

# **FIT2002: PROJECT MANAGEMENT**

## **ASSIGNMENT 1**

**S2 2025**

**Team: 0512**

**Sarah Biao** (33906955), **Ali Azeemi** (33843309), **Spa  
Mahapiyasilp** (33728119), **Genevieve Wibisono** (34445668)

**12 September 2025**

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# 1 Working Agreement

## ***FIT2002 – Working Agreement (Team Charter)***

<b><i>Team number</i></b>	0512
<b><i>Team members</i></b>	Sarah Biao, Genevieve Lindsay Wibisono, Ali Azeemi
<b><i>Team objectives</i></b>	<ul style="list-style-type: none"><li>● Achieve an HD (90+) on all assignments.</li><li>● Ideally, hold two meetings a week, either online or in-person subject to all group members' availability.</li><li>● All members attend at least nine out of ten applied classes.</li></ul>
<b><i>Team characteristics</i></b>	We are harmonious and synergistic, with each member bringing their own unique value to the team. Our team members' strengths lie in organisation and timeliness, but at the same time, we are occasionally prone to procrastination.
<b><i>Core values</i></b>	Good collaborations with each team member and achieving/helping and learning from each other. To succeed in conducting/managing projects and creating a respectful, organized and collaborative environment.
<b><i>Group norms and code of conduct</i></b>	Constant communication in class and through the Instagram group chat throughout the entire assignment progress, where we will update and help each other on the tasks. We expect everyone to be present and active during meetings as it is ideal for a great team collaboration. Also, we expect everyone to complete their assigned tasks (which will be tailored towards their preferred PM role) by the date discussed.

<p><b>Participation and collaboration approach</b></p>	<p>Organized team meetings with availability provided for each member so we know when each member is available. Catching up with each other through zoom and keeping a google doc or shared document that has checkboxes to show which step we're up to and which tasks are completed. By using Timeline we can record the availability of each member. Keeping a google drive to contain all the work/drafts or past sheets that we have done. We can leave comments for each other on google docs to let each other know the feedback or proof read reports or any other documents that are created to give feedback via text messages or emails.</p>
<p><b>Communications</b></p>	<p>We will be communicating bi daily through an Instagram group chat. We chose Instagram because all group members are already strongly familiar with it. We will be open and honest with each other. For example, we will not lie about our own skills and abilities, nor will we lie about our weekly availability. Each member will individually handle their own assigned responsibilities for the project, but if a problem that they are unable to solve does appear, they can escalate the problem to the team-level through the Instagram group chat. If the team is still unable to resolve it, the second-level of escalation is the applied class TAs (e.g., Minh Vo). The third-level is the unit coordinator Eehui Lim and the chief examiner SanazNikfalazar.</p>
<p><b>Problem solving</b></p>	<p>We will communicate our problems first. As a team we will discuss and identify the best solution to it. These ideas could give and create solutions to find a way around the problems. For example, we would hold online meetings as the main way to complete the assignments outside of class, not restricting the location to on campus meetings. In any case we have complications on our projects, we will always need to find a way to adapt around the problem, brain-storming for ideas together. Finally, understand that conflict can be a good thing, because it means that the team is engaged and it is an opportunity to discuss different options.</p>
<p><b>Conflict management</b></p>	<p>We will consider why the conflict might be happening, address any issues raised by input from all members. By doing so, we will make sure to resolve any conflicts and try to do it as soon as possible to avoid conflicts later on. We will always keep open communications with each other and have set and clear expectations.</p>

<b>Signatures</b>	Sarah Biao SM [signature from Spa Mahapiyasilp] Genevieve Lindsay Wibisono ALI A
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# 2 Project Charter

The Project Charter formally authorises the project and defines key boundaries, responsibilities, and expectations. Use the headings below and adapt to your chosen project.

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## Selected Project

LoopCare:

Digital Wellness Companion Description: A wellness-focused app that helps users track emotional well-being, sleep, hydration, and screen time. It includes gentle nudges, mindfulness exercises, and community challenges. Designed with accessibility and simplicity in mind, LoopCare promotes healthy habits through gamified engagement and personalised insights.

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## Project Title And Description

- Provide a short, descriptive title.
- Include a concise summary of what the project is and what it aims to solve.
- Make sure it is distinct from your team name.

Project Title: LoopCare Digital Wellness Companion

Description: A minimalist wellness-focused application to support students' emotional well-being by tracking mood, sleep, hydration, and screen time. Tamagotchi-inspired gamified experience to help keep students motivated.

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## Project Scope And Objectives

- State what is **in scope** and what the team will deliver.

- Outline **what the product will do** and what outcomes are expected.
- Include 3–4 SMART objectives that align with the business case.

**Tip:** Scope should link directly to your project deliverables in Task 3.3.

#### What The Project Will Do:

LoopCare Digital Wellness Companion will design, develop and deploy an application that encourages users to track and improve their psychological and physical well-being. The application has four main focuses that will be monitored: the emotional state of users (mood), sleep quality, hydration levels, and screen time. At the same time, the application will provide personalised mindful exercises, community challenges, and gentle reminders. To keep the users motivated to develop positive habits, LoopCare will adopt a tamagotchi-inspired gamified experience.

#### In Scope:

- Application runs on iOS and Android.
- Six screens within the app: Home, Tracking, Recommendations, Socials, Store, and Settings.
- Integration of data tracking for the emotional state, sleep quality, hydration level and screen time.
- Leveling up your digital pet, earning rewards, and unlocking items in the store once your pet reaches a certain level.
- Personalised task recommendations based on user preference.
- Community features enable adding friends, multiuser challenges and sharing achievements.
- Mobile Accessibility features (in line with WCAG 2.2) ensures the application is accessible to people with disabilities.

#### Out of Scope:

- Application runs on a web browser.
- Requirements to access devices beyond basic system APIs therefore, third party wearable devices such as Apple Watch are needed.
- Advanced AI providing predictive analytics.
- Connecting / linking the account to an email or phone number.

- Users can select between multiple pets upon creating their account and can buy new pets in the store.

**SMART Objectives:**

- Launch MVP by [date]: Delivering a fully functional MVP of the application with tracking and mindfulness features by the end of the 18-months development cycle.
  - Achieve 90% functional coverage: Recurring testing all features outlined in the MVP ensuring that the core functionalities are fully developed and passing the acceptance criteria before release date.
  - User Engagement Goal: Attain at least 60% active user engagement (measured by at least two logins per week) within the first month of launch through the game features and gentle nudges.
  - Accessibility Compliance: Attaining WCAG 2.2 Level AA standards for accessibility to provoke inclusivity for diverse users by the end of development phase.
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### **Project Start And Finish Dates**

- Define the intended duration of the project.
- Use a realistic project timeline (e.g. October 2025 to February 2026).
- Tie this to your Gantt chart and schedule from Task 3.4.

**Intended duration:** 205 days.

- Project timeline: Jan 1, 2026 to Jul 25, 2026
- Note: Buffer periods have already been taken into account and included in the intended duration in case of contingencies.

**Maintenance and support duration:** 365 days.

- Maintenance and support timeline: Jul 25, 2026 to Jul 25, 2027
- Note: The client was considering up to 18 months of maintenance and support, but in the end, decided on 12 months.

**Gantt chart and schedule:** See Task 3.4

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## **High-Level Budget Estimate**

- Provide the total estimated project cost (not detailed breakdown).
- You can base this on your cost model from Task 3.5 (e.g. \$480,000).
- Indicate if the budget is capped or flexible.

High-level budget Estimate:

The maximum overall estimated cost for the LoopCare Digital Wellness Companion project is \$300,000. This budget is the limit, meaning that project activities must be maintained and presented within this financial limit. This covers the design, development, testing, deployment, and initial marketing, as well as project management and contingency allowances.

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## **Project Development Approach**

- State whether you are using **Waterfall**, **Agile**, or a **Hybrid** approach.
- Justify your choice briefly (e.g. Agile allows iterative testing with students).
- Align with PMBOK 7 and Monash preferences for adaptive delivery.

Project Development Approach:

The LoopCare Digital Wellness Companion will be developed using the Agile methodology, with recurring and incremental delivery cycles (sprints). Agile is selected due to its flexible planning, continuous user feedback, and rapid iteration, allowing the application to be developed along with changing user requirements and continuous feedback from students.

This approach aligns with PMBOK 7 principles of adaptability, stakeholders engagement, and value deliverance. Moreover, it achieves Monash's preference for malleable presentations, ensuring early prototyping, frequent interactions and testing with targeted users, and utilising feedback for guidance and development.

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## Key Stakeholders

List at least 4–5 key stakeholders and their roles:

- Client or sponsor
- Product owner (team contact)
- End users
- Technical expert (e.g. mentor or faculty IT team)

### Format:

**Stakeholder    Role    Interest/Influence**

Dr. Smith      CIO      Strategic approval

Key stakeholders:

Stakeholders	Role	Interest/Influence
Dr. Marly Carson	Project Sponsor	<b>High Interest:</b> Provides strategic overviews, approval to budgets, and verifies organisational objectives.

		<b>High Influence:</b> As the sponsor, Dr. Carson controls funding and has final approval authority.
Martin Li	Product Owner	<p><b>High Interest:</b> Conducts developmental tasks, manages backlog, and confirms user requirements.</p> <p><b>High Influence:</b> As the client's representative, Martin has the ability to accept or reject features.</p>
University Students	End Users	<p><b>High Interest:</b> Primary targeted users who will engage with the application. They will be using the app.</p> <p><b>Low Influence:</b> They don't make the decisions about how LoopCare turns out.</p>
Elliot Foster	Faculty IT Support	<p><b>Low Interest:</b> Technical feasibility guidance provider, makes sure the application meets usability and security standards. But has other university responsibilities to attend to on a daily basis.</p> <p><b>Low Influence:</b> Elliot can only influence minor matters relating to the app's architecture and compliance.</p>

Gilbert Renvor	UI Designer	<b>High interest:</b> Designs user interface to maximise engagement and usability.  <b>Low Influence:</b> Designs the UI according to the client's requirements, and can only make some minor design choices on his own.
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### Project Success Criteria

- Define how success will be measured: time, cost, user adoption, technical performance.
- Include 2–3 quantitative metrics (e.g. <5% defect rate, ≥85% client satisfaction).
- Link to your quality plan (Task 3.7) and project objectives.

The success of the LoopCare Digital Wellness Companion will be measured against the following criteria:

1. Time and Budget Compliance: Project will be delivered within the agreed 18-month development timeline and within the \$300,000 budget.
2. User Adoption & Engagement: Achieve at least 1000 users and 60% active user engagement within the first month of post-launch.
3. Technical Quality: Maintain a defect rate of less than 5% during final acceptance testing and achieve greater than or equal to 85% client satisfaction in post-project surveys.
4. Accessibility Compliance: Achieving the WVAG 2.2 Level AA standards for accessibility prior to launch.

### Assumptions And Exclusions

- **Assumptions:** What you assume to be true (e.g. access to Monash systems, stakeholder availability).

- **Exclusions:** What is not included in the project (e.g. no mobile app, no internationalisation).

Assumptions:

- All team members should have access to the required developing tools, software licences, and systems for the full development period of the 18-month.
- Key stakeholders will be available for fortnightly progress reviews and discussion sessions.
- Target users will participate in usability testing during development, before launching and post-launching for survey.
- Cloud host services and backend infrastructure will be funded with the approved \$300,000 budget.
- Google Play and Apple App Store will provide approval for LoopCare to be available on their stores.

Exclusions:

- Integration with advanced third party wearable devices beyond basic OS-Level APIs.
- Support for multilingual interfaces.
- Post-launch maintenance and feature updates beyond the 3-month support period included in the project plan.
- Medical treatment, advice and diagnosis for users.
- Handle emergency situations (e.g., suicide prevention hotline). Instead, it can provide links to relevant hotlines.
- Guarantee full offline functionality for all features.
- Take responsibility for links to third-party resources.

# 3 Pitch

[Link to slide](#)

**What To Include (Follow This Order):**

**1. Opening Hook (10 Seconds)**

Hi, I'm Spa, and this is my team. Today, we'll be pitching LoopCare. Ever struggled to fall asleep before a deadline, your mind racing with anxious thoughts?

**2. Problem/Opportunity (20 Seconds)**

*87% of students neglect wellness while studying* (American Psychological Association, 2020). Current wellness apps are not tailored towards students. That's where our app stands apart: minimalism and gamification.

**3. Your Proposed Solution (30 Seconds)**

LoopCare is a wellness app for mood journaling, and tracking sleep and screen time. We keep everything simple with a tamagotchi-inspired gamification. Players help their virtual pets grow by completing tasks, like writing a gratitude note or taking a stretch. Gentle reminders support consistent habit-building.

**4. Strategic Fit (20 Seconds)**

LoopCare offers students an easy way to start nurturing their wellbeing. Its minimalist design creates a calming environment that is easy to engage with. Community challenges and exercises give students breaks for focus and clarity.

**5. Key Features/Deliverables (20 Seconds)**

The app offers quick 1 to 2 minute tasks that, when completed, help virtual pets grow and unlock accessories, making habit-building fun. Community challenges foster peer interactions and personalised insights give students a rewarding sense of progress.

**6. Why Your Project Should Be Selected (20 Seconds)**

With LoopCare, students make time for self-care. At a \$300,000 development cost, we project a strong return on investment within 18 months. So, who's ready to join us in making wellness fun? Thank you.

# 4 Requirement Traceability Matrix (RTM)

<b>Project Name:</b>	LoopCare Digital Wellness				
<b>Project Manager Name:</b>	August Sunlight (august.sunlight@gmail.com)				
<b>Project Description:</b>	A wellness-focused application to support students'/users' emotional well-being by tracking sleep, hydration, and screen time. With mindfulness exercises and community challenges.				
ID	Requirements (Functional or Non-Functional )	Assumption(s) and/or Customer Need(s)	Category	Source	Status
R1	User login with University SSO	SSO available	Functional	Client	Draft
R2	Load time under 3 seconds	Tested on local server	Non-Functional	Tutor	Open
R3	Mood Tracking	App users will input their mood daily via prompts	Functional	Client	Draft
R4	Sleep Quality Tracking	Device API	Functional	Client	Draft

R5	Hydration level tracking	User input of levels of hydration intake	Functional	Client	Draft
R6	Accessory unlock in the store	To keep students motivated to complete tasks, accessories can be unlocked at every new stage.	Functional	Client	Draft
R7	Screen time tracking	Device tracks the user's screen time with their permission	Functional	Client	Draft
R8	App Notifications	User allows notifications	Functional	Client	Plan
R9	Social Rewards Challenges	User allows contacts access	Functional	Client	Draft
R10	App Compatibility with iOS and Android	To best cater to multiple student groups, the app should be available on both iOS and Android	Non-functional	Client	Plan
R11	Completion of tasks helps the pet grow (level up)	A pet leveling up system will help motivate	Functional	Requirement documentation s	Draft

		students to be consistent.			
R12	Follow WCAG guidelines	People with disabilities will use the app. Make the app accessible by following WCAG 2.2.	Non-Functional	Client	Open

# 5 Scope Statement

## 1.1 Project Scope Statement

*[Provide a high-level description of the project's purpose, objectives, and major deliverables.]*

LoopCare is an accessible mobile application designed to promote students' mental and physical well-being. The main purpose of this app is to allow users to track their mood, sleep quality, hydration levels, and screen time. To keep users engaged and consistent, we have inspired this application by Tamagotchi, a gamified experience where users take care of their pets as they complete their set goals.

This project aims to design, develop and deploy a functional Minimum Viable Product (MVP) for iOS and Android platforms within 18 months. This wellness tracking app will also provide personalized mindfulness exercises and insights. The goal for this app is to encourage wellness habits through gamification, accessibility and personalized insights.

## 1.2 Deliverables & Acceptance Criteria

*[List major outputs, functional and non-functional requirements with quality/attributes standards and quality metrics, expected completion dates.]*

Major outputs:

- Promoting/providing healthy habits
- Allow users to track and see the progress of the development
- Interactions with others through games
- Engagement towards the gamified features that attracts users and evokes fun
- Supports the mental health of users that immerse them into a calm environment

Functional requirements:

- User log in with University SSO, allows quick login for students by using their University SSO credentials on both iOS and Android
- Mood tracking, users are able to input their current mood at any time (digital diary)
- App must provide a home dashboard that summarises wellness data

## Non-functional requirements

- App launches and loads the home dashboard under 3 seconds on mid-range Android/iOS devices
  - Measured using automated performance testing, success if more than 95% of trials meet the benchmark
- All MVP features must work on the latest versions of iOS and Android
  - Verified by compatibility testing across iOS (latest 2 versions) and Android (latest 2 versions)

## 1.3 Exclusions

- Web application version of LoopCare
- Integration with third-party wearable devices
- Advanced AI-driven predictive analytics
- Linking accounts via email/phone number
- Offline functionality for all features
- Providing medical advice, diagnosis, or emergency response (only links to services) features

## 1.4 Constraints:

- Fixed project budget of \$300,000
- Must be completed within an 18-month timeline
- Approval required from App Store and Google Play Store
- Development limited to six key screens
- Mobile platforms only

## 1.5 Assumptions:

- Team members to have access to required tools, licenses, and systems throughout development

- Stakeholders will attend fortnightly meetings and provide timely feedback
- Students (end users) will participate in usability testing before launch
- Cloud hosting and backend services will be funded within the allocated budget
- Apple and Google app stores will approve LoopCare for distribution.

# 6 Work Breakdown Structure

Project: LoopCare

## 1 Project initiation

- 1.1 Define application objectives for gamified exercises, user community interaction and tracking features
  - 1.2 Identify key stakeholders, including end users, sponsors, owner and development teams
  - 1.3 Develop project charter, for scope management, deliverables and constraints [10 days]
  - 1.4 Approve \$300,000 budget
  - 1.5 Assign roles to application developer, UI/UX designers and gamified exercise tester
  - 1.6 Manage contingencies
- Milestone M1 – Project charter approved

## 2 Gathering Requirements and Planning

- 2.1 Schedule meetings with stakeholders to finalize project expectations
  - 2.2 Identify end user needs such as type of games, community interactions and tracking
  - 2.3 Define application features tracking, games, user interactions and tamagotchi design
  - 2.4 Document functional and non-functional requirements
    - 2.4.1 Include functional requirements
      - 2.4.1.1 Document tracking requirements
      - 2.4.1.2 Document app notifications requirements
      - 2.4.1.3 Document community challenges requirements
      - 2.4.1.4 Document task completion and leveling up requirements
      - 2.4.1.5 Document user login with SSO requirements
    - 2.4.2 Include non-functional requirements
      - 2.4.2.1 Document 3 seconds load time requirements
      - 2.4.2.2 Document app compatibility with iOS and Android requirements

Task 2.4.2.3 Document 2.2 WCAG accessibility guidelines requirements
  - 2.5 Finalise project plan, timeline and deliverables
  - 2.6 Evaluate and choose high-level solution design
  - 2.7 Manage contingencies
- Milestone M2 – Requirements sign-off

## 3 UI/UX design

- 3.1 Create basic wireframes for different screens
  - 3.1.1 Design initial minimal loading screen
  - 3.1.2 Design initial home screen
  - 3.1.3 Design initial dashboard (tracking) screen
  - 3.1.4 Design initial game store screen

- 3.1.5 Design initial community interaction screen
  - 3.1.6 Design initial settings screen
  - 3.2 Design iterative prototype for user testing
    - 3.2.1 Create low-fidelity prototype based on wireframes
    - 3.2.2 Create medium-fidelity prototype based on medium-fidelity prototype
    - 3.2.3 Create high-fidelity prototype based on low-fidelity prototype
      - 3.2.3.1 Convert wireframe into clickable prototype
      - 3.2.3.2 Simulate core user journey
  - 3.3 Conduct usability testing with students for high-fidelity prototype
    - 3.3.1 Prepare for user testing
      - 3.3.1.1 Identify test users
      - 3.3.1.2 Prepare test scenario
      - 3.3.1.3 Set up test device
    - 3.3.2 Execute user testing sessions
      - 3.3.2.1 Guide participants to the testing
      - 3.3.2.2 Collect quantitative matrix
      - 3.3.2.3 Collect qualitative data
    - 3.3.3 Analyze and report findings
      - 3.3.3.1 Summarise user pain points
      - 3.3.3.2 Recommend improvements
      - 3.3.3.3 Share findings with UX/UI teams
- Milestone M3 – User testing completed
- 3.4 Finalise UI/UX design
    - 3.4.1 Apply findings to high-fidelity prototype
    - 3.4.2 Create LoopCare logo
    - 3.4.3 Ensure prototypes follows WCAG 2.2 Guidelines
  - 3.5 Manage contingencies
- Milestone M4 – App UI/UX front-end design complete

- ## 4 App development
- 4.1 Develop front-end interface for different screens
    - 4.1.1 Build home screens UI for tasks
    - 4.1.2 Build community interactions
    - 4.1.3 Build home screen UI and login interface
  - 4.2 Develop back-end APIs and database
    - 4.2.1 Set up backend APIs
    - 4.2.2 Set up database
    - 4.2.3 Implement authentication for SSO user login
      - 4.2.3.1 Ensure that loading time is within 3 seconds.
  - 4.3 Implement tracking interface
  - 4.4 Implement pet leveling interface
  - 4.5 Optimise performance for 10 testing users
  - 4.6 Add app documentation
    - 4.6.1 Clean up inline comments
    - 4.6.2 Write API documentation
    - 4.6.3 Write Architectural documentation
    - 4.6.3 Write Readme.md
    - 4.6.4 Write end user documentation

#### **4.7 Manage contingencies**

Milestone M5 – Development Completion

- 5 Quality assurance**
    - 5.1 Test mobile application**
      - 5.1.1 Test system
      - 5.1.2 Test configuration
    - 5.2 Fix bugs**
      - 5.2.1 Correct testing error
      - 5.2.2 Complete regression testing
    - 5.3 Complete User Acceptance Testing (UAT)**
    - 5.4 Manage contingencies**
- Milestone M6 – Quality assurance Completion

- 6 Deployment and assurance**
    - 6.1 Set up servers and hosting configuration**
    - 6.2 Conduct softlaunch with pre-registered users**
      - 6.2.1 Release Beta app to App Store and Google Play
    - 6.3 Collect user feedback and review app**
      - 6.3.1 Utilise feedback from users to make minor changes
    - 6.4 Grand launch of the LoopCare app**
    - 6.5 Manage contingencies**
- Milestone 7 M7 – Grand opening launch [0 day]

- 7 Closure and Handover**
    - 7.1 Prepare project closure documents**
      - 7.1.1 Compile final project report on deliverables, objectives and outcomes
      - 7.1.2 Document reflections on improvements and lessons learned for best practice on future projects
      - 7.1.3 Prepare financial closure report including budget utilisation
    - 7.2 Project reflection**
      - 7.2.1 Internal team meeting to discuss project
      - 7.2.2 Stakeholder meeting
    - 7.3 Prepare handover documents and artefacts**
    - 7.4 Conduct project handover and sign-off**
    - 7.5 Start agreed maintenance and support period**
      - 7.5.1 Establish communication channels for bug reports and updates
    - 7.6 Archive and close project**
      - 7.6.1 Archive contracts, agreements, and records
      - 7.6.2 Close project in system
    - 7.7 Manage contingencies**
- Milestone 8 M8 – Handover and project closure

- 8 Maintenance Closure**
  - 8.1 Handle ongoing maintenance and support**
    - 8.1.1 Monitor system performance
    - 8.1.2 Monitor security firewalls

8.1.3 Apply bug fixes and patches

8.1.4 Implement agreed upon updates

## 8.2 Closure

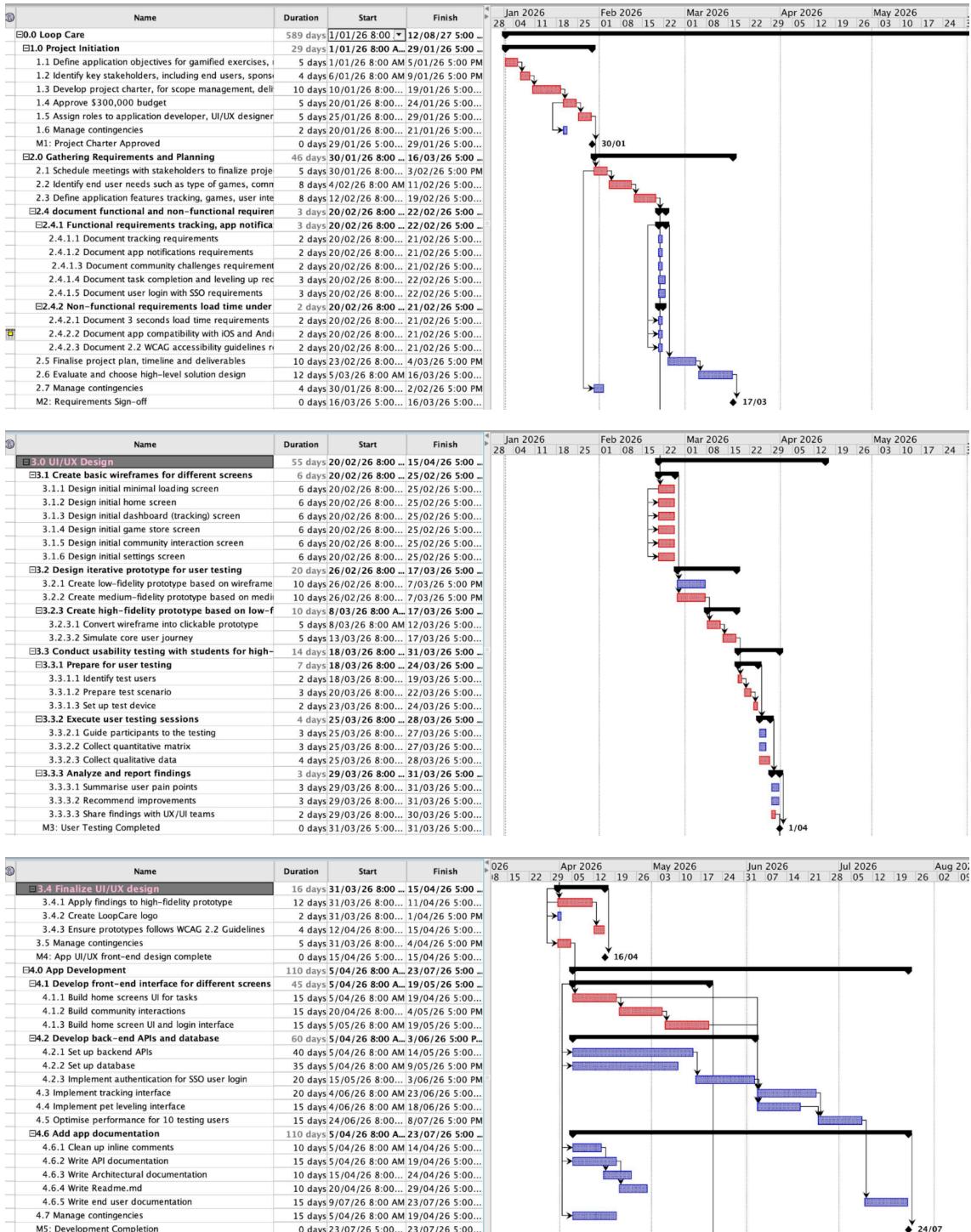
8.2.1 Final review and sign-off

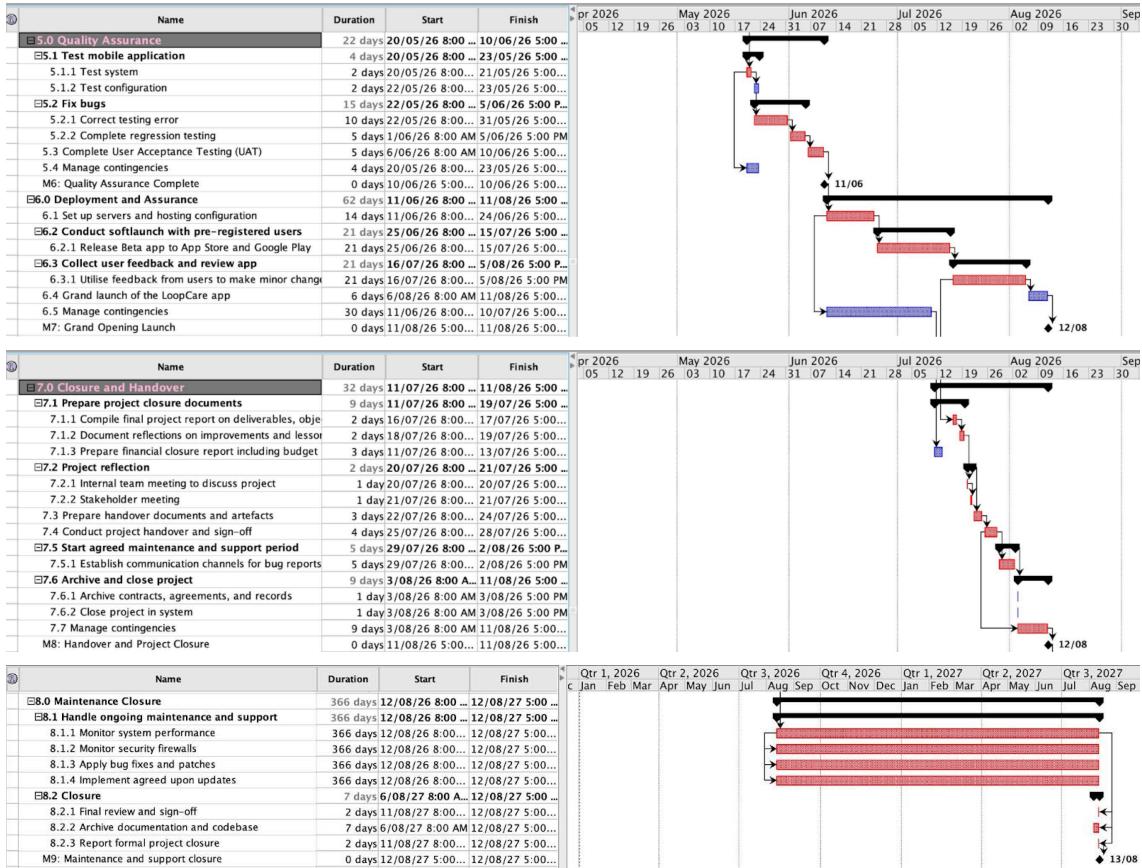
8.2.2 Archive documentation and codebase

8.2.3 Report formal project closure

## Milestone M9 – Maintenance and support closure

# 7 Gantt Chart





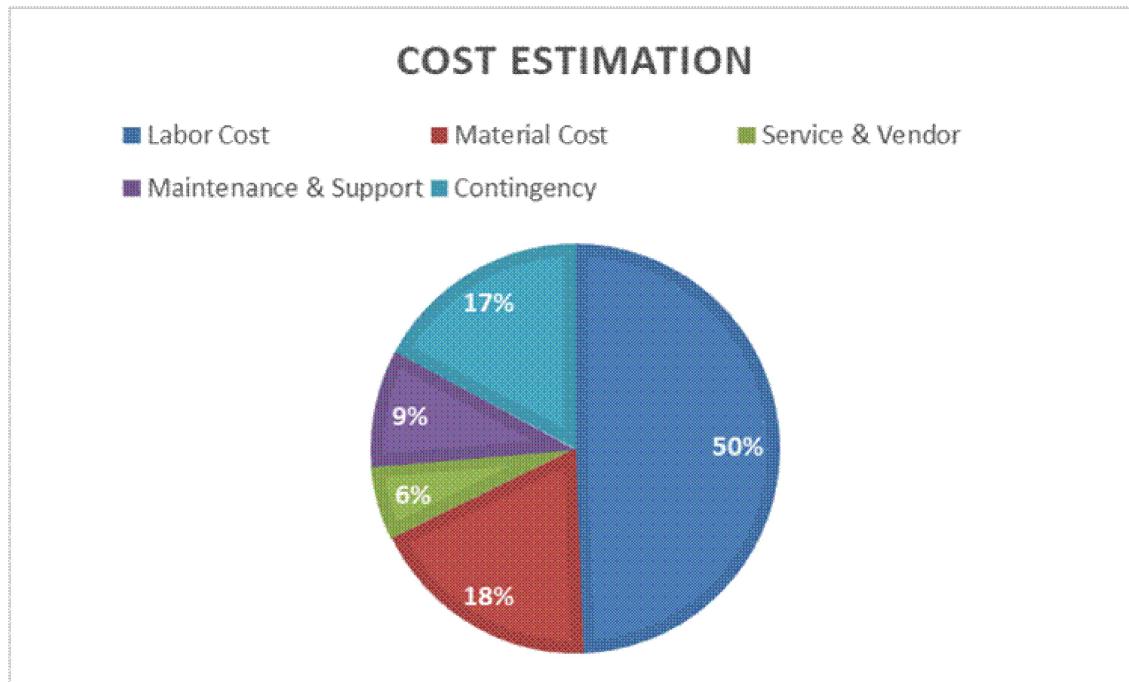
# 8 Cost Estimate Model

WBS Items	Units/Hours	Cost/Unit or Hr	Subtotal	WBS Level 2 total	% of Total
<b>1. Labor Cost</b>				<b>\$148,200</b>	<b>49%</b>
1.1 Project Manager	40hrs	\$150/hr	\$6,000		2%
1.2 Data Analyst	32hrs	\$100/hr	\$3,200		1%
1.3 UX/UI designers	100hrs	\$80/hr	\$8,000		3%
1.4 Front-end Developers	850hrs	\$60/hr	\$51,000		17%
1.5 Senior Back-end Developers	850hrs	\$80/hr	\$68,000		23%
1.6 QA/Testers	240hrs	\$50/hr	\$12,000		4%
<b>2. Material Cost</b>				<b>\$55,200</b>	<b>18%</b>
2.1 PCs	20	\$2000 /each	\$40,000		13%
2.2 Servers	Included in hosting	\$0	\$0		0%
2.3 Figma (UX/UI design)	5 licences x 12 months	\$15/month	\$900		0.3%
2.4 Visual studio Code	3 dev licences	\$500 each	\$1,500		0.5%
2.5 Postman/testing tools	5 licences	\$100 each	\$500		0.2%

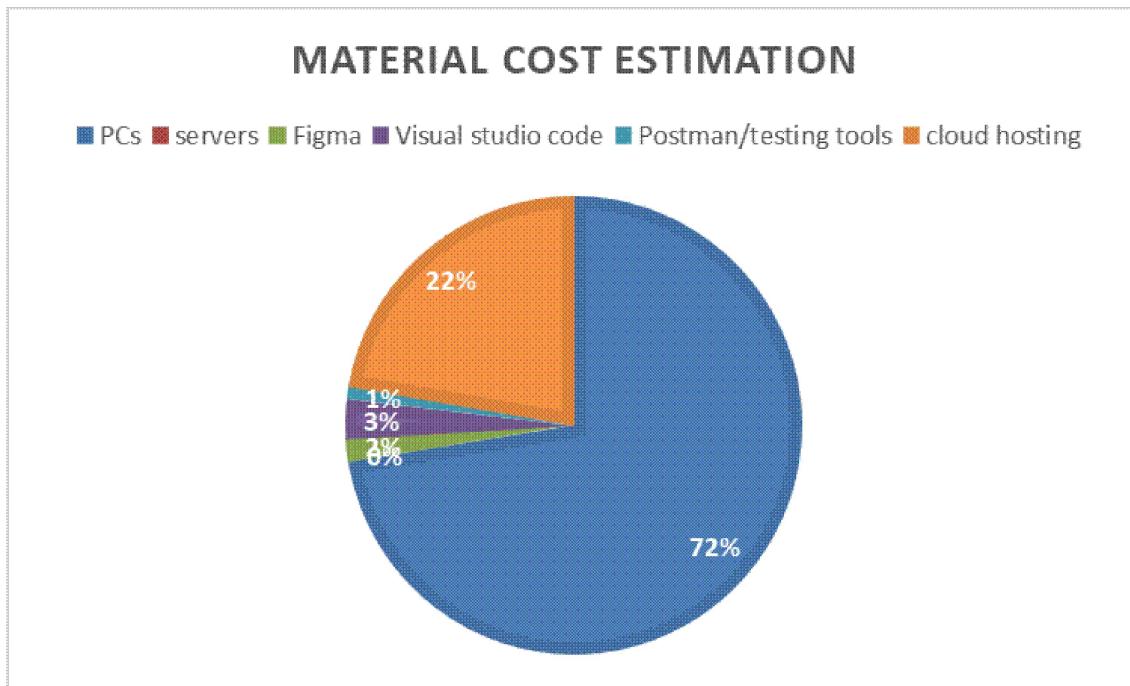
2.6 Cloud hosting	12 months	\$1,025/month	\$12,300		4%
<b>3. Service and Vendor</b>			<b>\$17,640</b>	<b>6%</b>	
3.1 Regression & UTA	441hrs	\$40/hr	\$17,640		6%
<b>4. Maintenance &amp; support</b>			<b>\$27,500</b>	<b>9%</b>	
4.1 Post-launch Support (12 months)	1100hrs	\$25/hr	\$27,500		9%
<b>5. Contingency (17%)</b>			<b>\$51,460</b>	<b>17%</b>	
Grand total			\$300,000		100%

Note: All the highlighted part is the subtotal and total percentage for the costs in each items

Pie chart for viewing the cost distributions:



More detailed breakdown of the labour and the material costs:



Justifications and Assumptions:

Methods used:

- Bottom up estimation:

-Applied for a detailed line-by-line breakdown of all project costs, including labour, materials, services, and contingencies. Each WBS level 2 item was estimated individually and then aggregated to calculate the overall level 1 costs.

- Analogous Estimation:

- Used historical project data and market comparison to benchmark labour and vendor costs. This ensures estimates aligns with realistic industry status

- Parametric Estimation:

- Applied unit rates, such as cost per labour hour, cost per PCs and cost per server license, to calculate costs based on duration.

Assumptions:

Labor Cost:

- The majority of project effort will be spent on the development phase, so more developers are required: 4-6 developers in total, including both front-end and back-end developers.
- 3 UX/UI developers are assumed to work on projects for the design phases.
- The project duration exceeds one year, requiring up to 3 project managers to some staff may be part-time.
- An allowance of 5% of total labour hours is included for sick leave, meetings, and administrative tasks.
- Given the scale of the project is small to medium, the limited time is 18 months max and the cap budget at \$300,000 project director, project coordinator and business analyst is not required. As PM (project manager) is able to handle a project at this scale.
- There are other roles in the technology field that are not required. Due to the scale of the project and the constraints set.

Material cost:

- Hardware includes PCs for developers and testers, while servers are included in hosting costs.
- Software licenses are required according to the number of users and duration of the project. Especially Figma that allows designers to design low fidelity to high fidelity prototypes with its licences. That enables cost efficiencies.
- Cloud hosting is calculated based on a monthly rate multiplied by 12 months.

Services and Vendors:

- Third-part services are budgeted based on vendor rates per hour and estimated hours multiplied by the standard hourly rate.
- Includes cloud management for the cloud hosting.

Contingency:

- A 17% contingency is included to cover unforeseen costs, including scope changes, delays, or unexpected price fluctuations in materials, services, or labor.

Overheads:

- Indirect costs, such as administration, facilities, and miscellaneous expenses, are considered part of the contingency or embedded in labour/material estimates.

## Linking cost estimation to WBS and pie chart:

The level 1 and level 2 WBS items formed the foundation of the cost estimation. Each level 2 item (e.g., project manager, UX/UI designers, front-end developers, etc), was estimated individually using bottom up methods, then aggregated to produce level 1 totals for labour, materials, services and maintenance, and contingency. These total represented the level 1 pie chart, which illustrates the proportional distribution of costs across major project categories. By aligning cost assumptions such as labour hours, rates and material quantities with each WBS element, the chart provides a clear, justified, and easily interpretable overview of how each resources and expenditures are allocated across the project. This ensures transparency, supports budget planning and allows stakeholders to quickly identify the major cost drivers.

## Cost Baseline:

The cost baseline is a time-phased budget that maps planned expenditure to each month of the project. It will be presented as a monthly cost table showing planned spend, cumulative spend, and percentage of total budget.

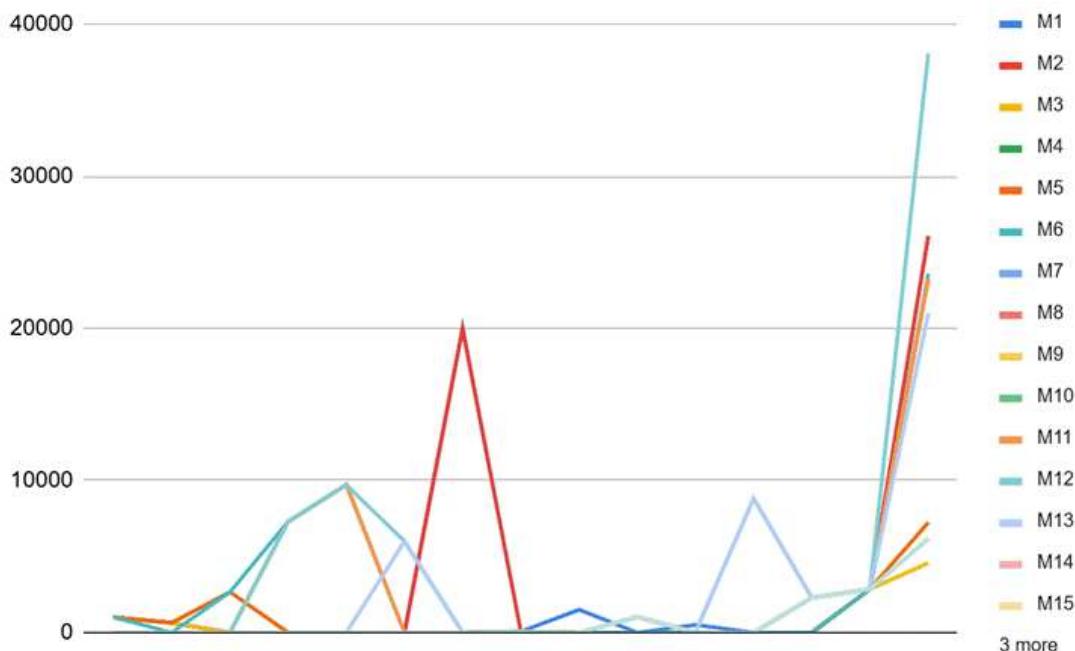
Is it easy to visualise how spending is distributed across the project timeline? Do baseline numbers match the overall cost model? Does the baseline highlight any periods of significant spending?

Describe how the project costs will be monitored and controlled over time. Outline a budget tracking approach, such as:

- Milestone-based cost tracking (tracking expenses at major project milestones).
- Monthly cost reviews to ensure the budget remains on track.
- Variance analysis to detect any potential budget overruns.

## Cost baseline Model:

WBS Item	Unit/Rate	M1	M2	M3	M4	M5	M6	M7	M8	M9	M10	M11	M12	M13	M14	M15	M16	M17	M18	Total
1.1 Project Manager 40hrs	\$100/hr	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	10000
1.2 Data Analyst 50hrs	\$100/hr	840	840	840	840	840	840	840	840	840	840	840	840	840	840	840	840	840	840	8400
1.3 UX/UI Design 50hrs	\$100/hr	0	0	0	240	240	240	240	240	240	240	240	240	240	240	240	240	240	240	0
1.4 Front end dev 80hrs	\$80/hr	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1.5 Back end dev 80hrs	\$80/hr	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1.6 QA Testers 30hrs	\$60/hr	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1.7 PCs 20hrs	\$2,000 each	20000	20000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	60000
2.1 Figma 10 hrs x 13 months	\$15/month	89	46	89	89	89	89	89	89	89	89	89	89	89	89	89	89	89	89	890
2.2 Visual Studio 12 months	\$1,200/month	1200	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	14400
2.3 Cloud hosting 12 months	\$1,200/month	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2.4 Payments 5% fee	\$100 each	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2.5 Regressions 44 hrs	\$40/hr	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2.6 Prod launch 100hrs	\$40/hr	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2.7 Contingency 10 weeks	\$2000/weeks	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	36000
<b>Total</b>		<b>30000.21</b>	<b>30000.21</b>	<b>30000</b>	<b>540000</b>															



The cost baseline model and the line graph shown above has represented the approved time-phased budget \$300,000 spread across the 18 months project duration. The monthly cost table clearly illustrates how expenditure is distributed, showing planned spend, cumulative speed, and percentage of the overall budget.

The baseline numbers reconcile with the overall cost model, ensuring that all WBS items are fully captured. It is easy to visualise cost distribution:

**Initiation (Months 1-2):** A significant spike occurs due to upfront equipment purchases (PCs and licences), accounting for over \$40,000 in early spend.

**Design and Development (Months 7-12):** This is the peak spending period, driven by front-end and back-end developer effort, totaling approximately \$119,000.

**Testing (Months 13-14):** Another noticeable spike of around \$40,000 arises from QA and regression testing activities.

**Support and Hosting (Months 7-18):** Costs flatten out but remain steady through cloud hosting, post-launch support, and contingency allocations.

Overall, the baseline highlights that the bulk of expenditure is concentrated in development and QA, while initiation and closure phases carry smaller but distinct peaks.

#### Monitoring and Control Approach

Project costs will be monitored and controlled using the following methods:

Milestone-based cost tracking: At the completion of each major phase (Requirements, Design, Development, Testing, Deployment , Support), actual costs will be compared against the baseline.

Monthly Cost reviews: The Project Manager will review monthly spend against the cost baseline, reconciling invoices, labour hours, and material purchases.

Variance analysis: Variances exceeding over 10% will be escalated, with corrective actions such as adjusting resourcing, reallocation contingency, or rescheduling tasks.

Cumulative cost tracking: An S-curve will be used to monitor burn rate over time and provide early warning of overspending or underspending.

Reporting: Earned Value Management (EVM) techniques, including Cost Performance Index (CPI) and Schedule Performance Index (SPI), will be applied to access cost and schedule efficiency. Findings will be reported to stakeholders during monthly governance meetings.

This approach ensures that the project budget remains controlled, deviations are detected early, and spending is aligned with the approved baseline throughout the 18-month lifecycle.

# 9 Risk Management

## PROJECT RISK REGISTER

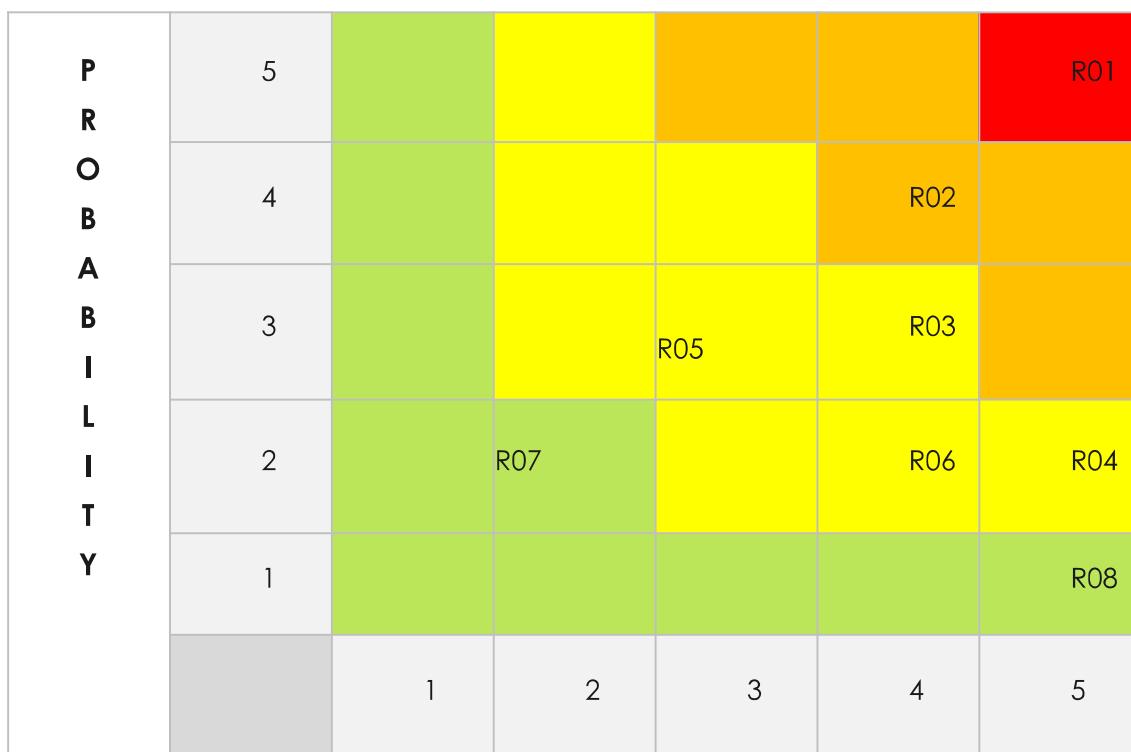
	A	B	C	D	E	F	G	H	I	J
1	RISK ID	RANK	TYPE	RISK DESCRIPTION	IMPACT DESCRIPTION	IMPACT LEVEL	PROBABILITY LEVEL	PRIORITY LEVEL	RISK RESPONSE	OWNER
2	A unique identifier	Based on Priority Level	To ensure diverse risks	Give a brief summary of the risk.	What will happen if the risk is not mitigated or eliminated?	Rate 1 (LOW) to 5 (HIGH)	Rate 1 (LOW) to 5 (HIGH)	(IMPACT X PROBABILITY) Address the highest first.	What can be done to lower or eliminate the impact or probability?	Who's responsible?
3	R01	1	Technical risks	Integration failures between wellness tracking modules - results are inconsistent due to mood, sleep, hydration and screen-time trackers not syncing correctly.	As system may fail to provide accurate results, reducing integrity and usability, users may lose trust in the app and abandon it. This will require significant developer time, impact projected revenue and increase project cost.	5	4	20	Standardise data formats & APIs — use a common data exchange protocol. Regular integration testing across all modules during every sprint, in-line with agile principles.	Technical Lead

4	R02	2	Budget or schedule risks	Exceeding budget due to underestimate development costs - costs for design, development, and testing may exceed the \$300,000 budget.	Running out of funds would cut features, reduce quality of design and software, and marketing.	4	4	16	Have in place a contingency reserve for these development risks as the first level and a management reserve for unidentified risks as the second level. Engage an external auditor to ensure spending transparency and alignment with the estimated budget.	Project Manager
5	R03	3	Stakeholder or communication risks	Delays in stakeholder approvals - product owner may not review documents or backlog items on time	Delays causes disruption of sprint planning, failure to meet milestone deadline, and push back launch.	4	3	12	Before project initiation, deeply screen product owners and choose a reliable and punctual person. Also, use workflow tools (like Jira) that sends regular reminders	Project Owner

6	R04	3	External Risks	App store rejection by Apple and Google - app may not meet policy requirements.	Delays on launch and unplanned reworking to comply with guidelines.	5	2	10	Review guidelines early and monitor for new guidelines throughout the project. Outsource a consultant specialising in app store policy requirements for advice.	QA Lead
7	R05	4	Stakeholder or communication risks	Disagreement between sponsor and product owner - conflicting priorities of budget and features.	Leads to rework, confusion in backlog.	3	3	9	Document and agree on authority and who makes which decisions. Use MoSCoW to agree on and prioritise features during each sprint.	Project Manager
8	R06	4	Opportunity	A leading wellness app competitor experiences a major service outage - users are frustrated and start looking for a new wellness app	Creates an opportunity to attract users to our app.	4	2	8	Ensure that LoopCare has a strong digital presence (e.g., Instagram, LinkedIn) and run ads, so customers can easily discover our app's capabilities, ultimately leading to adoption. Offer a free premium period for joining during the time.	Marketing team
9	R07	5	Stakeholder or communication risks	Low engagement during beta testing - users may not provide enough feedback.	Lack of feedback reduces product refinement before grand launch, issues may be missed.	2	2	4	Provide high incentive rewards for participation (such as gift cards). Also, create a detailed recruiting screener to ensure that users participating in our testing are the audience we want	Research Lead

10									
R08	5	Technical risks	Cybersecurity breach - user data may be leaked if encryption or data protection fails.	Legal accountability and damage to reputation may cause possible shutdown.	5	1	5	Lead cybersecurity analyst	Employ a zero trust approach with role-based access for our systems. Regularly store data backups in a cold or warm data recovery site. Monitor our systems on a regular basis. If a breach occurs, immediately isolate the affected system and call in a pre-built incident response team. Prepare a communication strategy for informing users and stakeholders.

## RISK PRIORITISATION



	<b>I M P A C T</b>
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## TIME AND COST ANALYSIS REPORT FOR MANAGEMENT

Risk id	Risk name	Response plan	Cost (estimated)	Time (estimated)
R01	Integration failures	Regular integration testing across all modules during each sprint.	\$29 (CI/CD subscription) x 7 months = \$203	( 0.5 + 4 (1) + 3 ) / 6 = 1.25 day x 10 (sprints) = 13 days
R02	Exceeding budget	Engage an external auditor to ensure spending transparency and alignment with the estimated budget.	\$2,000 (external auditor) x 1 day = \$2000	(0.25 + 4(1) + 3) / 6 = 1 day
R03	Delays in stakeholder approvals	Use a workflow tool (namely Jira) for reminders and task management	\$13.50 per month (Jira subscription) x 7 months = \$94,5	(3 + 4(7) + 18) / 6 = 8 days
R04	Google & Apple App store rejection	Review app store guidelines early and monitor for new guidelines throughout the project	\$0	(7 + 4(28) + 50) / 6 = 28 days
R05	Disagreement between sponsor and product owner	Document authority and agree on who makes which decisions.	\$900 (product owner) x 2 days = \$1800  \$1100 (project sponsor) x 2 days = \$2200	(1 + 2(4) + 3) / 6 = 2 days
R06	Competitor experiences service outage	Ensure that LoopCare has a strong digital presence (e.g., Instagram, LinkedIn) by running ads, so customers can discover our app's capabilities and adopt us.	\$240 (marketing research team leader) x 5 days = \$1200  \$226 (marketing support employee) x 5 days = \$1130	(3 + 5(4) + 7) / 6 = 5 days
R07	Low engagement during	Provide high incentive rewards for participation (namely	30 students x \$50 (per gift card) x 2 days = \$3000	(1 + 2(4) + 3) / 6 = 2 days

	testing	gift cards).		
R08	Cyber breach	If a breach occurs, immediately isolate the affected system and call in a pre-built incident response team to minimise downtime. Prepare a communication strategy with a GRC consultant for informing users and stakeholders.	<p>\$1300 (technical security architect) x 19.75 days = \$25,675</p> <p>\$900 (SOC analyst) x 19.75 = \$17,775</p> <p>\$1100 (GRC consultant) x 19.75 days = \$21,725</p>	<p>(0.5 + 7(4) + 90) / 6 = 19.75 days</p> <p>*Recovery from an attack may take anywhere from a few hours to several months.</p>

# 10 Group Reflection

At the beginning of planning our project, we agreed on some ground rules in our working agreement, like keeping in touch with each other regularly, sharing the workload fairly and being upfront if anything wasn't going according to the plan. Having that in writing gave us something to come back to whenever things weren't as organised and it really helped us to get back on track.

When it came to leading the team, Sarah naturally took on the role, guiding the team through tasks and keeping us focused on deadlines. Lindsay took the lead when working on the Gantt chart and various other tasks, while Ali guided the RTM and scheduling. Spa contributed on various tasks including helping with the pitch preparation as well as keeping the team motivated during meetings. Even though the leadership wasn't split evenly, Sarah's consistency gave the team a clear direction and others stepped in where their strengths matched the task.

Support was really a big part of why our group ran smoothly. We used our Instagram group chat almost everyday to check in with each other and share updates. If someone was behind on a particular task, others would step in to help. Google docs were also a really big part in working on the task simultaneously and fixing any mistakes. One example was when the dates between the charter and the Gantt chart didn't line up, instead of blaming each other feedback was given from members and the problem was fixed.

There were moments where our thoughts might've not been the same at the start especially around what should be included in or excluded from the scope. But going back to the project constraints - 18 month deadline and \$300k budget, it helped to make clearer decisions. We also leaned on our working agreement to talk openly and solve problems together and move forward once a choice is made. This made things respectful and prevented small talk.

If we were to improve, we'd focus on managing our time more evenly. Too much work was pushed closer to the deadline, which added pressure. Setting earlier internal deadlines within the group would give us more space to produce quality and time to review. Overall, the project ran smoothly and as expected overall. This project showed us how study leadership, mutual support, and honest communication can make teamwork productive and enjoyable.

# 11 Individual Reflection

## Sarah (33906955):

As the planner of our group, my main responsibility was to organise tasks, assign work to members, and monitor time needed for each activity. This reflection outlines my personal experience, challenges, and learning outcomes while working with my team.

During our first assignment, I contributed primarily by organising tasks, creating the required documentations, preparing powerpoint presentation and completing the cost model. These responsibilities reflects my role as the planner, prioritising tasks based on deadlines and ensuring smooth coordination among team members. Through this process, I have developed my skills in scheduling and delegating tasks effectively.

However, I faced challenges such as managing my other coursework alongside this assignment and adapting to a project that is less realistic. These difficulties highlighted the importance of flexibility and time management. I also realised the value of breaking large tasks into manageable segments to avoid bottlenecks.

From this experience, I learned the practical application of the project lifecycle, cost modeling, and task prioritisation in a team setting. Reflecting critically, I recognise that while I contributed effectively, I could improve by balancing work loads more evenly and adopting proactive communication strategies.

Overall, I would assign myself a grade of D, acknowledging both my contribution and areas for growth. I would also grade the team as D, recognising that while we collaborated well, improvement in time management and task allocations are needed. In future assignments, I plan to split tasks amongst members to work independently while coordinating deliverables. This method should enhance efficiency to team performance.

## Ali Azeemi (33843309):

For me, working on this project has been a mix of challenging and rewarding moments. Overall, it has been a good learning experience. I mostly worked on the RTM and on the scheduling side of things, I enjoyed the structure of those tasks and made sure they linked to the WBS and the scope. The team valued this, but I know I could've spoken more in some design discussions instead of holding back.

One thing I noticed about myself is that I can be reliable when I have a clear task I am working on, but I sometimes lean on others to lead the way. For example, Sarah was driving a lot of the project and I followed along instead of throwing in more of my ideas. I think a part of that comes from juggling uni assignments and deadlines with my work. Which meant most times I worked closer to the edge than I should have.

However, what worked really well is that we communicated the tasks well. Instagram chat and google doc kept us all in sync and made it very easy to share feedback quickly with

each other without wasting time. What didn't work so well was leaving too much until last week, which created unnecessary stress. Next time, I'd like to set up my own deadlines and be more active in conversations.

For myself I would give myself a D, for the team I would give us a B. We had a really strong support connection.

### Spa M (33728119):

In the first seven weeks of this semester, my team and I worked on Assignment 1 of FIT2002. The assignment focused on applying project management skills to develop a project for our client LifeLoop. Our team agreed on LoopCare for our project, a student wellness app.

I found the assignment to be eye-opening but overwhelming. At the beginning, I dreaded having to work on a group assignment – at the end, I felt grateful to be a part of the team. I appreciated Sarah's leadership — I believe the other members also feel the same.

Our team communicated effectively. We regularly discussed with each other via Instagram. When we had a question that the other members could not answer (e.g., if the maintenance period should be included in the WBS), I escalated it to our TA.

Transparency between what members were working on was lacking, and I often found myself confused about my responsibilities. If I was more knowledgeable in project management, I could have better split the group into self-organising teams.

We were more comfortable with working individually than in a group, which sometimes led to members working on a task without feedback from others. This was our first experience with documenting an IT project, and considering we were developing an imaginary product, it was challenging and ambiguous.

In conclusion, I would give my team and myself a D. I have come to enjoy working in a team, and now better understand the project lifecycle. For future assignments, I would use Trello for transparency. Going forward, I need to seek out opportunities through PMI certifications to develop my project management skills.

### Genevieve W (34445668):

By being the innovator of the group, I was responsible to bring new ideas, creative solutions, and ways to approach the assignment. For our first assignment, I contributed by providing ideas and helped with tasks such as scope statement, Gantt chart, and project risk management to ensure that we all finish the task on time. I also contributed to the gamification aspect of our project, which made our work more unique and engaging.

I struggled with managing my time as I had other projects and tests from other units. This caused me to finish some tasks later than expected, adding pressure as deadlines is

nearing. I felt stressed knowing my delays can slow down the team's progress. I also felt guilty for not handling my responsibilities as efficiently as I could've.

Although I had completed my tasks, I was disappointed that they felt rushed due to my procrastination. My delays could've negatively impacted the team if we had fallen behind schedule.

This experience showed me the importance of proper time management and planning. If I had organised my time better, I could have produced higher-quality work and reduced stress for myself and the group. Working with my teammates helped us stay on track each week and avoid rushing on the due date.

I would assign myself a grade of D for my contributions and the team with D as we could have improved with better implemented time management as a whole. To conclude, I learned that effective scheduling and clear task planning are crucial to managing multiple assignments. In future assignments, I will create a personal timeline, set deadlines, and regularly communicate my progress with my team.

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## **13 Appendix**