit Testing to ensure code quality, along with Continuous Integration (CI) pipelines to automatically test code during development

3.2. PROJECT ENVIRONMENT

1. Workplaces:

- **Remote Workspaces**: Team members will primarily collaborate remotely, using virtual communication tools like Microsoft Teams, or Zoom for daily stand-ups and meetings, in line with the Scrum methodology.

2. Computers:

- Each team member will require a **laptop/desktop** with the following specifications:
    - **Processor**: At least Intel i5 or equivalent.
    - **RAM**: Minimum 8GB (16GB preferred for running development environments smoothly).
    - **Storage**: SSD with at least 256GB for faster access and file handling.
    - **Operating System**: Windows, macOS, or Linux with Docker support for virtual environments.
- Development tools such as **Visual Studio Code** (for coding) and **Adobe XD** (for prototyping) will be installed.

3. User Accounts:

- **GitHub Accounts**: Each member will need a GitHub account for accessing and contributing to the project repository.
- **Adobe XD Accounts**: Accounts for Adobe XD will be required for creating and sharing prototypes.

- **Project Management Accounts**: Taiga will be used for task management, where each member will need an account to track Scrum tasks.

4. Stationery:

- **Digital Stationery**: Collaborative tools such as **Miro** or **Figma** will be used for wireframes, sketches, and brainstorming ideas.
- **Traditional Stationery**: Team members may use notebooks, pens, and whiteboards for personal notes, sketching ideas, and managing to-do lists in physical form.

3.3. PROJECT TEAM SKILL DEVELOPMENT REQUIREMENTS

For this project, training might be necessary in the following areas:

1. **Vue.js Framework**:

   Members need to be familiar with Vue.js for building the frontend. Training on Vue's component structure, state management (Vuex), and routing (Vue Router) will be essential.

2. **Django Backend Framework**:

   Since Django is used for the backend, team members may need training in Django's models, views, templates (MVT architecture), ORM (Object-Relational Mapping), and REST API development with Django Rest Framework.

3. **Adobe XD**:

   For prototyping, members should be comfortable using Adobe XD for designing and creating wireframes. Training on UI/UX principles and basic Adobe XD functionality will be helpful.

4. **HTML/CSS**:

   Training on the latest HTML5 and CSS3 features, responsive design, and CSS preprocessors like CSS can be beneficial for those less familiar with frontend development.

5. **Version Control (Git)**:

   Familiarity with Git and version control systems for managing the project collaboratively.

4. DELIVERABLES, ACTIVITIES AND CAPITAL RESOURCES

4.1. DELIVERABLES

In this section we will describe what we are going to do in this project
During our online meeting with Rowy Hardware, we listened to them and recorded all their requirements for the project. We then discussed with the group whether we would comply with their requirements.

Web but accessible with mobile:

KPI tracking track performance, two ways conversation:

- 50 Employees 6 Departments (Accountant)
- Sell water related hardware
- KPI set by HR and HOD
- Eg Time frame to complete tasks
- Tasks are distributed by system
- Staff will only have 5 KPI (if they are involved in a few departments then will only get the important ones)
- KPI is yearly by performance is track by month, tasks is fixed in year
- HR would be the one record the performance while staff can view it
- Staff can see points collected and can redeem it for reward

Challenge to collect points:

- Can response
- Track time
- Point is given according to ranking

Performance reward:

- (Redeem Gift with points (points can be collected by KPI))
- Gift can be Gift Card

- Rewards are visible (Redemption catalog is shown)

Leaderboard:

- Eg show result
- Change according to the latest input
- Each department can see their own leaderboard only
- In order to build competitive environment
- Need to be playful
- For sales and marketing group the name shall be blurred out
- Report generation is encouraged (Graph)
- Manager can oversee the whole department member
- Data of staff will be provided so they don't have to register
- Only nicknames or names and birthdays.
- Can update the staff information manually (adding new staff and removing staff by HR)

Leave application and approval:

- A form will be provided
- Choose date and reason
- Allows them to upload pdf or image
- Superior shall receive a notification without accessing the app.
- Status can be seen by staff
- Employee shall apply leave x days before
- Can show annual leave available
- When 2 managers are required. Only one manager is needed to approve, another manager just needs to be acknowledged.

- Some special case might need to bypass it to higher authorities

Announcement Center from HR:

- To announce about update
- Only HR can post
- The system will announce birthday with name and picture with cute stickers

4.2. ACTIVITIES

In this section, all the activities to be executed are listed, along with a description of the tasks involved in each activity.

Requirements Gathering and Analysis

- **Task 1:** Conduct online meeting with Rowy Hardware
- **Task 2:** Record and document all client requirements
- **Task 3:** Analyze requirements with the project team
- **Task 4:** Confirm project scope and deliverables

System Design

- Design web-based interface accessible on desktop (wireframe)
- Design web-based interface accessible on mobile (wireframe)
- Design web-based interface accessible on desktop (prototype)
- Design web-based interface accessible on mobile (prototype)
- Database design

Development

- **Task 1:** Web UI implements
    - Login UI
    - Dashboard UI (Admin , Personal , manager)
    - KPI UI

    - WorkFlow UI（Leave application）
    - Points Redemption Catalog UI
    - Notification center UI
    - System management
        - Authorization UI
        - Department management UI
        - Staff management UI
        - System Log UI

- **Task 2:** Function implement
    - Authorization function implement including login
        - Role management
        - Authorization management
    - Department management function implement
        - Department CRUD
    - Staff management function implement
        - Staff CRUD
    - KPI tracking function implement（including personal, department,overall）
        - KPI release (including assign KPI job to staff)
        - KPI CRUD
        - Dashboard for different user (admin , manager , personal)
    - Points Redemption Catalog function implement
        - Prize Redemption history
        - Prize CRUD
        - Prize Redemption

    - Notification Center function implement
        - Notification CRUD
        - Personal message notification
    - Leave application
        - Leave application CRUD
    - System log function implement

Task 3: Testing

- Conduct unit testing for each module
- Perform integration testing
- Carry out user acceptance testing with client representatives

Task 4: Deployment and Training

- Set up the system on client's servers
- Conduct training sessions for employees and managers
- Provide user manuals and documentation

Task 5: Post-deployment Support

- Monitor system performance
- Address any issues or bugs reported by users
- Implement minor updates or improvements based on initial feedback

4.3. RESOURCES

Human Resources

- Project Manager
- Software Developers (Web and Mobile)
- Database Administrator

- UI/UX Designer
- Quality Assurance Testers
- Technical Writer

Hardware

- One cloud-computer server with static ip address(4GB ram , 2 core, at least 20GB disk)
- Development workstations
- Test devices (various mobile phones and tablets)

Software

- Integrated Development Environment (IDE)
- Version Control System (e.g., Git)
- Database Management System
- Project Management Software
- Design Tools (for UI/UX)
- Testing Tools

Documentation

- Project plan template
- Requirements documentation
- Design documents
- User manuals
- Training materials

5. ORGANISATION AND STRUCTURE

In this section, all the groups of people who have direct interaction with the project will be listed in Table 1. This table outlines activities (from section 4.2), the deliverables they produce (from section 4.1), and the groups involved in each step of the process.

Activities Name	***Activities From 4.2***	***Deliverables***	***Activities From 4.1***	***Group involved***
Gathering and Analysis of Requirements	Conducting meeting with the clients, Recording requirements, implementing project plan and confirming with the clients	Requirements document	Requirements Document	Project Team, Client from Rowy Hardware
System Design	Web interface design, KPI tracking system design, user interface and database design	System Design, Documentation, Database Schema, Wireframes, Prototypes	UI/UX Design, Database Design	UI/UX Designers, Developers, Database Administrator
Development	Developing web apps, implementing KPI systems, employee management, reward system, leaderboard, etc.	Web Application, Mobile Access, Features Implemented	Web & Mobile App	Software Developers, QA Testers, Project Manager

Testing	Unit testing, integration testing, user acceptance testing	Test Results, User Feedback	Test Results, Feedback	QA Testers, Client Representatives, Software Developers
Deployment and Training	Setting up system on client servers, conducting training for employees and managers	Deployed System, User Manuals, Training Materials	User Manuals, Training Documents	Project Manager, Trainers, IT Infrastructure Team
Post-deployment Support	Monitoring system, addressing issues, and implementing updates	Bug Reports, Updated System Versions	Bug Reports, System Updates	Support Team, Client IT Team

Table 1 Activities and Deliverables

6. RISKS

Risks associated with this project.

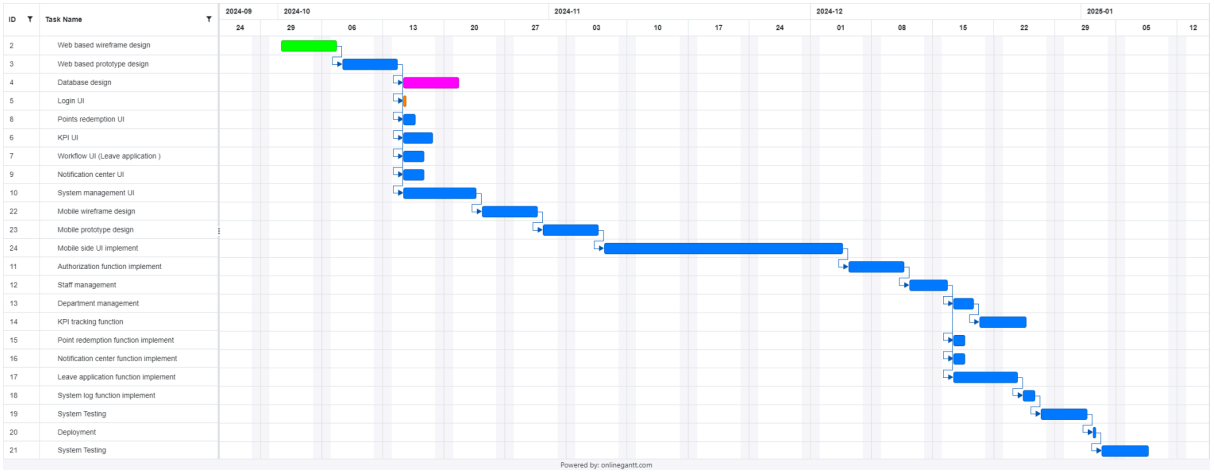
Rank	Name / Description	Occurrence Probability (H/M/L)	Severity (H/M/L)	Mitigation Strategy Number	Contingency
1	**Development Delays:** Development may be delayed due to unforeseen technical issues, such as software bugs.	H	H	**Strategy 1:** Schedule regular code review and testing phases in order to identify and solve any issues in the early stage of the development. **Strategy 2:** Use project management tools like Taiga to effectively monitor progress and minimize the risk of procrastination. **Strategy 3:** Begin the project earlier to allow for sufficient time to handle any unforeseen technical issues.	If delays remain significant, we can negotiate an extension of the project deadline. Prioritize the most critical functionalities for completion, and postpone less essential features.
2	**Scope Creep**	M	H	**Strategy 1:** Clearly define and document the project scope at the start and get client approval.	When additional features are requested, timeline and budget are required to be reassessed to accommodate them.

3	**Resistance to New Technology :** Employees might be hesitant to adopt the new system, affecting its overall effectiveness.	M	H	**Strategy 1:** Provide comprehensive training and easy-to-use guides. **Strategy 2:** Roll out the app in one department first, gather feedback, and adjust as needed. **Strategy 3:** Offer rewards or points for early adoption to encourage usage.	If resistance remains high, introduce a hybrid system, allowing a gradual transition while offering more support and user-friendly improvements.
4	**Integration Issues with Mobile and Web Accessibility:**	M	H	**Strategy 1:** Develop and test a responsive design early in the development phase to identify any platform-specific issues. **Strategy 2:** Use cross-platform testing tools and have dedicated teams testing both mobile and web versions.	If integration issues persist, focus on launching the web version first and delay the mobile version to ensure the core functionality is maintained.

Table 2 Risks

7. SCHEDULE

7.1. PROJECT TIMELINE



Tasks and member assignment

Task ID	Team member	Time start	Time end
2	All team member	2024-10-01	2024-10-07
3	All team member	2024-10-08	2024-10-14
4	Wang Chong	2024-10-15	2024-10-21
5	Wan Huey Shin	2024-10-15	2024-10-15
8	Cheah Ruo Ying Lee En Qi	2024-10-15	2024-10-16
6	Wan Huey Shin Lee En Qi	2024-10-15	2024-10-18
7	Wang Chong	2024-10-15	2024-10-17
9	Wan Huey Shin Ismail Mamedov	2024-10-15	2024-10-17
10	Wang Chong Ismail Mamedov	2024-10-15	2024-10-23

22	All team member	2024-10-24	2024-10-30
23	All team member	2024-10-31	2024-11-06
24	All team member	2024-11-07	2024-12-04
11	Wang Chong	2024-12-05	2024-12-11
12	Ismail Mamedov	2024-12-12	2024-12-16
13	Ismail Mamedov	2024-12-17	2024-12-19
14	Wan Huey Shin Lee En Qi Cheah Ruo Ying	2024-12-20	2024-12-25
15	WangChong	2024-12-17	2024-12-18
16	Wan Huey Shin	2024-12-17	2024-12-18
17	Wang Chong	2024-12-17	2024-12-24
18	Wang Chong	2024-12-25	2024-12-26
19	Lee En Qi Cheah Ruo Ying	2024-12-27	2025-01-01
20	Wang Chong	2025-01-02	2025-01-02
21	Lee En Qi Cheah Ruo Ying	2025-01-03	2025-01-08

7.2. EXTERNAL DEPENDENCIES

1. **Client Input and Approval**: Rowy Hardware are required to provide timely feedback and approval , especially during the requirements gathering, design approval, and user acceptance testing phases. Delays in feedback will affect the schedule too.
2. **Hosting and Server Setup**: The IT staff of Rowy Hardware or a third-party hosting company must provision and configure the cloud computing server needed to host

the website. Deployment timings may be impacted by any delays in server setup or obtaining a static IP address.

7.3. ASSUMPTIONS

1. **Client Availability**: It is assumed that Rowy Hardware stakeholders will be available for regular meetings, feedback sessions, and user testing as scheduled. Their availability is crucial to ensure no delays in approval and validation.

2. **No Significant Scope Changes**: After the requirements are confirmed, it is anticipated that the project will move forward with only minor scope adjustments. The impact of any further demands on budget and timeliness will be evaluated.

3. **Adequate Infrastructure**: It is assumed that Rowy Hardware has set up the hardware, network, and IT support required to support the new system, including cloud hosting with a static IP address and sufficient computing resources..

4. **Team Expertise and Capacity**: It is anticipated that the development team has the necessary technical know-how and will be able to work uninterruptedly on this project full-time.

5. **Stable Third-Party Tools**: Any third-party software or services (such as version control systems, APIs, or design tools) will function as expected and not introduce unforeseen downtime or compatibility issues.

8. BUDGET

Personnel Cost

Name	Rate per Hour
Wang Chong	35
Wan Huey Shin	35
Cheah Ruo Ying	35
Ismail Mamedov	35
Lee En Qi	35

Table 3 Personnel Cost

Time Estimated to Complete Each Task

Activity	Task	Estimated hours needed (hrs)	Total per activity (hrs)
1	**Wireframe design**		**30**
	Web based wireframe design	15	
	Mobile based wireframe design	15	
2	**Prototype design**		**40**
	Web based prototype design	20	
	Mobile based prototype design	20	
3	Database design	20	**20**
4	**Web UI implement**		**52**
	Login UI	2	
	Dashboard UI	4	
	KPI UI	8	
	Workflow UI (Leave application)	8	
	Points redemption UI	4	
	Notification center UI	6	
	System management UI	20	
5	**Function implement**		**76**
	Authorization function implement	15	

	Staff management	6	
	Department management	6	
	KPI tracking function	15	
	Point redemption function implement	6	
	Notification center function implement	6	
	Leave application function implement	15	
	System log function implement	6	
		Total	**218**

Table 4 Task time estimate

REFERENCES

Pellerin, R., & Perrier, N. (2018). A review of methods, techniques and tools for project planning and control. *International Journal of Production Research*, *57*(7), 2160–2178. https://doi.org/10.1080/00207543.2018.1524168

9. TABLES INDEX