

# **FIT2002 - Assignment 1**

## **LoopCare: Digital Wellness Companion**

**Team Number:** 0103

**Team Members:**

Joseph Smith (33840334)

Nidhin (34778675)

Jack Rudd (35084243)

Chengwei Zu (35002875)

## Table Of Contents:

<b>Deliverable 1 - Team Working Agreement.....</b>	<b>2</b>
<b>Deliverable 2 - Project Charter.....</b>	<b>3</b>
Project Title and Description:.....	3
Project Objectives:.....	3
Project start and finish dates:.....	3
High level project budget information:.....	3
Project manager's name and contact information:.....	4
Main Project Success Criteria:.....	4
Project development approach:.....	4
Key stakeholders and their roles in the organisation and in the project:.....	4
Assumptions And Exclusions:.....	5
<b>Deliverable 4 - Requirements Traceability Matrix (RTM).....</b>	<b>6</b>
<b>Deliverable 5 - Project Scope Statement.....</b>	<b>7</b>
Section 1: Scope Management.....	7
1.1 Project Scope Statement.....	7
1.2 Deliverables & Acceptance Criteria.....	7
1.3 Exclusions:.....	9
1.4 Constraints & Assumptions.....	9
1.6 Annotated Work Breakdown Structure (WBS) & Gantt Chart.....	10
<b>Deliverable 6&amp;7 - WBS and Gantt Chart.....</b>	<b>11</b>
Screenshots:.....	11
<b>Deliverable 8- Cost Model &amp; Baseline.....</b>	<b>13</b>
Task 3.5.1 – Develop Cost Model.....	13
Task 3.5.2 – Cost Estimation Methodology And Justification.....	14
Justifications:.....	15
Task 3.5.3 – Cost Baseline.....	16
<b>Deliverable 9 - Risk Management plan.....</b>	<b>20</b>
Task 3.6 - Risk Register Requirements.....	20
Risk Probability And Impact Matrix:.....	23
Risk Priority Ranking and Response Plan.....	24
Response Planning.....	25
Time and cost analysis report for management.....	26
<b>Deliverable 10 - Group Reflection.....</b>	<b>28</b>
<b>Deliverable 11 - Individual Reflection.....</b>	<b>29</b>
<b>References.....</b>	<b>32</b>

# Deliverable 1 - Team Working Agreement

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

<b><i>Team number</i></b>	0103
<b><i>Team members</i></b>	Joseph Smith, Nidhin, Jack Rudd, Chengwei Zu
<b><i>Team objectives</i></b>	To achieve an HD in this unit
<b><i>Team characteristics</i></b>	Our team is friendly and collaborating. We as a team strongly believe that we could work together efficiently towards our goal in this unit.
<b><i>Core values</i></b>	<ul style="list-style-type: none"> <li>● Communication</li> <li>● Openness to feedback and learning</li> <li>● Respect team member's ideas</li> <li>● Fair and equally divided responsibilities</li> <li>● Teamwork</li> <li>● Timely submission</li> <li>● Accountability</li> <li>● Quality of work</li> </ul>
<b><i>Group norms and code of conduct</i></b>	We will all equally contribute to group work and ensure we complete assignments in a timely manner. When completing an assignment we will identify what needs to be completed and divide the work evenly. We will make sure to discuss and critique the work done by all to ensure everyone is content with the standard and quality of work.
<b><i>Participation and collaboration approach</i></b>	We consider using text messages and early-informed meetings to discuss the project and individual progression. Platforms like Google Drive and Trello would also be considered to effectively collaborate with the team. Feedbacks would be provided during the meeting sessions.
<b><i>Communications</i></b>	<p>Instagram for informal and fast communication        Weekly meeting        All decisions and document changes should be shared with team members.        If the problem could not be resolved through discussion, it will involve a tutor</p>
<b><i>Problem solving</i></b>	We will strive to communicate anything that impedes our ability to complete our part of the group work and work to create a solution. We will also try to complete parts of the assignment in advance of the due date to account for any unforeseen circumstances. As for differing opinions on the direction we take in the assignment could involve a discussion about the pros and cons of the viable options and we would then discuss how to proceed.
<b><i>Conflict management</i></b>	If any conflict happens within the team we plan to have a group discussion on the reasons for having different perspectives and vote it out, thereby giving everyone's opinion a fair and equal chance.
<b><i>Signatures</i></b>	Nidhin Joseph Smith Chengwei Zu Jack Rudd

# **Deliverable 2 - Project Charter**

## **Project Title and Description:**

**Project Title:** LoopCare: Digital Wellness Companion

### **Description:**

LoopCare is a digital wellness companion application that tracks emotional well-being, sleep, hydration, and screen time of the users. It includes mindfulness exercises, community challenges and gentle nudges that you'll be sure to enjoy through a point system. The goal is to bring a positive change to the lifestyles of many people.

## **Project Objectives:**

- Develop an engaging, user-friendly application interface.
- The app should be accessible for all kinds of users, follow the WCAG standards and achieve ≥85% accessibility compliance rating (World Wide Web Consortium, 2024).
- Enable users to track and monitor their sleep, hydration, screen time and compare with their previous records.
- The app should be scalable for future modifications and upgrades.
- Conduct 3 iterative usability testing and implementing ≥80% critical improvements.
- Implement AI-driven chatbot in the app for the users to get wellness-related recommendations and feedback.
- The app will be completed within 18 months and supported up to an additional 18 months.
- Loopcare will set itself apart from other wellness apps by being able to connect people in person and strengthen communities.
- Release the functional LoopCare App by 19/02/2027 with ≥95% of planned features implemented.

## **Project start and finish dates:**

**Start Date:** 1 September 2025

**Finish Date:** 19 February 2027

## **High level project budget information:**

**The estimated total budget: \$212,694.8**

- Labour cost: \$153,450
- Hardware: \$18,600
- Software: \$3,250
- Testing: \$8,400
- Training and Support: \$1,252
- Contingency reserve: \$27,742.8

## **Project manager's name and contact information:**

**Project manager:** Joey Smith

**Contact information:** jsmit0059@student.monash.edu

## **Main Project Success Criteria:**

- Functionality of the app with  $\geq 95\%$  planned features like the ability to track emotional well-being, sleep, hydration, and screen time should be present as described in the pitch.
- The cost of the full app development and support should not exceed the estimated budget of \$212,694.8.
- The app should be accessible according to the Web Content Accessibility Guidelines (WCAG) and achieve  $\geq 85\%$  accessibility compliance rating, ensuring the app can be used by anyone regardless of any impairments (World Wide Web Consortium, 2024).
- The app should be completed, tested and released by 19 February 2027.
- The final version of the app should have  $\geq 85\%$  client satisfaction.

## **Project development approach:**

A hybrid project management methodology will be employed. It will combine the Waterfall method's order and documentation for the initial scope defining sessions and budget discussions with Agile's iterative approach during the development sprints and user testing. The clients prefer this approach and users will appreciate the predictability the method will provide in the app development schedule while still allowing for responsive adaptation after user feedback. Major activities to be completed in the project include development sprints every two weeks, feedback collection from stakeholders as per project milestones, and risk evaluation after every project stage.

## **Key stakeholders and their roles in the organisation and in the project:**

- **Users:** Indirectly dictate most things about the app, likely have relatively low influence.
- **Development Team:** Works on developing the app, they have a strong influence over the project and are likely to care about the outcome as it will reflect on them.
- **Project Manager:** Oversees the development team and has a stronger influence and interest in the outcome of the project as the result will impact them more.
- **Lifeloop Executive Team:** Cares a lot about the outcome of the project, has a much less direct role than the project manager but the app is still tailored around their general specifications.

- **Investors:** Unless an investor has a particularly large stake in lifeloop their influence over the project will be nothing, it is likely there will be some level of interest but not like that of the executive team or project manager.

## **Assumptions And Exclusions:**

### **Assumptions:**

- Partnerships with therapists and wellness specialists can be secured.
- Users will have to access smartphones with internet connectivity.
- Users will provide consent for personal data collection for tracking and analysis.
- Cloud infrastructure will support scalability requirements.
- Appstore and Google Play Store will approve the application.
- Timely feedback would be received from stakeholders.

### **Exclusions:**

- Development of wearable hardware. (eg. Sports wristband, Fitness tracker)
- Web or desktop versions of Loop care. (Mobile only for this phases)
- Insurance and Healthcare system integration.
- AI driven health diagnosis and medical treatment recommendation.

## Deliverable 4 - Requirements Traceability Matrix (RTM)

<b>Project Name:</b>	LoopCare: Digital Wellness Companion				
<b>Project Manager Name:</b>	Joey Smith				
<b>Project Description:</b>	LoopCare is a digital wellness companion application that tracks emotional well-being, sleep, hydration, and screen time of the users. It includes mindfulness exercises, community challenges and gentle nudges that you'll be sure to enjoy through a point system. The goal is to bring a positive change to the lifestyles of many people.				
<b>ID</b>	<b>Requirements (Functional or Non-Functional)</b>	<b>Assumption(s) and/or Customer Need(s)</b>	<b>Category</b>	<b>Source</b>	<b>Status</b>
R1	Track the emotional well-being, sleep, hydration and screen time.	Users require health and wellness monitoring.	Functional	Client Brief	Open
R2	An AI chatbot which assists with all aspects of LoopCare.	Users want an easy and intuitive experience.	Functional	Team assumption	Open
R3	The app must provide mindfulness exercises, and gamified challenges.	Connect will be provided by wellness experts.	Functional	Client Brief	Open
R4	The app should be scalable for future upgrades and improvements.	Users would anticipate new features in the app.	Non-Functional	Client Brief	Draft
R5	The system must scale to support 50k+ concurrent users.	Cloud hosting with load balancing.	Non-Functional	Team Assumption	Draft
R6	User data is securely handled using strong security measures.	Data confidentiality of users is important.	Non-Functional	Client	Open
R7	The app should be able to connect users to registered practitioners via integrated chat or video.	Users value immediate and professional support.	Functional	Team assumption	Open
R8	App's accessibility complies with the WCAG Standards.	The app is designed for all types of users.	Non-Functional	Development Team	Draft

# Deliverable 5 - Project Scope Statement

**Project Title:** LoopCare: Digital Wellness Companion

**Student Name:** Joseph Smith, Nidhin, Jack Rudd, Chengwei Zu

**Student ID:** 33840334,34778675, 35084243,35002875

## Section 1: Scope Management

### 1.1 Project Scope Statement

LoopCare is a digital wellness companion application that tracks emotional well-being, sleep, hydration, and screen time. It includes mindfulness exercises, community challenges and gentle nudges, and a point system. Users can connect with therapists and other specialists, host social events, and access fun mindfulness games. The project aims to promote healthier lifestyles, support mental health, and improve focus and energy during busy schedules. Major deliverable of this project is the LoopCare mobile application, featuring AI-driven chatbot, accessibility compliance with WCAG standards, and an opt-in one time cost meal planning extension is also on the horizon.

### 1.2 Deliverables & Acceptance Criteria

	Functional	Functional	Non functional	Non functional
<b>Wellness tracking app</b>	LoopCare logs wellbeing through daily check-ins.	LoopCare will track sleep stages: deep sleep, REM, light sleep and any other disturbances.	The tracking feature will support 50k+ concurrent users.	The sleep tracking will be accurate.
Success criteria:  Completion Date:	Users can log as often as they choose, and the data is viewable in a weekly report.  08-01-2026	Users can view their sleep stages in the app.  08-01-2026	The system must showcase a stable performance with 50k+ concurrent users.  09-10-2026	Sleep data is at least 95% accurate compared to medical grade devices.  06-11-2026
<b>AI Chatbot</b>	Chatbot should help users navigate the app	The chatbot will give personalised advice	The chatbot will respond quickly	The chatbot will only engage with appropriate topics for the app
Success criteria:	The chatbot provides	Users get tailored advice	Short responses take	The chatbot shall restrict

Completion Date:	accurate guidance in the app.	from the wellbeing data.	no longer than 3 seconds.	interactions to app-relevant topics.
Completion Date:	10-04-2026	10-04-2026	09-10-2026	10-04-2026
<b>Mindfulness exercises and gamified challenges</b>	The app will provide guided mindfulness exercises/videos	Many aspects of the app are gamified	None of the videos or games are too long or tedious and can be done in public	The games and videos are engaging, interesting and fun
Success criteria:	Many different types of videos available	In testing, users actively participate in the gamified aspects of the app	Many activities that don't require sound and can be completed in under 5 minutes	In testing users enjoy these aspects of the app
Completion Date:	08-01-2026	04-02-2026	04-02-2026	10-02-2026
<b>Connection with medical practitioners</b>	Loopcare connects users quickly via chat	Loopcare can setup video appointments	The calls/chats are encrypted	Loopcare can support many calls at once
Success criteria:	Users are able to connect in under 5 minutes	The calls have acceptable audio/video quality according to test users	Penetration tests fail	5000 calls can be supported at once.
Completion Date:	11-09-2026	11-09-2026	25-12-2026	09-10-2026
<b>Accessibility and compliance</b>	Support visually impaired users	Multiple language options available	App shall comply with WCAG guidelines	Cross platform compatibility
Success criteria:	Screenreader integration	There are no errors or issues	Passes an audit	Final testing shows no cross platform issues
Completion Date:	20-02-2026	20-02-2026	20-02-2026	09-10-2026

### **1.3 Exclusions:**

- Development of wearable hardware. (eg. Sports wristband, Fitness tracker)
- Web or desktop versions of Loop care. (Mobile only for this phases)
- Insurance and Healthcare system integration.
- AI driven health diagnosis and medical treatment recommendation.

### **1.4 Constraints & Assumptions**

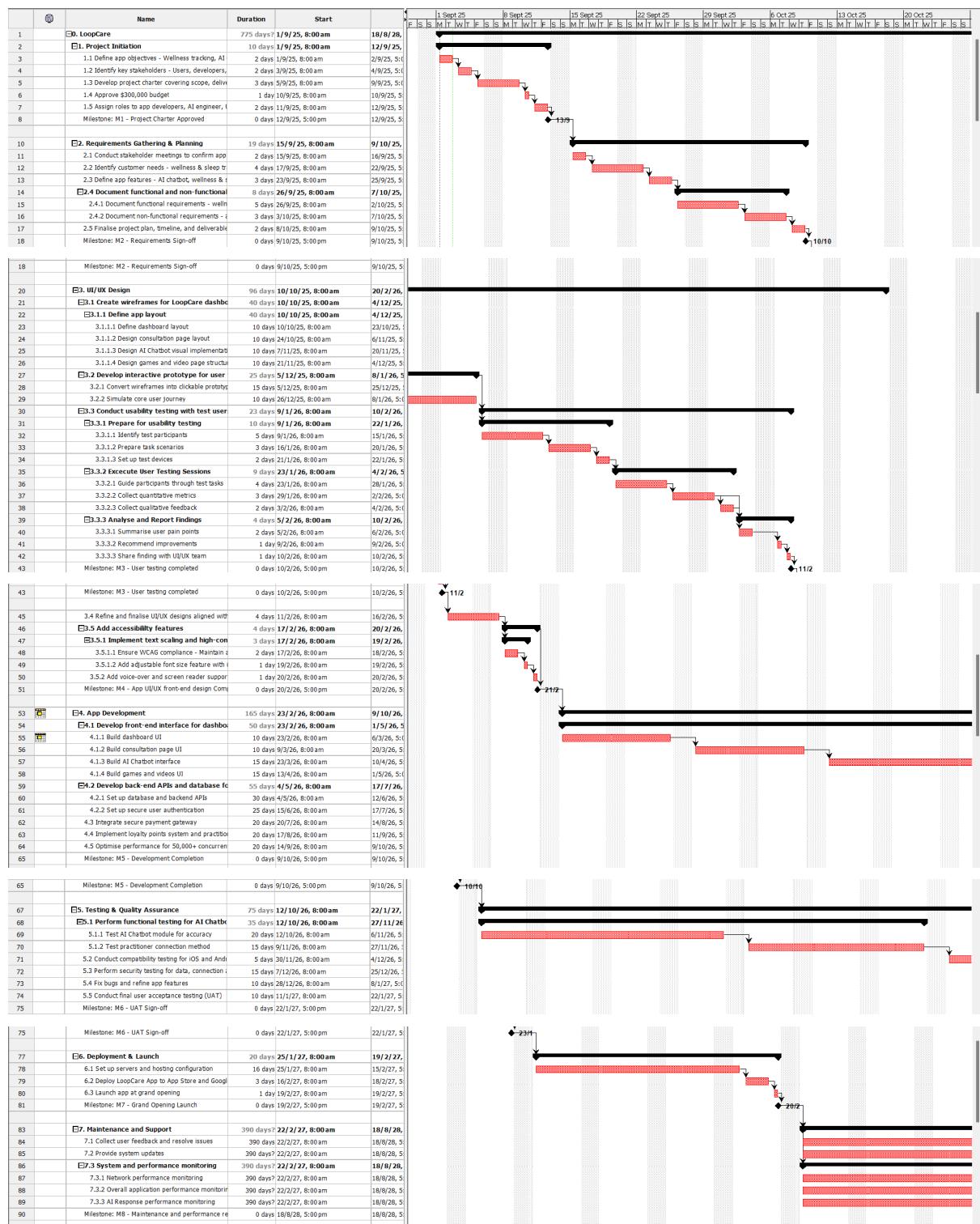
#### **Constraints:**

- The app needs to be completed and tested within 18 months (19-February-2027).
- The app will be supported for 18 months after deployment.
- The budget for this project is \$212,694.8.
- The app is compatible only on mobile devices (iOS and Android).
- Must adhere to Monash Hays IT contactor rates for staff costing.
- Usability and accessibility testing is limited to three rounds of testing.
- The development team must only use the approved technologies for this project.
- A hybrid methodology must be used to complete the project.
- Must comply with data privacy regulations such as the Australian Privacy Act 1988.

#### **Assumptions:**

- Partnerships with therapists and wellness specialists can be secured.
- Users will have to access smartphones with internet connectivity.
- Users will provide consent for personal data collection for tracking and analysis.
- Cloud infrastructure will support scalability requirements.
- Appstore and Google Play Store will approve the application.
- Timely feedback would be received from stakeholders.

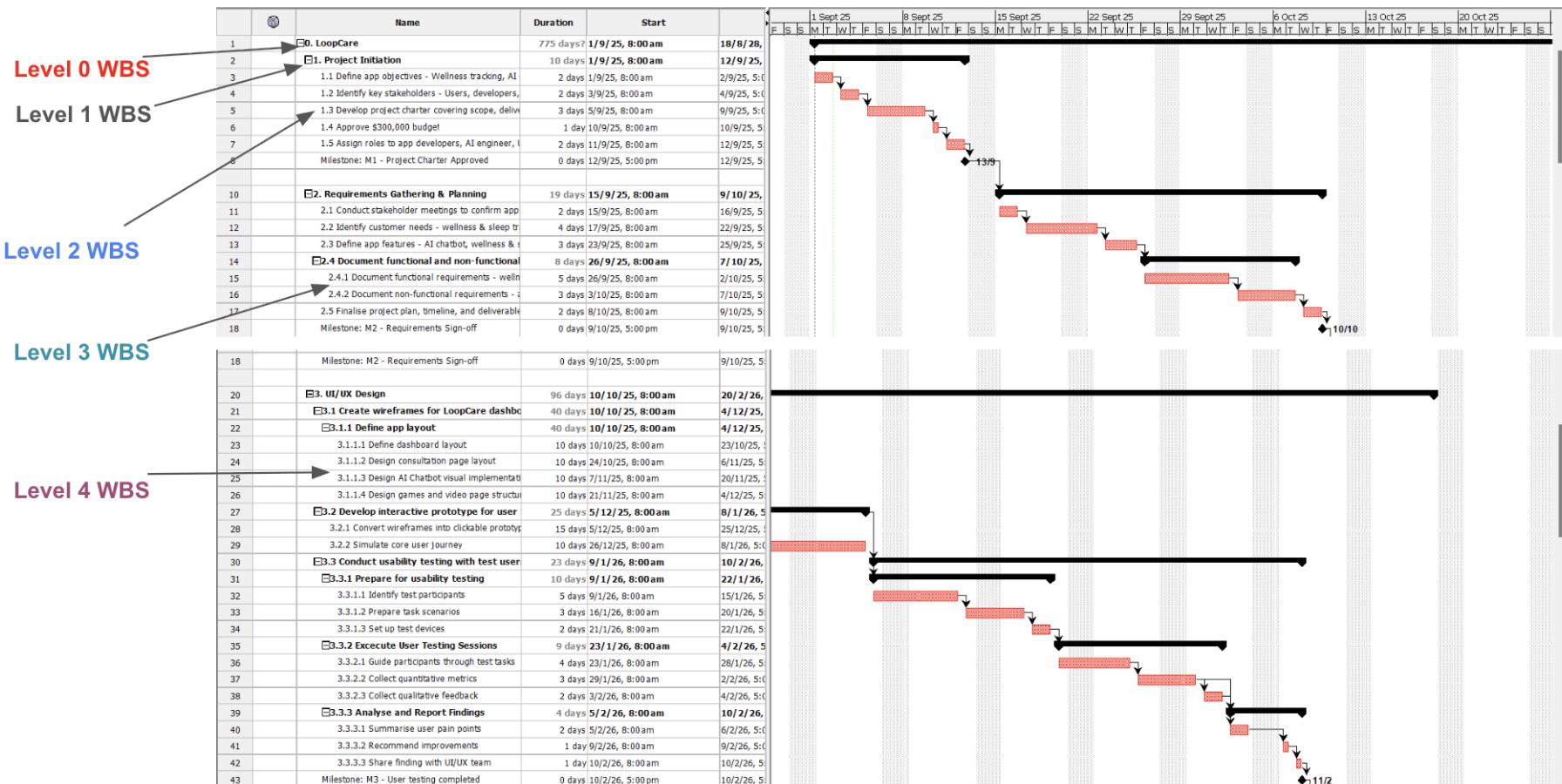
## 1.6 Annotated Work Breakdown Structure (WBS) & Gantt Chart



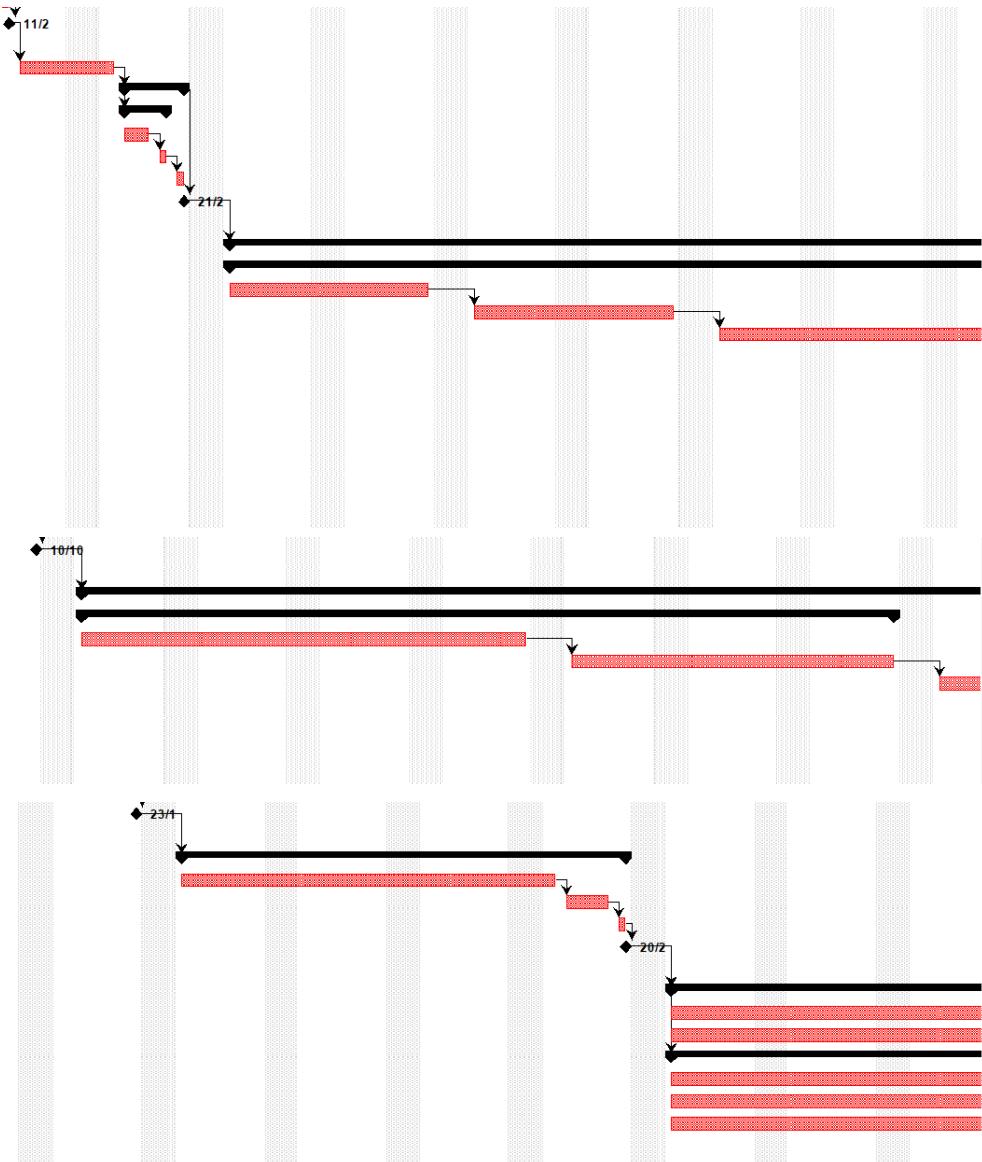
The above screenshots shows WBS & Gantt Chart with critical dependencies and 8 milestones.

## Deliverable 6&7 - WBS and Gantt Chart

### Screenshots:



43	Milestone: M3 - User testing completed	0 days	10/2/26, 5:00 pm	10/2/26, 5:00 pm
45	3.4 Refine and finalise UI/UX designs aligned with user feedback	4 days	11/2/26, 8:00 am	16/2/26, 5:00 pm
46	■3.5 Add accessibility features	4 days	17/2/26, 8:00 am	20/2/26, 5:00 pm
47	■3.5.1 Implement text scaling and high-contrast mode	3 days	17/2/26, 8:00 am	19/2/26, 5:00 pm
48	3.5.1.1 Ensure WCAG compliance - Maintain accessibility throughout the app	2 days	17/2/26, 8:00 am	18/2/26, 5:00 pm
49	3.5.1.2 Add adjustable font size feature with keyboard navigation support	1 day	19/2/26, 8:00 am	19/2/26, 5:00 pm
50	3.5.2 Add voice-over and screen reader support for AI Chatbot	1 day	20/2/26, 8:00 am	20/2/26, 5:00 pm
51	Milestone: M4 - App UI/UX front-end design Complete	0 days	20/2/26, 5:00 pm	20/2/26, 5:00 pm
53	■4. App Development	165 days	23/2/26, 8:00 am	9/10/26, 5:00 pm
54	■4.1 Develop front-end interface for dashboard	50 days	23/2/26, 8:00 am	1/5/26, 5:00 pm
55	4.1.1 Build dashboard UI	10 days	23/2/26, 8:00 am	6/3/26, 5:00 pm
56	4.1.2 Build consultation page UI	10 days	9/3/26, 8:00 am	20/3/26, 5:00 pm
57	4.1.3 Build AI Chatbot interface	15 days	23/3/26, 8:00 am	10/4/26, 5:00 pm
58	4.1.4 Build games and videos UI	15 days	13/4/26, 8:00 am	1/5/26, 5:00 pm
59	■4.2 Develop back-end APIs and database functionality	55 days	4/5/26, 8:00 am	17/7/26, 5:00 pm
60	4.2.1 Set up database and backend APIs	30 days	4/5/26, 8:00 am	12/6/26, 5:00 pm
61	4.2.2 Set up secure user authentication	25 days	15/6/26, 8:00 am	17/7/26, 5:00 pm
62	4.3 Integrate secure payment gateway	20 days	20/7/26, 8:00 am	14/8/26, 5:00 pm
63	4.4 Implement loyalty points system and practitioner rewards	20 days	17/8/26, 8:00 am	11/9/26, 5:00 pm
64	4.5 Optimise performance for 50,000+ concurrent users	20 days	14/9/26, 8:00 am	9/10/26, 5:00 pm
65	Milestone: M5 - Development Completion	0 days	9/10/26, 5:00 pm	9/10/26, 5:00 pm
66	Milestone: M5 - Development Completion	0 days	9/10/26, 5:00 pm	9/10/26, 5:00 pm
67	■5. Testing & Quality Assurance	75 days	12/10/26, 8:00 am	22/1/27, 5:00 pm
68	■5.1 Perform functional testing for AI Chatbot	35 days	12/10/26, 8:00 am	27/11/26, 5:00 pm
69	5.1.1 Test AI Chatbot module for accuracy	20 days	12/10/26, 8:00 am	6/11/26, 5:00 pm
70	5.1.2 Test practitioner connection method	15 days	9/11/26, 8:00 am	27/11/26, 5:00 pm
71	5.2 Conduct compatibility testing for iOS and Android devices	5 days	30/11/26, 8:00 am	4/12/26, 5:00 pm
72	5.3 Perform security testing for data, connection and user authentication	15 days	7/12/26, 8:00 am	25/12/26, 5:00 pm
73	5.4 Fix bugs and refine app features	10 days	28/12/26, 8:00 am	8/1/27, 5:00 pm
74	5.5 Conduct final user acceptance testing (UAT)	10 days	11/1/27, 8:00 am	22/1/27, 5:00 pm
75	Milestone: M6 - UAT Sign-off	0 days	22/1/27, 5:00 pm	22/1/27, 5:00 pm
76	Milestone: M6 - UAT Sign-off	0 days	22/1/27, 5:00 pm	22/1/27, 5:00 pm
77	■6. Deployment & Launch	20 days	25/1/27, 8:00 am	19/2/27, 5:00 pm
78	6.1 Set up servers and hosting configuration	16 days	25/1/27, 8:00 am	15/2/27, 5:00 pm
79	6.2 Deploy LoopCare App to App Store and Google Play	3 days	16/2/27, 8:00 am	18/2/27, 5:00 pm
80	6.3 Launch app at grand opening	1 day	19/2/27, 8:00 am	19/2/27, 5:00 pm
81	Milestone: M7 - Grand Opening Launch	0 days	19/2/27, 5:00 pm	19/2/27, 5:00 pm
82	Milestone: M7 - Grand Opening Launch	0 days	19/2/27, 5:00 pm	19/2/27, 5:00 pm
83	■7. Maintenance and Support	390 days?	22/2/27, 8:00 am	18/8/28, 5:00 pm
84	7.1 Collect user feedback and resolve issues	390 days	22/2/27, 8:00 am	18/8/28, 5:00 pm
85	7.2 Provide system updates	390 days?	22/2/27, 8:00 am	18/8/28, 5:00 pm
86	■7.3 System and performance monitoring	390 days?	22/2/27, 8:00 am	18/8/28, 5:00 pm
87	7.3.1 Network performance monitoring	390 days?	22/2/27, 8:00 am	18/8/28, 5:00 pm
88	7.3.2 Overall application performance monitoring	390 days?	22/2/27, 8:00 am	18/8/28, 5:00 pm
89	7.3.3 AI Response performance monitoring	390 days?	22/2/27, 8:00 am	18/8/28, 5:00 pm
90	Milestone: M8 - Maintenance and performance review	0 days	18/8/28, 5:00 pm	18/8/28, 5:00 pm



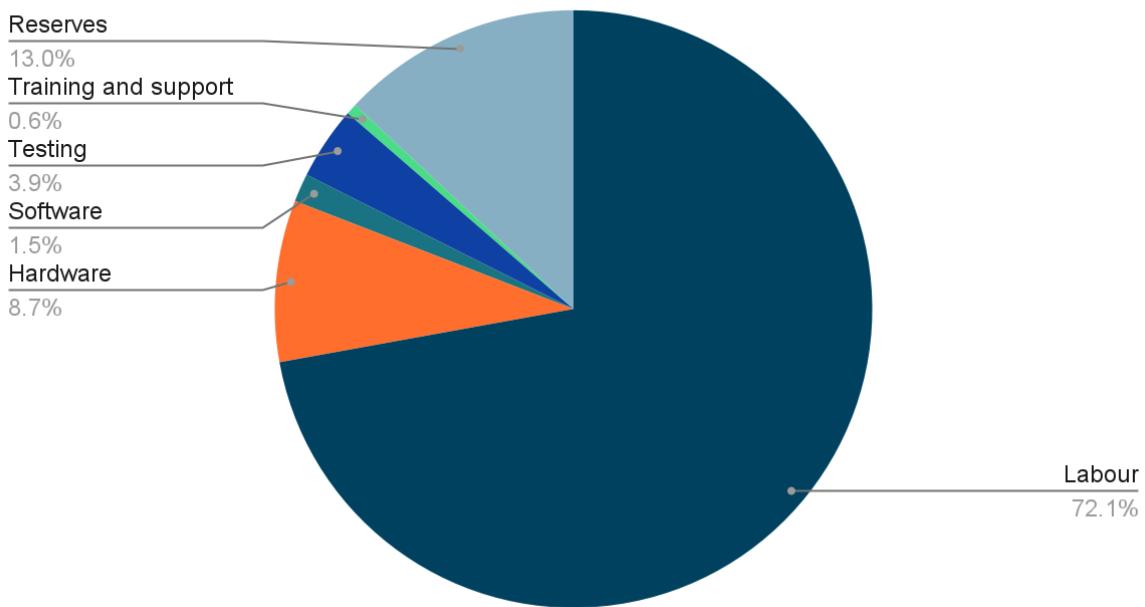
## Deliverable 8- Cost Model & Baseline

### Task 3.5.1 – Develop Cost Model

WBS Items	Units/Hour	Cost/Unit or Hr	Subtotal	WBS Level 2 total	% of Total
	s				
<b>1. Labour</b>				\$153,450	72.14%
1.1 Project Manager	540	\$100	\$54,000		
1.2 AI Engineer	150	\$75	\$11,250		
1.3 UX/UI Designer	700	\$94	\$65,800		
1.4 Marketing Specialist	160	\$50	\$8,000		
1.5 QA Tester	240	\$60	\$14,400		
<b>2. Hardware</b>				\$18,600	8.74%
2.1 Mobile Testing Devices (Android and iOS)	4	\$400	\$1600		
2.2 Database Server	1	\$5000	\$5000		
2.3 PCs for Developer (MSI Prestige 16)	5	\$2000	\$10000		
2.4 Backup Drives (5TB WD Elements SE)	5	\$200	\$1000		
2.5 Networking Equipments (Router, Switches, Firewall)	10	\$100	\$1000		
<b>3. Software</b>				\$3,250	1.53%
3.1 Windows 11 Enterprise OS Licenses	1	\$200	\$200		
3.2 Database Software Licenses (MS SQL Server Standard Edition)	1	\$1,400	\$1,400		
3.3 Security Softwares	6	\$150	\$900		
3.4 App Development Tools (Figma)	5	\$150	\$750		
<b>4. Testing</b>				\$8400	3.95%
4.1 External Usability Testing provider	80	\$90	\$7200		
4.2 Automated testing tool	6months	\$200/month	\$1200		

<b>5. Training and Support</b>				\$1252	0.59%
5.1 Staff onboarding for managing databases, bookings, and loyalty points systems	10	\$37	\$370		
5.2 App support training platform	18 months	\$49/month	\$882		
<b>Total</b>				\$184,952	85%
<b>6. Reserves</b>				\$27,742.8	
Contingency	15%		\$27,742.8		15%
<b>Grand Total</b>				\$212,694.8	100%

### Points scored



### Task 3.5.2 – Cost Estimation Methodology And Justification

Costs were calculated line by line from the WBS, with each role, hardware item, and software license estimated individually, then summed into subtotals and the project total. For example, the UX/UI Designer cost was based on hourly rate × estimated hours.

We applied bottom-up estimation for detailed WBS items and calculated the overall project cost. To calculate the cost of labour required we used analogous estimation by referring to

the Hays Technology Contractor Rates Guide to understand the specific roles and their associated costs required to develop the LoopCare application. This methodology was used in conjunction with a parametric estimation. For labour, we estimated the number of hours required based on the WBS and gantt chart to determine the required personnel and how long they would be needed to complete their portion of the project. This hybrid cost estimation methodology has helped us ensure realistic and justifiable costs for the LoopCare app development project.

#### **Justifications:**

**Labour Rates:** Based on Hays Contractor Guide 2024 and Monash guidelines. Roles included Project Manager (\$100/hr), AI Engineer (\$75/hr), UX/UI Designer (\$94/hr), Marketing Specialist (\$50/hr), and QA Tester. These rates ensure a realistic and up to date Australian market salaries for the given roles. The hours were estimated by linking them directly to the WBS and the Gantt Chart, where each task's duration has been mapped to scope deliverables. Therefore, the hours estimated aligns directly with the scope and task complexity (Hays, 2024).

**Material Costs:** Hardware and software costs were estimated using parametric estimation (unit price). Prices for the devices, servers and licenses were taken from the official vendors' websites. Vendor selections (such as Windows for OS, Figma, MS SQL Server Standard Edition, MSI Prestige 16 PCs etc...) were based on compatibility with app development requirements, performance, durability and cost efficiency. We also considered industry standards and long term support to carry out the app development project smoothly.

**Services:** External usability testing, automated testing tools and security audits were priced using analogous estimation based on comparable app development projects at Monash and industry benchmark. These were selected based on reputation, reliability and strategic fit for the project's development requirements.

**Training & Support:** Staff onboarding calculated with hourly rates. Training platforms such as [connectteam.com](https://connectteam.com) were used to provide an extra support, helping improve the team efficiency during deployment as well as maintenance phases of the LoopCare App.

**Contingency:** A 15% buffer was added to cover possible risks such as delays or supply issues. This percentage was chosen based on the project's risk exposure and to avoid potential budget fluctuations due to updates in the project's scope and market uncertainties, aligning with PMI guidance for contingency (England & Moreci, 2012). Therefore, this provides a realistic safety margin without making the budget unnecessarily high.

### Task 3.5.3 – Cost Baseline

WBS Item	Units/Hour s	Rate/Unit	Subtotal	M1	M2	M3	M4	M5	M6	M7	M8
1.1 Project Manager	540	\$100	\$54,000	\$3,000	\$3,000	\$3,000	\$3,000	\$3,000	\$3,000	\$3,000	\$3,000
1.2 AI Engineer	150	\$75	\$11,250	-	-	-	-	-	-	-	\$2,250
1.3 UX/UI Designer	700	\$94	\$65,800	\$3,655.55	\$3,655.55	\$3,655.55	\$3,655.55	\$3,655.55	\$3,655.55	\$3,655.55	\$3,655.55
1.4 Marketing Specialist	160	\$50	\$8,000	-	-	-	-	-	-	-	-
1.5 QA Tester	240	\$60	\$14,400	-	-	-	-	-	-	-	-
2.1 Mobile Testing Devices (Android and iOS)	4	\$400	\$1,600	-	-	-	\$1,600	-	-	-	-
2.2 Database Server	1	\$5000	\$5,000	-	-	-	-	-	\$5,000	-	-
2.3 PCs for Developer (MSI Prestige 16)	5	\$2000	\$10,000	\$10,000	-	-	-	-	-	-	-
2.4 Backup Drives (5TB WD Elements SE)	5	\$200	\$1,000	\$1,000	-	-	-	-	-	-	-
2.5 Networking Equipments (Router, Switches, Firewall)	10	\$100	\$1,000	\$1,000	-	-	-	-	-	-	-
3.1 Windows 11 Enterprise OS Licenses	1	\$200	\$200	\$200	-	-	-	-	-	-	-
3.2 Database Software Licenses (MS SQL Server)	1	\$1,400	\$1,400	\$1400	-	-	-	-	-	-	-

Standard Edition)											
3.3 Security Softwares	6	\$150	\$900	\$900	-	-	-	-	-	-	-
3.4 App Development Tools (Figma)	5	\$150	\$750	\$750	-	-	-	-	-	-	-
4.1 External Usability Testing provider	80	\$90	\$7,200	-	-	-	-	-	-	-	-
4.2 Automated testing tool	6 months	\$200/month	\$1,200	-	-	-	-	-	-	-	-
5.1 Staff onboarding for managing databases, bookings, and loyalty points systems	10	\$37	\$370	-	-	-	-	-	-	-	-
5.2 App support training platform	18 months	\$49/month	\$882	\$49	\$49	\$49	\$49	\$49	\$49	\$49	\$49
6. Reserves (15%)	-	-	\$27,742.8	\$1,541.22	\$1,541.22	\$1,541.22	\$1,541.22	\$1,541.22	\$1,541.22	\$1,541.22	\$1,541.22
<b>Total</b>				<b>\$22,895.77</b>	<b>\$8,245.77</b>	<b>\$8,245.77</b>	<b>\$9,845.77</b>	<b>\$8,245.77</b>	<b>\$13,245.77</b>	<b>\$8,245.77</b>	<b>\$10,495.77</b>

WBS Item	M9	M10	M11	M12	M13	M14	M15	M16	M17	M18	Total
1.1 Project Manager	\$3,000	\$3,000	\$3,000	\$3,000	\$3,000	\$3,000	\$3,000	\$3,000	\$3,000	\$3,000	<b>\$54,000</b>
1.2 AI Engineer	\$2,250	\$2,250	\$2,250	\$2,250	-	-	-	-	-	-	<b>\$11,250</b>
1.3 UX/UI Designer	\$3,655.55	\$3,655.55	\$3,655.55	\$3,655.55	\$3,655.55	\$3,655.55	\$3,655.55	\$3,655.55	\$3,655.55	\$3,655.55	<b>\$65,800</b>
1.4 Marketing Specialist	-	-	-	-	-	-	-	-	\$4000	\$4000	<b>\$8000</b>

1.5 QA Tester	-	-	-	\$2,400	\$2,400	\$2,400	\$2,400	\$2,400	\$2,400	-	<b>\$14400</b>
2.1 Mobile Testing Devices (Android and iOS)	-	-	-	-	-	-	-	-	-	-	<b>\$1600</b>
2.2 Database Server	-	-	-	-	-	-	-	-	-	-	<b>\$5000</b>
2.3 PCs for Developer (MSI Prestige 16)	-	-	-	-	-	-	-	-	-	-	<b>\$10000</b>
2.4 Backup Drives (5TB WD Elements SE)	-	-	-	-	-	-	-	-	-	-	<b>\$1000</b>
2.5 Networking Equipments (Router, Switches, Firewall)	-	-	-	-	-	-	-	-	-	-	<b>\$1000</b>
3.1 Windows 11 Enterprise OS Licenses	-	-	-	-	-	-	-	-	-	-	<b>\$200</b>
3.2 Database Software Licenses (MS SQL Server Standard Edition)	-	-	-	-	-	-	-	-	-	-	<b>\$1400</b>
3.3 Security Softwares	-	-	-	-	-	-	-	-	-	-	<b>\$900</b>
3.4 App Development Tools (Figma)	-	-	-	-	-	-	-	-	-	-	<b>\$750</b>
4.1 External Usability Testing provider	-	\$1800	\$1800	\$1800	\$1800	-	-	-	-	-	<b>\$7200</b>
4.2 Automated testing tool	-	200	200	200	200	200	200	200	-	-	<b>\$1200</b>
5.1 Staff onboarding for managing databases, bookings, and loyalty points systems	-	-	-	-	-	-	-	-	-	\$370	<b>\$370</b>

5.2 App support training platform	\$49	\$49	\$49	\$49	\$49	\$49	\$49	\$49	\$49	\$49	\$49	<b>\$882</b>
6. Reserves (15%)	\$1,541.22	\$1,541.22	\$1,541.22	\$1,541.22	\$1,541.22	\$1,541.22	\$1,541.22	\$1,541.22	\$1,541.22	\$1,541.22	\$1,541.22	<b>\$27,742.8</b>
<b>Total</b>	<b>\$10,495.77</b>	<b>\$12,495.77</b>	<b>\$12,495.77</b>	<b>\$14,895.77</b>	<b>\$12,645.77</b>	<b>\$10,845.77</b>	<b>\$10,845.77</b>	<b>\$10,845.77</b>	<b>\$14,645.77</b>	<b>\$12,615.77</b>	<b>\$212,694.80</b>	

## Deliverable 9 - Risk Management plan

### Task 3.6 - Risk Register Requirements

**PROJECT RISK REGISTER**

RISK ID	RANK	RISK DESCRIPTION	IMPACT DESCRIPTION	IMPACT LEVEL	PROBABILITY LEVEL	PRIORITY LEVEL	RISK RESPONSE	OWNER
A unique identifier	Based on Priority Level	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?
R01	5	<i>Third party software is unreliable</i>	<i>Failures during system testing</i>	4	2	<b>8</b>	Avoidance - look for another supplier	Project Manager
R02	6	Bugs and connectivity	The app slower the development,	3	2	<b>6</b>	Mitigate - conduct thorough testing to	QA Tester

		<i>issues in the app during testing</i>	<i>causing potential delays in the app launch</i>				<i>catch the issues early</i>	
R03	5	Device compatibility (Android/iOS) issues	App may behave differently and many features may not work across all devices	4	2	<b>8</b>	Mitigate - Conduct testing using diverse test devices (old as well as new models)	QA Tester
R04	1	App is rejected from App store or Google Play store	LifeLoop's customers won't be able to download and use the app, defeating the purpose of building the app	5	3	<b>15</b>	Mitigate - Follow Apple and Google's guidelines when developing the app to ensure compliance	QA Tester
R05	7	Data privacy or accessibility regulations change mid project	Non compliance may block deployment on the app store.	4	1	<b>4</b>	Mitigate - Monitor legal updates, engage IT compliance experts	Compliance officer

R06	3	Budget issues due to underestimation of cost	Costs may exceed the approved budget, causing delay and disagreements	5	2	<b>10</b>	Avoid- track the expenses carefully during the project development	Project Manager
R07	4	Marketing strategies ineffective	Poor marketing may result in poor visibility and popularity of the app	3	3	<b>9</b>	Mitigate- Conduct market research, user needs and showcase unique features	Marketing Specialist
R08	2	AI not responding as expected	AI may produce inaccurate or biased results, and reduces users' trust in the app	4	3	<b>12</b>	Mitigate - Perform regular testing and validation checks	AI Engineer
R09	1	Conflict between team members	Miscommunication and loss of critical skills may cause schedule delays	5	3	<b>15</b>	Mitigate- Conduct team building sessions and activities before the start of the project.	Project Manager

### Risk Probability And Impact Matrix:

P R O B A B I L I T Y	5	5	5	5	5	5
	4	4	4	4	4	4
	3	3	3	RO7	RO8	RO4, RO9
	2	2	2	RO2	RO1, RO3	RO6
	1	1	1	1	1	RO5
		1	2	3	4	5
	IMPACT					

## **Risk Priority Ranking and Response Plan**

Risks in this project have been prioritized using factors such as risk attitude, risk sensitivity, resource availability, cost, risk severity, and risk manageability (Chatterton, n.d.).

### **High-Priority Risks (Scores 12–15)**

#### **R04 - Application rejected by Apple App Store or Google Play Store (15):**

This risk is classified as the highest level because its potential impact is catastrophic. If the application is rejected by Apple or Google, users will be unable to download or use the product, leading to the failure of the entire project. Although the probability of occurrence is moderate, the consequences are unacceptable, so this is the primary concern.

#### **R09 - Conflicts among team members (15):**

Internal team conflicts are a potential but serious threat. Inadequate communication or unresolved disputes may lead to delays in the delivery of results and a decline in morale. Given the collaborative nature of software development, this risk is equally important as the risk of the application being rejected.

#### **R08 - Artificial Intelligence Not Operating as Expected (12):**

As this application heavily relies on artificial intelligence functions, any inaccuracies or deviations in the results could undermine user trust and damage the product's reputation. Given that trust is a key factor for users to adopt, this risk is considered very high. The likelihood of the problem occurring is moderate, but its relevance to customer retention makes it an important concern.

### **Medium-Priority Risks (Scores 8–10)**

#### **R06 - Budget issues caused by underestimation (10):**

Exceeding the budget limit may lead to dissatisfaction from stakeholders and result in project delays. However, through strict cost monitoring, this risk can be effectively controlled.

#### **R07 - Ineffective Marketing Strategies (9):**

Although marketing challenges will not prevent the release of the application, they will directly affect the product's exposure and user acceptance. A well-crafted product that does not have effective marketing strategies may not be able to attract users, so this risk is placed above purely technical flaws.

#### **R01 - Unreliability of third-party software & R03 - Equipment compatibility issues (both 8 points):**

Both of these risks can lead to project delays, but they can be controlled through quality assurance, comprehensive testing, and diversification of suppliers. They are destructive but controllable, and therefore fall into the medium-priority category.

### **Low-Priority Risks (Scores 4–6)**

#### **R02 - Coding Errors and Connectivity Issues (6):**

These risks are quite common in software development and can be mitigated through existing quality assurance processes. Although they may cause delays, if properly managed, they are expected not to affect the project schedule.

#### **R05 - Changes in Data Privacy or Access Rights Regulations (4):**

The probability of this risk occurring is relatively low, but it still needs to be monitored as it may hinder deployment. Legal supervision and compliance updates make it a controllable issue.

### **Response Planning**

#### **R01 - Unreliability of third-party software:**

Response: Avoid by diversifying suppliers and negotiating service-level agreements and ensuring fallback vendor options are available. These steps will reduce dependency on any single provider and safeguard system reliability.

Owner: Project Manager

#### **R02 - Coding Errors and Connectivity Issues:**

Response: Ensure developers document code throughout the development process so any bugs can easily be identified and corrected in a timely manner. As for connectivity issues, we would have fallback options, such that if our servers go down there is a backup. Should there be more coding errors to rectify, we would contract additional contractors at a rate of \$705 per additional day.

Owner: QA Tester

#### **R03 - Equipment compatibility issues:**

Response: Maintaining a diverse testing environment that covers both legacy and new devices, supported by the use of cloud based farms. This approach ensures broader compatibility and a smoother user experience.

Owner: QA tester

#### **R04 - Application rejected by Apple App Store or Google Play Store:**

Response: Review the feedback provided to understand the issues with the application. Then mitigate by correcting the issues in the well documented code.

Owner: QA tester

#### **R05 - Changes in Data Privacy or Access Rights Regulations:**

Response: By following the guidelines of Apple and Google, conduct compliance checks and participate in the review process as early as possible.

Owner: Project Manager

#### **R06 - Budget issues caused by underestimation:**

Response: The project manager will carefully review and track the budget throughout the project development and make changes as needed, keeping in mind the 15% reserve that can be used as a backup should the costs be greater than anticipated.

Owner: Project Manager

**R07 - Ineffective Marketing Strategies:**

Response: The marketing specialist will conduct market research, understand user needs and showcase unique features to ensure customers are aware of these new features and how it can improve their experience with LifeLoop.

Owner: Marketing Specialist

**R08 - Artificial Intelligence Not Operating as Expected:**

Response: The AI engineer will perform regular testing and validation tests to ensure the AI feature operates to a satisfactory level. Should it continue not to operate as expected, a less intelligent model can be used where the information generated in response to customer queries will be pre-determined answers.

Owner: AI engineer

**R09 - Conflicts among team members:**

Response: To reduce the likelihood of conflict, the team will hold regular retrospectives, encourage opening and effective communication, increased trust, understanding of each other's roles and responsibilities and team building activities that strengthen personal and working relationships (Villax & Anantatmula, 2010). If disputes escalate, mediation will be handled promptly by the project manager to project productivity.

Owner: Project manager

**Time and cost analysis report for management**

To demonstrate the significance of proactive risk management, the three highest-priority risks (R04, R08, R09) were evaluated in terms of potential time delays and financial impacts. This analysis took into account both direct costs and indirect costs.

**R04 - Application rejected by Apple App Store or Google Play Store:****Time impact:**

If the app has been rejected by Apple App Store or Google Play Store, the development team would need to rework compliance related issues, resubmit the application, and wait through another review circle. This resubmission process could delay the official launch by approximately four to six weeks. Such a delay would disrupt carefully scheduled marketing campaigns and slow down customers on boarding and users' feedback collection. Both are critical to improve the app during its early lifecycle.

**Cost impact:**

The additional development work required to meet compliance requirements may cost between \$20,000 and \$30,000. The project will also face the risk of losing revenue opportunities, as each week of delay in going to market will postpone the market entry time and reduce the available time to attract early adopters. Moreover, a failed first submission may reduce the confidence of stakeholders in the project team, thereby causing reputational pressure. Overall, this risk may result in a total financial burden of \$40,000 to \$60,000 and the consequences of delayed market entry.

## **R08 - Artificial Intelligence Not Operating as Expected:**

### **Time impact:**

The artificial intelligence function is the core differentiating factor of this application, which means that any malfunction of this component would cause significant damage. If the results generated by the artificial intelligence are inaccurate, biased, or unreliable, additional testing and re-training cycles will be required, each of which will extend the development time by approximately two to three weeks. These delays not only slow down the integration process of artificial intelligence with other application functions, but also create dependencies, thereby interfering with the broader system development work.

### **Cost impact:**

Direct costs include implementing the artificial intelligence verification framework, purchasing additional testing tools, and hiring external experts to address issues of accuracy or bias. These costs are estimated to be between \$15,000 and \$25,000. In addition, a large amount of indirect costs related to user trust cannot be ignored. When artificial intelligence malfunctions, it reduces credibility, leading to higher customer support costs, increased marketing expenditures for rebuilding reputation, and if user trust cannot be restored, it may even result in user churn. This risk is expected to cause a financial loss of \$25,000 to \$40,000, and it will also cause issues of project delays.

## **R09 - Conflicts among team members:**

### **Time impact:**

Although this is not a technical risk, conflicts within the project team still have the potential to cause significant disruptions. Poor communication, disagreement in opinions, or insufficient team cohesion can all lead to project delays, resulting in productivity losses equivalent to one sprint cycle. In more severe cases, if the conflict leads to employee resignation, the onboarding of new employees may extend the project cycle by four to six weeks, thereby having a cascading impact on multiple interrelated tasks.

### **Cost impact:**

The costs for mediation, conflict resolution seminars, and team-building activities are estimated to be between \$10,000 and \$15,000. Additionally, the indirect impact could be even greater, as replacing an experienced engineer or project leader due to staff turnover might require a payment of 20% to 30% of their annual salary. The ongoing tension can also lower morale, reduce enthusiasm, and damage productivity, thereby affecting the quality of project outcomes. Overall, this risk could lead to financial losses ranging from \$15,000 to \$50,000 and project delays of two to eight weeks, with the specific duration depending on the severity.

## **Deliverable 10 - Group Reflection**

Throughout this project our team worked well together in accordance with the goals and commitments outlined in our working agreement. We found our main team objective of academic success, driving us to work hard both individually and collectively.

A recurring issue we faced was our clashing schedules, we were often only able to meet as a full team once a week. This wasn't detrimental to our project as we employed strong communication to stay on top of due dates and work loads. When a specific team member was unable to work with the rest of the group, they took accountability by completing their share of the work another time. In one case, this led to us being less prepared than we would have liked to be for our presentation, however we learnt from this and organised ourselves more effectively for the later parts of the project.

An area where we excelled was work allocation, we wanted allocation to be flexible and comfortable but also fair. This approach allowed for team members to show their strength in their work. An example of this is during the WBS and gantt chart section of the assignment, Chengwei and Jack had a much easier time working together completing the wordier aspects of the slides, while Nidhin and Joseph found great success collaborating on the WBS and gantt chart.

There were times during the project when team members had differing opinions on how to complete a specific task. We had no issues resolving said issues and found that these conversations actually led to an improved quality in our work. An example of this was during the cost breakdown, a group member seemed unsure if we were formatting our work correctly, this led to an open conversation, giving us a deeper understanding of the task. We all feel we displayed openness and appreciation for feedback, always taking time to listen to what someone else was saying.

The structure of our group was flexible, this allowed for different team members to take initiative when they felt comfortable. This approach allowed for everyone to guide different parts of the project, while also not taking on too large a workload.

Ultimately our collaborative success was guided by core values as part of the team agreement. While we could have managed our time more efficiently, our strong communication and team structure allowed us to achieve our goals. For us this project reiterated the importance of open communication, flexibility and teamwork skills which we will apply in the future projects.

## **Deliverable 11 - Individual Reflection**

### **Nidhin 34778675**

We had 5 weeks to work on this group project for LifeLoop to plan, design and develop an IT-driven project. Initially we had different opinions on selecting a project idea suitable for our team. This left me feeling a bit confused and anxious, as selecting the best suitable project idea is important since it would shape all our deliverables over the course of this project. Then we decided to list down the positives and negatives of each given project idea and pick the most appropriate one, enabling us to brainstorm many ideas for our project effectively and present a work of high quality.

In general, this project gave me a practical opportunity to apply my project management skills and understandings that I have gained from this unit such as risk management, cost estimation, WBS etc.... During this assignment, I actively took responsibility for coordinating the group, setting up Zoom meetings and ensuring everyone completes the assigned tasks before the planned deadline. We had lost a considerable amount of time while working this project due to misaligned assumptions which caused inaccuracies and inconsistencies in the deliverables. Personally, this experience taught me that active participation early in the process avoids rework and delays later.

In the future, I will continue to take responsibility for organising meetings but also try to encourage early active participation and clearer task distribution. I would give myself an HD as I believe I have strongly contributed in many parts of the project. For my team I would give an HD as well, as we demonstrated strong collaboration and understanding of the project requirements.

### **Chengwei Zu 35002875**

For our group assignment, we had chosen LoopCare Digital Health Companion as the subject for our project. While working in a group, my task was to ensure the project schedule and task allocation were clear and reasonable enough to help the team break down complex tasks into simpler tasks. While progressing on my tasks, I had many consultations with my peers, not only perfecting my skill in project management tools but also enriching my own insight into the entire procedure.

During the course of the project, the initial difficult problem encountered was inconsistent schedules of teammates. We could not easily assemble on a regular basis for a series of group meetings, and therefore we lacked proper preparations in the early stages for some of the tasks, such as appropriate setting up of presentation materials. It made me learn the importance of early preparation and coordination of communication, though. We then made up for such a shortcoming by precisely defining tasks and flexibly adapting schedules later on, and it also taught me to maintain the smooth functioning of the team in situations of limited resources.

Through this assignment, I learned that in a cooperative working environment, not only do we need to fulfill our own responsibilities, but we also need to actively help one another and remain open-minded in taking in and providing input. I myself was actively involved in this

project and will evaluate myself from D. For the team, I will also give it HD, for we demonstrated high responsibility, complementarity in skill division, and innovative enhancement in working methods.

### **Joseph Smith 33840334**

During the completion of the assignment in which we were to plan a project, in our case, LoopCare, we frequently had open discussions to figure out the best way of proceeding with the project. We used various techniques during these open discussions ensuring we were open to all perspectives and used ways of forming the best conclusion. I felt that I contributed to an extent to these discussions, however, upon reflection I felt that I could have thought about the various topics in more depth so that I could contribute in a more meaningful way.

For example, Nidhin and I worked on the WBS and the gantt chart. I was the one using the software to create the gantt chart, as I had previous experience with creating these charts, whilst Nidhin helped structure all the tasks and their durations. I felt that I should have thought more critically about the implications of our timeline especially in terms of the critical path as that is something I didn't think carefully enough about. Furthermore, when completing other parts of the assignment, I felt I should have contributed more and taken a more proactive approach.

For future assignments, I need to be more proactive in completing my fair share of the assignment while also communicating more effectively to better understand the complexity of the assignment inline with the rest of the group. I would give myself a C, as I wasn't proactive enough and didn't complete my parts of the assignment in a timely manner. I would give the group an HD, as communication was strong despite schedules getting in the way of meeting as a group.

### **Jack Rudd 35084243**

Our group chose LoopCare for our project, over the course of the assignment I learnt a lot about not only project management but also collaboration and communication. From the beginning we wanted everyone to share their thoughts and work collaboratively, I feel we carried this approach through our project well. Whether we were deciding on the specific direction our app would take or how we divided the work and managed issues we always included everybody.

I regret I wasn't able to attend class as much or for as long as I would have liked, my team were understanding of my situation which I really appreciated. Despite this I feel I contributed my share of the work towards our project, and made sure to never compromise on quality. I enjoyed learning practical aspects of project management, however I now recognise the importance of the more team oriented and organisational skills. Work allocation, scheduling, and simply working as a team, over this project I have honed these less practical skills and feel much more competent to face similar projects in the future.

Something I'm proud of about how we completed this project was our flexibility, whether in finding time to meet or how we completed our work, it made it a lot easier for me to feel a part of the team and contribute accordingly.

Despite challenges along the way I'm very happy with how we performed as a team and the work we produced. In the future I aim to be more organised, manage my time and schedule. I feel a D represents my work however as a team an HD better represents our project.

## References

Chatterton, C. (n.d.). *The Ultimate Guide to Risk Prioritization*. Hyperproof.

<https://hyperproof.io/resource/the-ultimate-guide-to-risk-prioritization/>

England, K., & Moreci, J. (2012, October 23). *Contingency--are you covered?*. Project Management Institute.

<https://www.pmi.org/learning/library/contingency-are-covered-6099>

Hays. (2024, October 22). *IT Contractor Rates Guide FY24/25*.

[https://d25zr1xy094zys.cloudfront.net/68/e0/68e043a51f144053b8d1b73...589YUQO\\_O6ZB](https://d25zr1xy094zys.cloudfront.net/68/e0/68e043a51f144053b8d1b73...589YUQO_O6ZB)

Villax, C., & Anantatmula, V. S. (2010, July 14). *Understanding and managing conflict in a project environment*. Project Management Institute.

<https://www.pmi.org/learning/library/understanding-managing-conflict-resolution-strategies-6484>

World Wide Web Consortium. (2024, December 12). *Web Content Accessibility Guidelines (WCAG) 2.2*. <https://www.w3.org/WAI/standards-guidelines/wcag/>