

# **FIT2002 IT Project Management**

## **Assignment One**

**Team 0602**  
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# Table of Contents

<b>Team Working Agreement</b>	<b>2</b>
<b>Project Charter – LoopTasks</b>	<b>4</b>
<b>LoopTasks – 2-Minute Pitch</b>	<b>6</b>
Requirements Traceability Matrix (RTM)	7
<b>Project Scope</b>	<b>9</b>
1.1 Project Scope Statement	9
1.2 Deliverables & Acceptance Criteria	9
Deliverable 2: Cross-Device Synchronisation & Integrations	9
Deliverable 3: Voice-enabled Task Capture	10
Deliverable 4: AI-Powered Scheduling Engine	10
Deliverable 6: Mobile App (iOS & Android MVP)	10
Deliverable 7: Web Dashboard (Lightweight Access & Export)	10
1.3 Exclusions	11
1.4 Constraints & Assumptions	11
<b>Work Breakdown Structure (WBS)</b>	<b>11</b>
<b>Gantt chart</b>	<b>13</b>
Gantt Chart Justification	15
<b>Cost Model</b>	<b>16</b>
<b>Cost Estimation Methodology &amp; Justification</b>	<b>17</b>
<b>Cost Baseline</b>	<b>19</b>
<b>Risk Register Requirements</b>	<b>20</b>
Risk Matrix	21
Justifications for Risks (R01–R13)	22
Cost/Time Implications	24
<b>Group Reflection</b>	<b>25</b>
<b>Individual Reflection</b>	<b>26</b>
Ralph Thang's Reflection	26
Jireh Loh's Reflection	26
Joshua Sentana's Reflection	27
Fares Elkordy's Reflection	27
<b>References</b>	<b>29</b>

# Team Working Agreement

<b>Team number</b>	0602
<b>Team members</b>	Fares Elkordy, Jireh Loh, Joshua Sentana, Ralph Hm Thang
<b>Team objectives</b>	To achieve our best and put in the best effort. Collaboration requires good communication among the team to ensure our projects succeed.
<b>Team characteristics</b>	<p>Strengths</p> <ul style="list-style-type: none"> <li>- Thorough</li> <li>- Collaborative</li> <li>- Dedicated</li> <li>- Hard working</li> <li>- Communicative</li> <li>- Open to criticism</li> <li>- Problem solvers</li> <li>- Teamwork</li> <li>- Time management</li> </ul> <p>Weakness</p> <ul style="list-style-type: none"> <li>- Communicative (Works both ways)</li> <li>- Procrastination</li> <li>- Lack of time (busy schedule)</li> </ul>
<b>Core values</b>	<ul style="list-style-type: none"> <li>- Effort and communication</li> <li>- Don't be afraid to ask for help</li> <li>- Punctuality</li> <li>- Respect</li> </ul>
<b>Group norms and code of conduct</b>	<ul style="list-style-type: none"> <li>- We will work together by doing the following: <ul style="list-style-type: none"> <li>- Actively communicating</li> <li>- Listening to each other</li> <li>- Respecting each other</li> <li>- Giving constructive feedback to each other</li> </ul> </li> <li>- Our expectations from each other are: <ul style="list-style-type: none"> <li>- Honest communication between team members</li> <li>- Put in the best effort</li> <li>- Respecting each other</li> <li>- Meeting the deadlines</li> <li>- Attending all meetings (unless there are exceptional circumstances)</li> </ul> </li> <li>- For our framework: <ul style="list-style-type: none"> <li>- Weekly meeting to ensure tasks are on track.</li> <li>- Recap on what the team has done or is in progress.</li> <li>- Ask questions to make sure that we are understanding.</li> </ul> </li> </ul>
<b>Participation and collaboration approach</b>	<ul style="list-style-type: none"> <li>- We will schedule a weekly online meeting for our members to discuss the project.</li> <li>- To share files, we will use Google Drive. For sharing and managing tasks, we will use Trello.</li> <li>- To work collaboratively we will be using Google Docs so all team members can contribute at the same time.</li> <li>- Once we are assigned our tasks, we will check each other's work every week to see if progress is smooth.</li> </ul>

<b>Communications</b>	<ul style="list-style-type: none"> <li>- Online (through discord) for weekly meetings.</li> <li>- During applied class we can share our thoughts and insights on the project.</li> <li>- Using the discord chat to communicate outside of the scheduled hours.</li> <li>- Honest and open communication between team members</li> </ul>
<b>Problem solving</b>	<ul style="list-style-type: none"> <li>- Communication in a timely manner</li> <li>- Sit as a team to reschedule or re-plan the steps needed to be taken.</li> <li>- Redistribute the workloads based on the new plan.</li> <li>- Make sure that all team members are in agreement.</li> </ul>
<b>Conflict management</b>	<ul style="list-style-type: none"> <li>- Give a chance for every team member to present their idea fully.</li> <li>- Collaboratively using the voting method, each member gets to vote on the idea they want.</li> <li>- If the decision is not determined by the initial vote, all team members come together and find a common ground for the benefit of the project.</li> <li>- No slandering</li> <li>- Constructive feedback on how to improve an idea or suggestion.</li> <li>- If the team is not able to reach a conclusion or solution, the team can speak to the project manager.</li> </ul>
<b>Signatures</b>	<p>[All team members listed on top of the Working Agreement should sign the document to confirm their agreement with the contents and that they are going to follow this agreement during their collaboration with the team. You can type your name as your signature, but should add a note to clarify that.]</p> <ul style="list-style-type: none"> <li>- Fares Elkordy</li> <li>- Ralph Thang</li> <li>- Jireh Loh</li> <li>- Joshua Sentana</li> </ul>

# Project Charter – LoopTasks

**Project Title:** LoopTasks – Smart Daily Routine Organiser

**Project Manager:** Fares Elkordy - contacted via felk0002@student.monash.edu

## Description

LoopTasks is a cross-platform assistant that streamlines daily routines for families and individuals. Some features of the app are shared family calendars, habit tracking, an AI-powered scheduling engine that adapts to user behavior, and voice-enabled task capture. The project aims to reduce missed tasks, improve coordination, and foster healthier habits by providing simple and accessible digital tools.

## Project Scope And Objectives

### In Scope:

- Develop a mobile application for both IOS and Android with a shared calendar, voice capture, and habit tracking using AI.
- Develop a web dashboard for lightweight access and data export.
- Design a scheduler that's AI-driven, to adapt to the user habits so it can recommend the best routines.
- Cross-device synchronisation and integrations with Google, Apple, and Microsoft calendars.
- Offer customizable reminders and alerts tailored to user preferences.

### Out of Scope:

- Any monetisation or payment-related functionality.
- Advanced enterprise-level controls
- Multi-language capabilities beyond English in the MVP (Minimum Viable Product) release.
- Incorporation of external third-party advertising

### SMART Objectives:

- Deliver an MVP app within 9 months to validate LifeLoop's investment..
- Achieve 70% task completion rate to demonstrate measurable behavioural impact, aligned with LifeLoop's goal of improving daily coordination..
- Ensure all core user flows comply with WCAG 2.1 AA accessibility standards before launch.
- Deliver within the allocated budget cap of \$300,000 while meeting milestones.

## Project Start and Finish Dates

- Planned Start: 01 September 2025
- Planned Finish: 01 March 2027 (18 months development + testing)
- Maintenance Window: Up to 18 months post-launch (outside core scope, subject to agreement).

## **High-Level Budget Estimate**

- Total Estimated Cost: \$300,000 (capped, not flexible).
- Includes labor, software licenses, infrastructure, overheads, and a 15–20% contingency.

## **Project Development Approach**

A hybrid approach will be used:

- Predictive (Waterfall) for planning, governance, and scope definition.
- Adaptive (Agile) sprints (2–3 weeks) for design, development, and testing.

This balance provides predictability for cost and timeline control while ensuring flexibility for iterative usability improvements, consistent with PMBOK.

## **Key Stakeholders**

Stakeholder	Role	Interest/Influence
LifeLoop CEO	Project Sponsor	Strategic alignment and funding approval
Product Lead	Product Owner	Defines priorities and business outcomes
Accessibility Lead	UX/Accessibility Advisor	Ensures inclusive and user-friendly design
Development Team	Technical Delivery	Builds, tests, and integrates the solution
Pilot Families	End Users	Validate usability, adoption, and effectiveness

## **Project Success Criteria**

- On-time delivery: MVP (Minimum Viable Product) features completed by month 9; production release by month 18.
- On-budget delivery: Project kept within \$300,000 allocation.
- Quality and usability: ≥80 SUS (System Usability Scale) score at pilot testing.
- Performance: P95 load time <200 ms for core views.
- Adoption: ≥70% task completion rate among pilot users.

These criteria align with LifeLoop's mission to deliver usable, inclusive, and efficient tools.

### **Assumptions:**

- Calendar APIs (Google, Apple, Microsoft) remain stable.
- LifeLoop provides timely feedback during sprint reviews.
- Cloud services and licences are procured without delay.
- The development team is available at planned capacity.

### **Exclusions:**

- Monetisation features (ads, subscriptions, or in-app purchases).
- Support for languages other than English in MVP (Minimum Viable Product).
- Complex enterprise integrations (e.g., SSO, corporate MDM).
- Post-launch marketing activities (handled separately by LifeLoop).

# **LoopTasks – 2-Minute Pitch**

## **Hook (10s)**

“Ever forgotten your child’s soccer game or missed a bill because the day was too hectic? We all know the stress of juggling work, family, and routines — and too often, things slip through the cracks.”

## **Problem (20s)**

“Families juggle multiple schedules and habits daily. Current apps are rigid, designed for tasks on paper, not real life. The result? Missed commitments and unnecessary stress.”

## **Solution (30s)**

“LoopTasks is a smart daily organiser powered by AI and voice. It captures tasks in seconds, automatically adapts schedules, and provides families with a shared calendar and habit tracker. It learns how you live, so the app works for you — not the other way around.”

## **Strategic Fit (20s)**

“This project aligns with LifeLoop’s mission: simple, inclusive, personalised tools. By leveraging LifeLoop’s strengths in usability and full-stack development, LoopTasks delivers real value to families.”

## **Features / Deliverables (20s)**

“LoopTasks will launch with four core deliverables: voice reminders, shared family calendar, habit tracking, and adaptive AI scheduling. Plus seamless cross-device sync. All achievable within 18 months and a \$300k budget.”

## **Why Us (20s)**

“LoopTasks saves time, reduces stress, and keeps families in sync. Backed by a realistic plan, milestones, and accessibility standards, our project is ambitious yet achievable — the strongest fit for LifeLoop.”

## **Closing Call-to-Action (10s)**

“Don’t lose track, don’t fall back — choose LoopTasks to keep your day on track.”

## Requirements Traceability Matrix (RTM)

<b>Project Name:</b>	LoopTasks – Smart Daily Routine Organiser				
<b>Project Manager Name:</b>	Fares Elkordy				
<b>Project Description:</b>	LoopTasks is an assistant that streamlines daily routines for families and individuals. Core features include shared family calendars, habit tracking, AI-powered scheduling, voice-enabled task capture, and cross-device synchronisation.				
<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	Users can set and customise reminders and alerts for tasks and habits across devices to support personal routine management.	Mobile OS / Desktop allows notifications.	Functional	Client	Draft
R2	Provide a shared family calendar accessible via iOS, Android, and Web platforms, ensuring seamless scheduling for households.	Calendar APIs (google, apple, microsoft) accessible	Functional	Client	Draft
R3	Enable voice-enabled task capture for fast input of tasks and events, reducing reliance on manual entry.	Mobile devices having working microphone access	Functional	Client	Draft
R4	Deliver habit tracking with AI-driven recommendations that adapt to user behaviour and encourage healthier routines.	AI engine adapts to user data	Functional	Product owner	Draft
R5	Support cross-device synchronisation of all calendar and task data to maintain consistency across platforms.	Stable internet connection	Functional	Client	Draft

R6	Ensure accessibility compliance with WCAG 2.1 AA for all core user flows to meet inclusivity standards.	Accessibility lead reviews designs	Non-Functional	Client	Open
R7	Deliver a Minimum Viable Product (MVP) within 9 months to validate feasibility and client expectations.	LoopTasks MVP needs to be delivered within the set duration.	Non-Functional	Project sponsor	Open
R8	Maintain system performance at p95 load time <200ms for all core views under normal operating conditions.	Cloud services provisioned	Non-Functional	Development team	Open
R9	Ensure at least 70% task completion rate for active users within a year	Pilot families engaged and report back	Non-Functional	Client	Planned
R10	Guarantee application startup and core screen load times under 3 seconds to meet usability expectations.	Applications startup and core screens load in under 3 seconds	Non-Functional	Tutor	Open
Status Definitions <ul style="list-style-type: none"> <li>• Draft – Requirement has been identified and documented but not yet validated by stakeholders.</li> <li>• Open – Requirement has been validated and approved but is not yet implemented.</li> <li>• Planned – Requirement is validated, approved, and scheduled for delivery within the project timeline.</li> </ul>					

Acceptance criteria for each requirement are detailed in Task 3.3.2 – Scope Statement to ensure full traceability

# Project Scope

## 1.1 Project Scope Statement

LoopTasks is a cross-platform smart daily routine organiser designed for families and individuals to better manage their day-to-day activities. The project aims to reduce missed commitments, improve coordination, and promote healthier routines by offering adaptive scheduling powered by AI, voice-enabled task capture, shared family calendars, and habit tracking.

The purpose of this project is to deliver an accessible, easy-to-use mobile and web application that integrates seamlessly with existing digital calendars (Google, Apple, Microsoft). The project will be delivered within 18 months, using a hybrid development approach combining Waterfall (for planning and governance) and Agile sprints (for iterative design and testing).

**Major deliverables include:**

- An iOS and Android mobile app with AI-powered scheduling.
- Shared family calendar and habit tracker.
- Voice-enabled reminders and task capture.
- Web dashboard for lightweight access and data export.
- Cross-device synchronization and customizable reminders.

This scope is directly aligned with LifeLoop's mission of providing simple, personalised, and inclusive digital tools for everyday life. Each deliverable reflects these values, ensuring strategic fit and measurable impact for the client.

## 1.2 Deliverables & Acceptance Criteria

### Deliverable 1: Shared Family Calendar

- Functional Requirements: Shared calendar across iOS, Android, and web (R2); cross-device synchronisation of data (R5).
- Non-Functional Requirements: Accessibility compliance with WCAG 2.1 AA (R6); application startup and calendar load in <3 seconds (R10).
- Quality Standards & Metrics: P95 load time <200ms for calendar views;  $\geq 80$  SUS usability score during pilot testing.
- Justification: These metrics align with industry standards—fast load times support usability, and SUS  $\geq 80$  is an accepted benchmark for consumer apps.
- Expected Completion: March 2026. (Abrahamsson et al., 2004)

### Deliverable 2: Cross-Device Synchronisation & Integrations

- FR: Sync across iOS, Android, and Web (R5); integrate Google, Apple, and Microsoft calendars (R3).
- NFR: Conflict resolution via “last write wins” logic; sync success rate  $\geq 99\%$  in testing.
- Quality Standards & Metrics: QA testing confirms  $\geq 99\%$  success rate; sync latency <30s in  $\geq 95\%$  of cases.
- Expected Completion: June 2026. (Holvitie et al., 2018)

### **Deliverable 3: Voice-enabled Task Capture**

- FR: Voice input for creating/editing tasks (R3); reminders and alerts for tasks and habits (R1).
- NFR:  $\geq 90\%$  voice transcription accuracy validated during testing; response to voice commands <2 seconds.
- Quality Standards & Metrics: Accuracy benchmarked against pilot family feedback; P95 response time <200ms (R8).
- Expected Completion: January 2026. (Klünder et al., 2021)

### **Deliverable 4: AI-Powered Scheduling Engine**

- FR: Suggest optimal task times based on behaviour (R5); allow users to override with logs of changes.
- NFR: Recommendations generated for  $\geq 80\%$  of schedulable tasks; transparent rationale displayed for AI suggestions.
- Quality Standards & Metrics:  $\geq 80\%$  recommendation coverage;  $\geq 75\%$  user satisfaction with AI suggestions.
- Expected Completion: April 2026. (Maharao, 2022)

### **Deliverable 5: Habit Tracker**

- FR: Create, edit, and track habits with reminders (R1); AI adapts to user data for suggestions (R4).
- NFR: Ensure  $\geq 70\%$  task completion rate among active users (R9); WCAG 2.1 AA accessibility compliance (R6).
- Quality Standards & Metrics: SUS usability benchmark  $\geq 80$  for habit features.
- Justification: Accessibility is critical to LifeLoop's inclusivity goals and aligns with global universal design standards.
- Expected Completion: July 2026.

### **Deliverable 6: Mobile App (iOS & Android MVP)**

- FR: Add/edit tasks via voice or text (R4); shared family calendar with up to 6 members (R3).
- NFR: Startup and core screens load in <3 seconds (R2); SUS  $\geq 80$  usability score (R10).
- Quality Standards & Metrics: P95 response time <200ms (R9); SUS  $\geq 80$  confirmed via survey.
- Justification: P95 <200ms response time aligns with mobile UX benchmarks, supporting adoption and user satisfaction.
- Expected Completion: August 2026.

### **Deliverable 7: Web Dashboard (Lightweight Access & Export)**

- FR: View and manage shared calendar and tasks in browser (R3); export data in CSV/ICS format.
- NFR: Compatible with modern browsers; uptime  $\geq 99.5\%$  during testing.
- Quality Standards & Metrics: Compatibility tested on Chrome, Safari, Edge, and Firefox;  $\geq 99.5\%$  availability confirmed.
- Expected Completion: August 2026.

## 1.3 Exclusions

- Monetisation features (ads, subscriptions, in-app purchases).
- Support for languages other than English in the MVP.
- Marketing and promotion activities post-launch.

## 1.4 Constraints & Assumptions

Constraints:

- Fixed budget of \$300,000.
- 18-month development and testing timeframe.
- Limited to English-language support in MVP.
- Platform compatibility is limited to iOS, Android, and modern web browsers.

Assumptions:

- Development team available at full capacity during the project timeline.
- Calendar APIs (Google, Apple, Microsoft) remain accessible and stable.
- Cloud infrastructure and licenses secured without delays.
- Timely feedback provided by LifeLoop stakeholders during sprint reviews.

# Work Breakdown Structure (WBS)

## 0.0 LoopTasks – Smart Daily Routine Organiser

### 1.0 Initiation

- 1.1 Develop project charter
- 1.2 Identify stakeholders and roles
- 1.3 Obtained charter approval (Milestone M1)**

### 2.0 Planning

- 2.1 Develop requirements traceability matrix
- 2.2 Develop scope statement
- 2.3 Develop work breakdown structure and schedule
- 2.4 Develop risk management plan and cost baseline
- 2.5 Finalised planning package and approval (Milestone M2)**

### 3.0 Execution

- 3.1 Deliver shared family calendar
  - 3.1.1 Design calendar user interface
  - 3.1.2 Develop family group creation and invites
  - 3.1.3 Implement event add/edit/delete functionality
  - 3.1.4 Integrate calendar synchronisation logic
  - 3.1.5 Test calendar usability and performance
- 3.2 Deliver cross-device synchronisation and integrations
  - 3.2.1 Develop cross-platform synchronisation module
  - 3.2.2 Integrate Google, Apple, and Microsoft APIs
  - 3.2.3 Configure conflict resolution rules
  - 3.2.4 Test synchronisation latency and reliability
- 3.3 Deliver voice-enabled task capture
  - 3.3.1 Integrate speech-to-text APIs
  - 3.3.1.1 Integrate Android speech API

- 3.3.1.2 Integrate iOS speech framework
- 3.3.2 Develop voice-based task creation and editing
- 3.3.3 Configure task notifications and reminders
  - 3.3.3.1 Configure Firebase push notifications
  - 3.3.3.2 Configure local notification scheduling
  - 3.3.4 Test transcription accuracy and response time
- 3.4 Deliver AI-powered scheduling engine
  - 3.4.1 Design scheduling rules engine
  - 3.4.2 Develop AI recommendation model
  - 3.4.3 Implement override and feedback logging
  - 3.4.4 Test scheduling accuracy and satisfaction
- 3.5 Deliver habit tracker
  - 3.5.1 Design habit tracking interface
  - 3.5.2 Develop habit creation and editing functionality
  - 3.5.3 Implement streaks and progress visualisation
  - 3.5.4 Integrate AI habit suggestions
  - 3.5.5 Test habit usability and adoption
- 3.6 Deliver mobile app (iOS and Android MVP)
  - 3.6.1 Design app architecture and navigation
  - 3.6.2 Integrate calendar module
  - 3.6.3 Integrate voice capture module
  - 3.6.4 Integrate habit tracker module
  - 3.6.5 Optimise app performance
  - 3.6.6 Conduct accessibility testing
  - 3.6.7 Achieved MVP release (Milestone M3)**
- 3.7 Deliver web dashboard
  - 3.7.1 Design dashboard user interface
  - 3.7.2 Develop browser-based calendar and tasks
  - 3.7.3 Implement export functions (CSV/ICS)
  - 3.7.4 Test browser compatibility and responsiveness

#### 4.0 Monitoring and Controlling

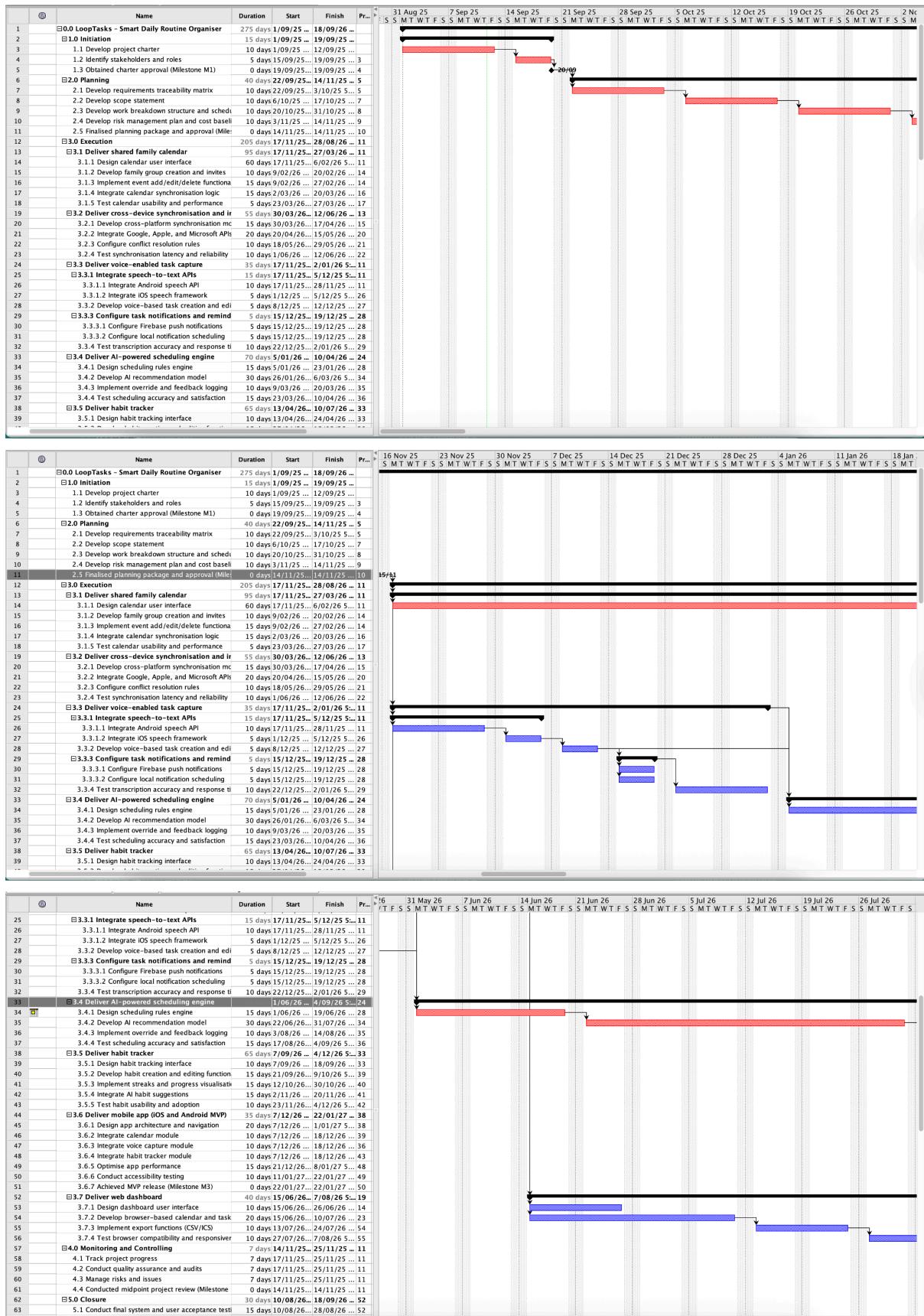
- 4.1 Track project progress
- 4.2 Conduct quality assurance and audits
- 4.3 Manage risks and issues
- 4.4 Conducted midpoint project review (Milestone M4)**

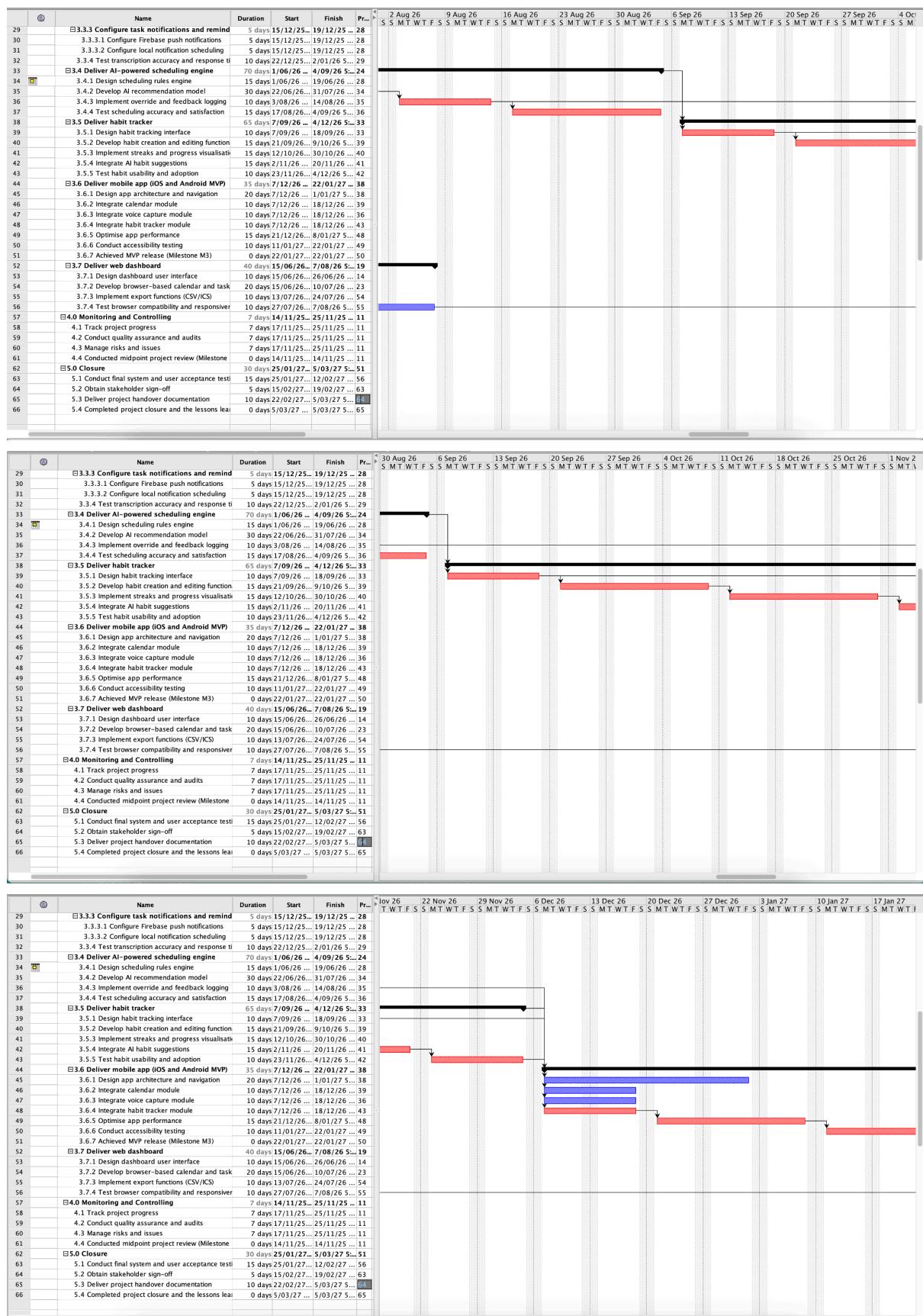
#### 5.0 Closure

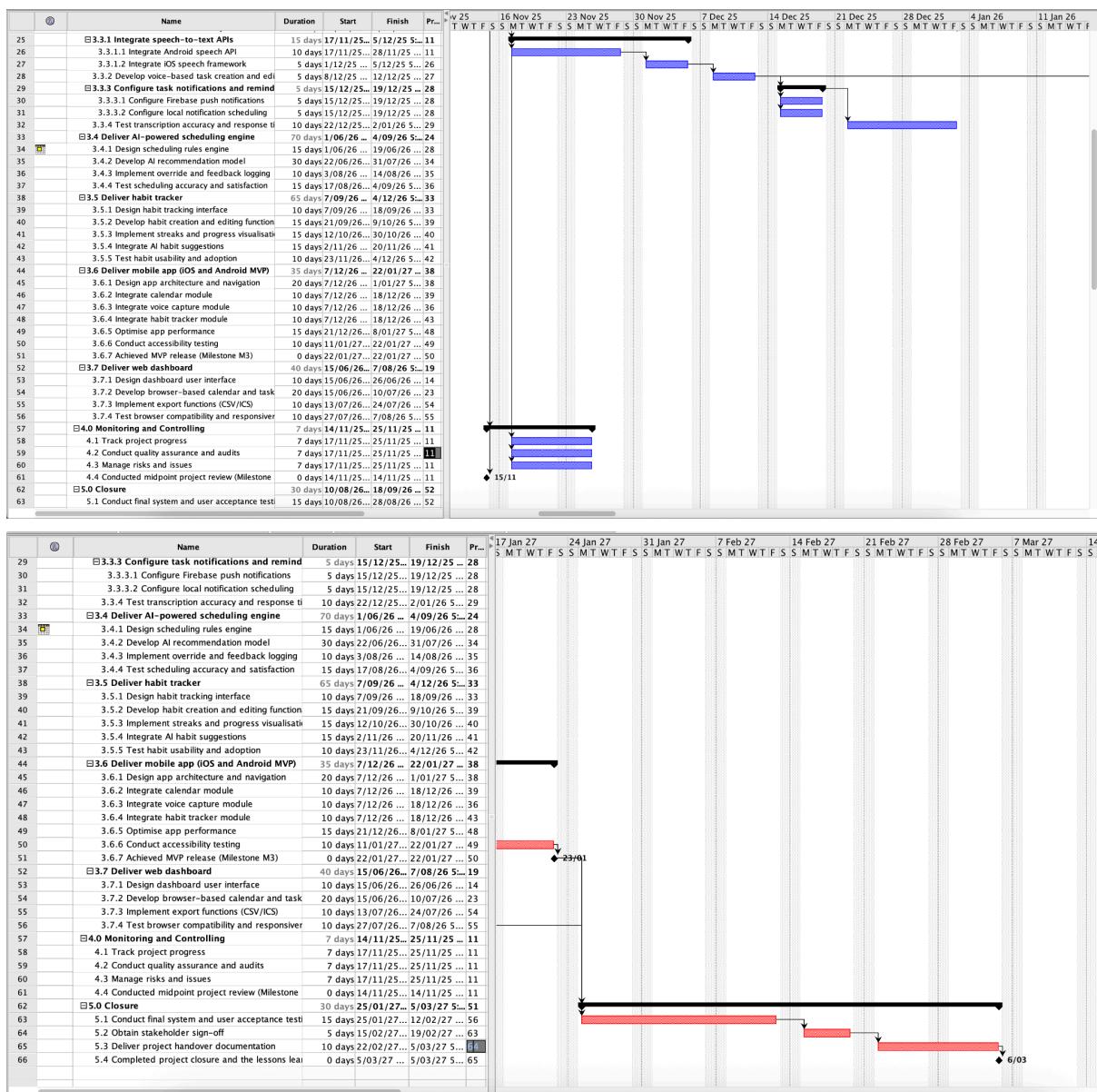
- 5.1 Conduct final system and user acceptance testing
- 5.2 Obtain stakeholder sign-off
- 5.3 Deliver project handover documentation
- 5.4 Completed project closure and lessons learned (Milestone M5)**

(Tausworthe, 1979), (Zecheru & Olaru, 2016)

# Gantt chart







## Gantt Chart Justification

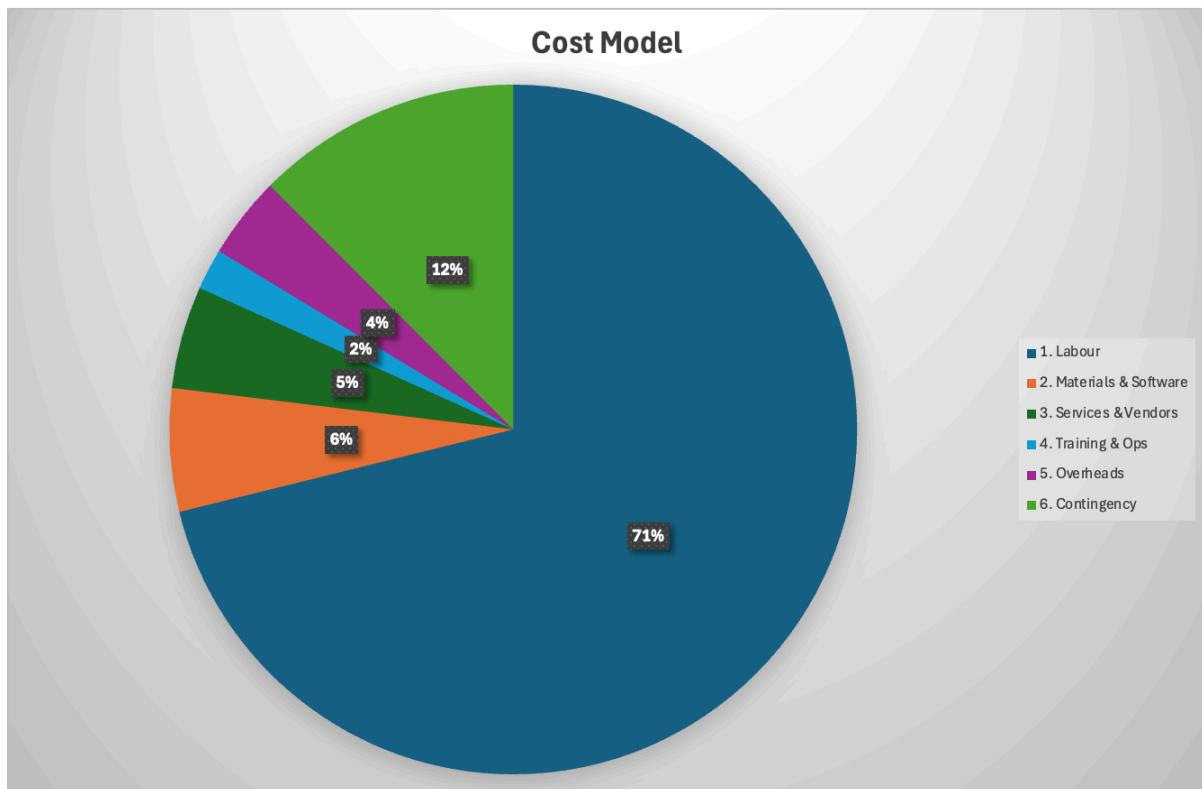
The project schedule was developed using a bottom-up approach, aligning durations directly with WBS tasks and industry benchmarks for software development (Project Management Institute, 2021). Initiation and Planning phases were allocated shorter durations (15 and 40 days) to reflect their document-driven nature, while Execution was allocated the majority of time (310 days) to account for labour-intensive design, development, integration, and testing. Dependencies were structured logically: foundational modules such as the Shared Family Calendar and Synchronisation precede advanced features like AI Scheduling and the Habit Tracker, while parallel development of independent components (e.g., Voice Capture and Calendar UI) shortens the timeline. Buffer periods and testing activities were embedded to manage risks of rework, particularly around integration points. This phasing ensures all deliverables fit within the 18-month cap defined in the Charter, while maintaining feasibility, critical path visibility, and alignment with industry-standard SDLC practices.

# Cost Model

Category	Item / Role	Basis (hrs/units)	Rate/Unit (AUD)	Subtotal (AUD)	% of Total
1. Labour	Project Manager	600 hrs	\$70/hr	\$42,000	14%
	Tech Lead	600 hrs	\$75/hr	\$45,000	15%
	Mobile Devs (x2 combined)	1,200 hrs	\$60/hr	\$72,000	24%
	Web Developer	300 hrs	\$55/hr	\$16,500	6%
	UX/UI Designer	300 hrs	\$55/hr	\$16,500	6%
	ML/DS Specialist	200 hrs	\$65/hr	\$13,000	4%
	QA / Tester	300 hrs	\$50/hr	\$15,000	5%
Labour Subtotal				<b>\$220,000</b>	<b>74%</b>
2. Materials & Software	Design (Figma, etc.)	12 mo	\$150/mo	\$1,800	<1%
	App Store + Play Store	Once	\$124	\$124	<1%
	CI/CD & Analytics tools	12 mo	\$125/mo	\$1,500	<1%
	Test Devices	5 units	\$600	\$3,000	1%
	Cloud Hosting baseline	12 mo	\$1,000/mo	\$12,000	4%
Materials Subtotal				<b>\$18,424</b>	<b>6%</b>
3. Services & Vendors	Cloud coverage & monitoring	Lump sum		\$9,000	3%
	Security / Pen-test review	Fixed		\$3,000	1%
	Accessibility review	Fixed		\$3,000	1%
Services Subtotal				<b>\$15,000</b>	<b>5%</b>
4. Training & Ops	Pilot training & onboarding	Fixed		\$3,000	1%
	Ops runbooks & drills	Fixed		\$2,000	1%
Training & Ops Subtotal				<b>\$5,000</b>	<b>2%</b>
5. Overheads	Admin, governance, facilities	5% of Labour		\$11,000	4%

<b>6. Contingency</b>	15% of (Labour+Mat+Services)			\$38,014	13%
<b>TOTAL</b>				<b>\$299,438</b>	100%

(Stockton & Wang, 2004), (Hays, 2023), Hays. (2024)



## Cost Estimation Methodology & Justification

### Methodology Used

The cost model was developed using a bottom-up estimation method, starting at the activity and work package level from the approved Work Breakdown Structure (WBS) and rolling costs upward to deliverable categories (Hays, 2023). This is consistent with Workshop 5 guidance that bottom-up provides the most accurate estimate for complex IT projects. Where appropriate, analogous estimation was also applied (e.g., cloud hosting and tool subscriptions) using vendor pricing benchmarks (Hays, 2024).

### Labour Costs

Labour represents the largest cost driver (74% of total). Hours were derived directly from WBS task durations and dependencies. Rates were aligned with the Hays Salary Guide FY25/26, selecting conservative figures at the lower bound of each role's range. For example, Project Managers (\$70/hr) and Tech Leads (\$75/hr) were benchmarked against Hays' IT project contract rates of \$65–\$100/hr. Developers, UX/UI designers, and testers were priced at \$50–\$60/hr, consistent with entry-to-mid-level ranges (Hays, 2024). The ML/DS Specialist rate (\$65/hr) is slightly below Hays' mid-level benchmark (\$70–\$110/hr),

but was intentionally set lower to reflect the use of a blended junior/mid resource. This conservative approach ensures estimates remain realistic while maintaining alignment with the \$300,000 Charter cap and supporting cost control discipline (Hays, 2024).

### **Materials, Software, and Services**

Material and software costs include essential tools (Figma, CI/CD services, analytics, and developer accounts) and modest hardware for testing. Vendor services include lightweight penetration testing, accessibility audits, and cloud monitoring. These were priced analogously against published subscription and consultancy rates (Hays, 2024).

### **Training and Operational Costs**

Pilot family training, onboarding, and operational runbooks were included to ensure adoption and support. These are modest in scale given the MVP scope but demonstrate recognition of transition and change management activities (Hays, 2024).

### **Overheads**

Overheads (5% of labour) account for project governance, administration, and indirect costs such as facilities, licenses, and compliance support. This is consistent with PMBOK guidance on including indirect costs in the cost baseline (Hays, 2024).

### **Contingency**

A contingency of 15% was applied to labour, materials, and services (totalling \$38,014). This is justified by identified risks in the Risk Register (Workshop 6), particularly:

- Reliance on third-party calendar APIs (risk of cost/effort increase).
- Potential performance tuning to achieve the P95 <200ms requirement.
- Risk of scope creep and change requests.

The 15% level is within industry practice (15–20%) and balances risk coverage without breaching the Charter budget cap.

### **Cost Baseline Alignment**

The total cost of \$299,438 is fully aligned to the Charter cap (\$300k). Costs will be time-phased into a cost baseline consistent with the project schedule: low during Initiation and Planning, peaking during Execution (labour-intensive development and integration), and tapering in Closure (final testing, training, and handover) (Hays, 2024).

Cost monitoring will be managed using Earned Value Management (EVM) at phase gates. Variance thresholds of ±10% will trigger corrective actions, ensuring the \$300,000 cap is strictly maintained (Hays, 2024).

### **Assumptions and Dependencies**

This cost model assumes stable third-party API pricing, 7.5-hour productive working days, and no significant scope creep beyond defined deliverables. Vendor services (security and accessibility reviews) are benchmarked against industry consultancy averages. Contingency is distributed primarily across Execution and Closure phases to mitigate identified risks such as API policy changes and performance optimisation.

# Cost Baseline

Phase	Months	Activities (WBS)	% of Total Cost	Cost (AUD)
<b>Initiation</b>	1–2	Charter, stakeholder ID, approvals	5%	\$15,000
<b>Planning</b>	3–4	RTM, Scope, WBS & Schedule, Risk & Cost Plans	10%	\$30,000
<b>Execution (Early)</b>	5–9	Shared Calendar, Sync, Voice, Habit Tracker	35%	\$105,000
<b>Execution (Late)</b>	10–15	AI Scheduling, MVP Mobile App, Web Dashboard	35%	\$105,000
<b>Closure</b>	16–18	UAT, Sign-off, Handover, Lessons Learned	5%	\$15,000
<b>Contingency</b>	Spread across phases	Applied proportionally to Execution and Closure	10%	\$29,438
<b>TOTAL</b>	18 months	Full lifecycle	100%	<b>\$299,438</b>

(Stockton & Wang, 2004), (Hays, 2023), Hays. (2024)



The cost baseline is time-phased to match the project lifecycle. Initiation and Planning require relatively low investment (15% of total) as these phases are document-driven. Execution absorbs the majority of costs (70%), reflecting the labour-intensive development of mobile, web, and AI components. Closure requires a smaller allocation (5%) for final testing, training, and handover. Contingency (10%) is spread across Execution and Closure to cover risks identified in the register, such as calendar API changes and performance optimisation. The baseline totals \$299,438, consistent with the \$300,000 Charter cap, and will be tracked via Earned Value Management (EVM) and phase-gate reviews to monitor variance against plan.

# Risk Register Requirements

Risks were identified through team brainstorming sessions, scenario planning, and review of industry standards (Workshop 6). Each member proposed risks aligned with their expertise, which were analysed using a probability–impact scale (1–5). The risks were prioritised via a probability–impact matrix, with team consensus on likelihood and impact scoring. Response strategies were then developed, balancing feasibility with budget constraints.

ID	Risk Description	Impact on Project	Impact (1–5)	Likelihood (1–5)	Score	Response Strategy	Owner
R01	Google/Apple/Microsoft Calendar APIs change pricing or terms	Sync features break or costs rise → delays, extra spend	5	4	20	<b>Mitigate:</b> abstraction layer, fallback sync, buffer 10 days + \$5k	Tech Lead
R02	Mobile OS updates (iOS/Android) break compatibility during dev	Extra dev effort; possible delay in MVP release	5	3	15	<b>Mitigate:</b> continuous beta testing, 15 days buffer, device lab	Dev Team
R03	Voice recognition fails in noisy or accented environments	Users abandon feature → adoption target missed	4	4	16	<b>Mitigate:</b> edit-after-dictation, text fallback, pilot diverse users	UX Lead
R04	AI scheduling engine provides poor or irrelevant suggestions	Low satisfaction → AI feature undervalued	4	3	12	<b>Mitigate:</b> feedback loop, explainable AI rationale, extra ML tuning	Data Scientist
R05	Accessibility features not implemented early	Expensive retrofits; WCAG non-compliance	5	2	10	<b>Avoid/Mitigate:</b> embed in design system, 2 accessibility reviews	QA Lead
R06	Data breach or insecure API integration	Legal penalties, reputational loss	5	2	10	<b>Transfer/Mitigate:</b> penetration testing, encryption, DPIA	Security Lead
R07	Pilot families disengage, provide no feedback	No validation → release misaligned with users	3	3	9	<b>Mitigate:</b> incentivise pilots, backup users, mid-pilot survey	PM
R08	Stakeholder conflict or slow approvals	Planning delays, scope uncertainty	4	2	8	<b>Mitigate:</b> RACI, escalation path, weekly stakeholder check-ins	PM
R09	Key developer leaves mid-project	Loss of knowledge → reduced velocity	4	2	8	<b>Mitigate:</b> cross-skill, documentation, contractor pool	PM
R10	Internal team conflict or poor communication	Slowed decisions, rework, low morale	3	2	6	<b>Mitigate:</b> team charter, conflict resolution protocol, retrospectives	PM
R11	Underestimation of cross-platform dev effort	Delays, potential over-budget	4	3	12	<b>Mitigate:</b> progressive prototyping, velocity tracking, descoping rules	PM
R12	Regulatory changes (privacy, children's data) mid-project	Rework required; cost/time impact	5	1	5	<b>Accept/Mitigate:</b> monitor updates, buffer in contingency	Security Lead
R13	Strong user adoption in pilots	Faster stakeholder buy-in, possible early release.	4	3	12	<b>Exploit</b> – actively use positive pilot results in marketing and stakeholder communications to accelerate adoption and secure potential early release benefits.	Product Lead

## Risk Matrix

P R O B A B I L I T Y	5	4	3	2	1	
						IMPACT
5						
4					R03	R01
3			R07		R04 R11 R13	R02
2		R10		R08 R09	R05 R06	
1					R12	
	1	2	3	4	5	

## Justifications for Risks (R01–R13)

R01: Calendar API policy change (Google/Apple/Microsoft)

- **Why risk?** External dependencies (third-party APIs) are common risk sources because vendors can change terms, pricing, or deprecate features unexpectedly.
- **Probability = 4:** These API providers regularly change access terms (e.g., Google Calendar API quota limits updated 2022). Not “almost certain,” but **likely**.
- **Impact = 5:** Without functioning calendar sync, LoopTasks loses its core value proposition (shared family scheduling). This is catastrophic for MVP.
- **Reference:** PMBOK (2021) highlights vendor dependency as a high-risk category in IT projects; Workshop 6 flagged “supplier dependency” as external risk. (Project Management Institute, 2021)

R02: OS updates break app compatibility (iOS/Android)

- **Why risk?** Mobile OS vendors (Apple, Google) push major updates yearly. Apps often face regressions (Apple iOS 16 broke many apps with background task rules).
- **Probability = 3:** OS updates are certain, but **breakages vary**. Medium likelihood.
- **Impact = 5:** If LoopTasks crashes or fails post-update, trust and adoption collapse → catastrophic.
- **Reference:** (Project Management Institute, 2021)

R03: Voice recognition fails in noisy/accented environments

- **Why risk?** Voice UX has high error rates in real-world conditions (background noise, diverse accents). Microsoft reports error rates of 15–20% in uncontrolled contexts.
- **Probability = 4:** Likely because user diversity = inconsistent accuracy.
- **Impact = 4:** Feature remains usable with fallback, but adoption targets (70% completion) at risk. Not catastrophic, but major.
- **Reference:** Workshop 6 notes “functional failure under environment” as a product risk.

R04: Poor AI scheduling suggestions

- **Why risk?** AI-based recommendations may not align with user needs if models lack enough data or contextual rules.
- **Probability = 3:** AI “cold start” problem is common (low data early stage). Possible but not inevitable.
- **Impact = 4:** Bad suggestions = user frustration → weak adoption of flagship feature.
- **Reference:** Gartner highlights AI adoption risks tied to “explainability and user trust.” (Groombridge, 2022)

#### R05: Accessibility features not implemented early

- **Why risk?** Retro-fitting accessibility (WCAG compliance) is more costly than building early. Industry reports show **30–50% cost increases** if done late.
- **Probability = 2:** Possible if ignored, but the team already flagged accessibility in scope.
- **Impact = 5:** Non-compliance blocks users with disabilities, reputational/legal impact → catastrophic.
- **Reference:** WCAG 2.1 standards; Workshop 6 “regulatory compliance risk.”

#### R06: Data breach or insecure integration

- **Why risk?** Handling family data (tasks, schedules) makes security crucial. Breaches → reputational loss and legal risk.
- **Probability = 2:** Lower, since encryption + DPIA planned.
- **Impact = 5:** A breach is catastrophic in trust + legal terms.
- **Reference:** ISO/IEC 27005 (InfoSec risk standard); PMBOK lists data security as “high impact.” (Project Management Institute, 2021)

#### R07: Pilot families disengage

- **Why risk?** Without pilot user feedback, iterative improvements fail. Adoption rate goals can't be validated.
- **Probability = 3:** Engagement risk is possible; many pilots show low participation without incentives.
- **Impact = 3:** Delays learning loops → medium impact.
- **Reference:** Agile practice guides (PMI) emphasise stakeholder feedback as a critical success factor. (Project Management Institute, 2021)

#### R08: Stakeholder conflict/slow approvals

- **Why risk?** Conflicting priorities between sponsor, product lead, accessibility lead can cause decision bottlenecks.
- **Probability = 2:** Not highly likely but possible given multiple roles.
- **Impact = 4:** Approval delays can block schedule-critical tasks.
- **Reference:** PMBOK's stakeholder engagement risk; Workshop 6 “internal political risk.” (Project Management Institute, 2021)

#### R09: Key developer leaves mid-project

- **Why risk?** IT projects face turnover risk; industry turnover rate for developers = 13.2% annually (LinkedIn 2023).
- **Probability = 2:** Possible, not highly likely in 18 months.
- **Impact = 4:** Loss of velocity, knowledge gaps, possible rework.
- **Reference:** PMBOK identifies human resource risk as high relevance in Agile projects. (Project Management Institute, 2021)

#### R10: Internal team conflict/poor communication

- **Why risk?** Misalignment in distributed Agile teams leads to delays and morale loss.
- **Probability = 2:** Team charter already exists, so lower probability.
- **Impact = 3:** Medium: delays and reduced productivity, but not catastrophic.
- **Reference:** Workshop 6 flagged “internal conflicts” as people risk.

#### R11: Underestimation of cross-platform dev effort

- **Why risk?** Building sync across iOS, Android, and Web often underestimated; integration costs hidden.
- **Probability = 3:** Common in student and industry projects.
- **Impact = 4:** Can push timeline and cost baseline significantly.
- **Reference:** McConnell (2006) *Software Estimation*: underestimation = most frequent cause of project overruns. (McConnell, 2006)

#### R12: Regulatory changes (privacy, children's data)

- **Why risk?** Apps handling personal/family data must comply with GDPR, COPPA, OAIC. Sudden changes = rework.
- **Probability = 1:** Rare — frameworks stable, but not impossible.
- **Impact = 5:** Non-compliance = legal liability, reputational damage → catastrophic.
- **Reference:** Workshop 6 “regulatory environment risks.”

#### R13: Strong user adoption in pilots

- **Why risk?** This is an opportunity risk: if pilot families adopt the app strongly, it can accelerate stakeholder confidence, validate MVP feasibility earlier, and create opportunities for an early release or added support. By treating it as a managed risk, the team can plan to leverage the benefit rather than leaving it to chance.
- **Probability = 3:** Medium likelihood. While strong adoption is possible, pilot engagement often varies, and not all families may show high uptake without targeted support.
- **Impact = 4:** High. Strong adoption would provide compelling evidence for stakeholders, improve project credibility, and potentially reduce time-to-market by securing early validation.
- **Reference:** PMBOK (2021) emphasises that project risk management covers both threats and opportunities. Opportunity risks can be managed using an “exploit” strategy to maximise benefits (Project Management Institute, 2021).

## Cost/Time Implications

Cost and time implications of response strategies were considered. For example, API abstraction and fallback sync (R01) adds a 10-day buffer and \$5k cost; continuous beta testing and device labs for OS updates (R02) require \$3k and 15 extra days; security penetration testing (R06) incurs a \$3k vendor cost; and onboarding a replacement developer (R09) could require 2 weeks. These reserves are integrated into the 15% contingency in the cost baseline, ensuring realistic coverage. (Patterson & Nealey, 2002)

# **Group Reflection**

Working together on our project plans gave us the chance to put our Team Charter into practice and see how well our group values worked in reality. Looking back, we feel our collaboration was shaped by the way we handled leadership, support, feedback, and conflict resolution.

In terms of leadership, Fares displayed outstanding leadership as he provided us with a clear goal and tasks to accomplish for the project. Other members also voiced their opinions to help with the project. For example, some of us took the lead in drafting the scope, while others kept track of deadlines and reminded the team of upcoming meetings. This approach worked well because it meant no one felt overwhelmed, and everyone had a chance to contribute their strengths.

Providing support to one another was a significant factor in our success. We knew from the beginning that our busy schedules could cause challenges, so we made an effort to check in and share the workload when someone was falling behind. Tools like Google Docs allowed us to step in easily if someone needed help, and our weekly meetings gave us space to update each other on progress. Having that safety net meant we felt comfortable asking for help, rather than struggling in silence.

Feedback sharing has become one of the most valuable aspects of our teamwork. We made sure to give feedback that was constructive and specific, rather than just pointing out problems. For example, when reviewing each other's sections, we would suggest concrete improvements rather than vague criticism. This made feedback feel like part of the process instead of something negative, and it helped us produce stronger outputs overall.

Of course, we also had moments of disagreement, which tested our conflict resolution methods. Sometimes we had different ideas about how to prioritise tasks or what features to emphasise. In these situations, we reminded ourselves of the agreement we made to hear everyone out. After everyone shared their perspective, we often used our voting method to make a fair decision. When a vote wasn't enough, we tried to find a middle ground. These discussions were always respectful, which kept conflicts from turning personal.

Overall, we feel our collaboration reflected the strengths we outlined in our charter: open communication, respect, and teamwork. While we did struggle at times with procrastination and time management, our support systems and shared leadership helped us overcome these challenges. From this experience, we learned that clearer time-boxing and earlier draft deadlines would make our work even stronger in future projects. Using a reflective approach similar to Gibbs' Cycle, we considered what happened, the impact of our actions, and what we would improve, ensuring that our teamwork experience translates into lessons for future projects.

# Individual Reflection

## Ralph Thang's Reflection

In this project, I contributed by completing the Requirements Traceability Matrix (RTM), collaborating with my group on task allocations, and preparing the presentation slides. Working on the RTM helped me strengthen my attention to detail, as I had to ensure that each requirement was accurately linked to its corresponding deliverables. This also gave me a clearer understanding of how requirements flow through a project and how they influence outcomes.

Through this process, I also improved my ability to break down complex tasks into manageable parts when working on the WBS and presentation. Collaboration within the team played an important role in keeping me accountable and ensuring consistency across our outputs. Regular discussions helped us avoid duplication and gave us the opportunity to build on each other's ideas, which made the final product stronger.

At times, I found it challenging to manage my time alongside other unit assignments, but teamwork motivated me to stay on track and meet deadlines. I believe my contribution was valuable in terms of ensuring accuracy in documentation and clarity in the presentation. If I were to improve, I would prepare earlier and take a more active role in leading group discussions.

Overall, I would grade my personal performance as a High Distinction, as I consistently delivered quality work and collaborated effectively. I would also grade my team's performance as a High Distinction, as we supported each other and produced a professional outcome that reflected genuine teamwork.

## Jireh Loh's Reflection

During this project, I was responsible for explaining the Gantt chart, Work Breakdown Structure (WBS), and the first two milestones in our group presentation. Initially, I found it challenging to interpret the critical path, as not every deliverable I expected to be critical was highlighted in ProjectLibre. For example, the Habit Tracker and Mobile App were blue (non-critical), while Cross-device Synchronisation and Web Dashboard were red. This taught me the importance of relying on project management tools and data rather than assumptions.

Through this experience, I developed stronger analytical skills by manually verifying the critical path calculations and matching them to the total project duration. Working on the WBS also improved my ability to break down complex tasks into manageable deliverables, which enhanced my understanding of project scheduling and dependencies.

At times, I struggled with time management, especially balancing this project with other unit assignments. However, collaborating with my team encouraged accountability, as each member relied on the others to deliver their sections. Regular communication ensured we aligned our outputs and avoided duplication.

I believe my contribution to the team was valuable, especially in clarifying technical aspects of scheduling. If I were to improve, I would prepare earlier and contribute more actively in guiding group discussions.

Overall, I would grade my personal performance as a High Distinction level. I would grade my team's performance as a High Distinction, as we worked cohesively, supported each other, and produced a professional outcome that reflected genuine teamwork.

## **Joshua Sentana's Reflection**

My main role in the project involved shaping the project scope, compiling references, and preparing milestone justifications for the presentation. Each of these tasks required both a solid understanding of project management concepts and the ability to communicate ideas clearly. While I initially thought scope writing would be straightforward, I soon realised the challenge of being clear yet detailed. The referencing process was time-consuming but manageable, and I felt confident in my research and citation skills. The milestone justification, however, proved to be the most demanding, as it required not only explaining milestones but also demonstrating their significance.

Overall, I performed well in producing clear, structured content, particularly in the scope and references sections, which enhanced the professionalism of our report. I recognise, however, that my milestone justification could have been a bit more detailed. This does prompt me to explain more through words instead of just reading the slides, but a few more sentences to explain could do better. Through the process, I learned the importance of adjusting how information is presented depending on the audience, balancing accuracy, clarity, and persuasiveness.

This experience helped me strengthen my skills in project documentation, referencing, and justifying project decisions. Team feedback was particularly valuable in refining my work, and I learned to accept constructive criticism as a way to improve. Going forward, I plan to focus more on brevity in presentations and continue practicing how to adapt content for different contexts. Based on my contributions and growth, I would grade myself at least a Distinction. For the team, I would give a High Distinction, as we worked effectively together, supported each other, and delivered the goal we were striving towards.

## **Fares Elkordy's Reflection**

In this project, I took on the role of Project Manager and was primarily responsible for developing the Work Breakdown Structure (WBS), coordinating the Gantt chart, and ensuring our deliverables aligned with the project charter and scope. Preparing these gave me a stronger understanding of dependencies, critical paths, and how they link directly to cost estimation and risk management.

I focused on guiding the team by clarifying expectations, allocating tasks fairly, and keeping us on schedule. I coordinated weekly meetings and ensured updates in Google Docs were consistent across deliverables. This avoided duplication and ensured our submission reflected a unified effort rather than separate pieces.

At first, I felt pressure balancing leadership with my own deliverables, but I learned that setting structured updates and communicating expectations early made this manageable. This experience also showed me the importance of simplifying project management tools for non-technical audiences, which I will carry into future teamwork and leadership roles.

Balancing this unit with other commitments was challenging, but structured check-ins and shared documents helped us stay on track. If I were to improve, I would dedicate more time to practicing presentation delivery. While my explanations of the WBS and Gantt chart were clear, I could simplify technical details further for broader audiences. This reflection follows Gibbs' Reflective Cycle, moving from describing experiences and evaluating challenges to drawing lessons and planning improvements.

Overall, I would grade my performance as a High Distinction. I would also grade the team's performance as a High Distinction, as we collaborated effectively and delivered a professional outcome.

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