PawfectMatch
RISK MANAGEMENT PLAN

Version 1.2

12/10/2025

VERSION HISTORY

Version #	Implemented By	Revision Date	Approved By	Approval Date	Reason
1.0	Chloie	24/09/2025	Zi Jian	24/09/2025	Risk Management Plan Template
1.1	Chloie	25/09/2025	Nelly	26/09/2025	Initial Risk Management Plan Draft
1.2	Chloie	11/10/2025	Zi Jian	12/10/2025	Final Risk Management Plan

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1 INTRODUCTION

1.1 PURPOSE OF THE RISK MANAGEMENT PLAN

The risk is an event or condition that, if it occurs, could have a positive or negative effect on a project's objectives. Risk Management is the process of identifying, assessing, responding to, monitoring, and reporting risks.

The Risk Management Plan defines how risks associated with the PawfectMatch project will be identified, analyzed, and managed. It outlines the framework for how risk management activities will be performed, recorded, and monitored throughout the lifecycle of the project, ensuring that risks are proactively addressed rather than reactively handled.

The plan will establish:

- Process for identifying and categorizing the risks during planning, development, and deployment phases
- Approach for qualitative and quantitative risk analysis to prioritize risks based on probability and impact
- Procedures for selecting appropriate risk responses, including avoidance, mitigation, acceptance, or transfer
- Monitoring and reporting structure to ensure that the most significant risks are communicated to stakeholders in a timely manner

The Risk Management Plan is created and maintained by the Project Manager in collaboration with the project team and reviewed during weekly project team meetings. Updates will be made as new risks emerge or existing risks change in probability or impact.

The intended audience of this document is the project team, project sponsor (lab tutor) and relevant stakeholders who are responsible for the success of PawfectMatch.

2 RISK MANAGEMENT PROCEDURE

2.1 PROCESS

The project manager working with the project team and project sponsors will ensure that risks are actively identified, analyzed, and managed throughout the life of the project. Risks will be identified as early as possible in the project so as to minimize their impact. The following steps summarize the process for responding to risks in the PawfectMatch project:

1. **Identify:** Capture potential risks during planning sessions
2. **Analyze:** Assess the likelihood and impact of each risk, and classify risks into their respective priorities using a risk matrix
3. **Response Plan:** Define appropriate strategies (Avoid, Mitigate, Transfer, Accept)
4. **Implement:** Execute the chosen response strategy and assign ownership
5. **Monitor and Control:** Review risks at weekly team meetings, update the Risk Register, and escalate critical risks to the Project Manager and stakeholders

The details of each step are outlined in the following sections. The PawfectMatch QA Manager will serve as the Risk Manager for this project.

2.2 RISK IDENTIFICATION

Risk identification for the PawfectMatch project will involve the project team, the project sponsor, and other appropriate stakeholders. The process will include an evaluation of:

- **Environmental Factors:** Internet connectivity, and external dependencies (i.e. Google OAuth2)
- **Organizational Culture:** Culture of the project team, inIdentify risks in task dependencies
- **Project Management Artifacts:**
    - **Project Scope:** Identify risks from scope or unclear requirements
    - **Deliverables:** Assess feasibility and potential quality concerns
    - **Assumptions:** Highlight risks if assumptions prove false
    - **Work Breakdown Structure:** Identify risks in task dependencies
    - **Cost/Effort Estimates:** Identify risks of underestimation

- **Resource Plan:** Consider risks related to time availability of the team
- **Schedule:** Highlight potential delays due to academic deadlines

A Risk Breakdown Structure is created to identify the category each risk falls under. It will categorize risks into four main areas - Business, Technical, Organizational, and Project Management - helping the team ensure coverage of both internal and external factors. The Risk Breakdown Structure is shown below.

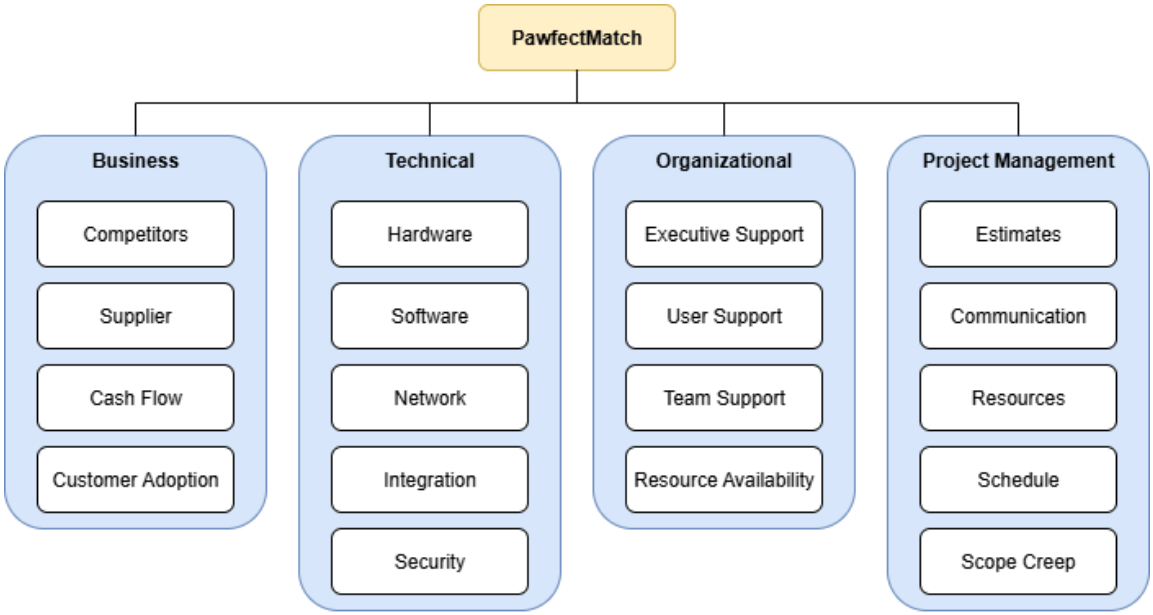


Figure 1: Risk Breakdown Structure

A Risk Management Log (a.k.a. Risk Register) will be created and maintained to capture all identified risks, including their ranking, description, category, root cause, triggers, potential responses, owner, probability, impact and status. The log will be updated as needed throughout the project and will be stored electronically here in the project GitHub repository for easy access and version control. The current Risk Register is included in Appendix C of this document.

2.3 RISK ANALYSIS

All risks identified will be assessed to identify the range of possible project outcomes. Qualification will be used to determine which risks are the top risks to pursue and respond to and which risks can be ignored.

2.3.1 Qualitative Risk Analysis

The project team will apply a qualitative analysis by classifying each risk according to its probability and impact. This process will be carried out collaboratively by the project manager and team members during one of the weekly meetings held.

Probability

- **Almost Certain:** Expected to occur frequently, more than 90% probability
- **Likely:** Will probably occur at some point, between 71% and 90% probability
- **Possible:** Could occur but not guaranteed, between 41% and 70% probability
- **Unlikely:** Uncommon but there is a chance, between 10% and 40% probability
- **Rare:** May occur only in exceptional circumstances, less than 10% probability

Impact

- **Catastrophic:** Would cause project failure or make it impossible to deliver critical requirements
- **Major:** Serious impact on schedule, scope, or quality, and requires major rework or delays in project timeline
- **Moderate:** Noticeable impact, causing schedule slips or reduced quality, but project is still able to proceed
- **Minor:** Small impact on performance or deliverables, easily corrected without major consequences
- **Negligible:** Minimal impact, does not affect delivery or performance of project

Risks classified in the Red Zone (high probability, high impact) will require both mitigation and contingency plans. Risks in the Yellow Zone (medium probability/impact) will be tracked closely with responses as needed. Green Zone risks will be monitored but generally accepted without additional planning. The matrix below maps each identified risk according to its likelihood and potential impact.

Probability/Impact	Negligible	Minor	Moderate	Major	Catastrophic
Rare					
Unlikely		R06	R13	R05	R14
Possible		R10 R19	R02 R09 R12 R15 R18 R21 R22	R07 R11 R24	
Likely			R01 R04 R16 R17 R20 R23	R03 R25	R08
Almost Certain					

Figure 2: Risk Matrix

2.3.2 Quantitative Risk Analysis

The quantitative risk analysis will be done in conjunction with the qualitative risk analysis. A numerical rating will be applied to each risk to help the team prioritize risks.

Each risk will be assigned a score from 1 - 5 for probability and impact. The overall risk exposure will be calculated as `Risk Score = Probability x Impact` (Scale of 1 - 25). Risks scoring 15 or higher will be considered high priority and require immediate response planning. Risks scoring between 8 - 14 will be considered medium priority and monitored actively. Risks scoring 7 or below will be low priority and accepted unless escalated.

This pragmatic approach allows the project team to balance academic constraints with systematic prioritization of risks, ensuring that the most critical issues are managed effectively.

2.4 RISK RESPONSE PLANNING

Each major risk (Red and Yellow zones) identified for the PawfectMatch project will be assigned to a specific project team member for monitoring and follow-up. This ensures accountability and prevents risks from being overlooked during development.

For each major risk, one of the following approaches will be applied:

- **Avoid:** Eliminate the threat by removing its root cause
- **Mitigate:** Reduce the probability or impact of the risk
- **Accept:** Acknowledge the risk but take no immediate action
- **Transfer:** Shift responsibility for the risk to an external party

For each risk that is mitigated or accepted, a contingency plan will be developed to minimize the impact if the risk occurs. This may include:

- Developing and deploying quick fixes or patches
- Adding buffer time to the project schedule to accommodate work
- Assigning team members to cover new key responsibilities
- Using prototypes to validate high-risk features before full implementation

This approach ensures that every high-priority risk has both a proactive strategy and reactive contingency plan, allowing the project team to maintain control over the project outcome.

2.5 RISK MONITORING, CONTROLLING, AND REPORTING

The level of risk in the PawfectMatch project will be tracked, monitored, and reported throughout the entire project lifecycle. The Project Manager will ensure that risks remain visible to the team and that response plans are followed.

A "Top Risk List" will be maintained in a Risk Register stored in an Google Sheets accessible to the whole team. The list will be reviewed weekly by the Project Manager and during weekly team meetings, and updated based on new risks or changes in probability and impact.

All project change requests will be evaluated for their impact on existing risks and for the introduction of new risks.

If a risk escalates to critical severity, the Project Manager will notify the project sponsors and stakeholders as part of the project status reporting process and propose mitigation actions.

By integrating risk monitoring and reporting into the project's regular workflow, the project team ensures that risks remain under active control and that the project stakeholders are informed of significant changes in a timely manner.

3 TOOLS AND PRACTICES

A Risk Log will be maintained by the project manager and will be reviewed as a standing agenda item for project team meetings.

A Risk Log will be maintained by the Project Manager and updated throughout the project lifecycle. The Risk Log will serve as the central repository for all identified risks and will include all relevant information such as description, impact, owner, and more. It will be referenced during weekly project team meetings as a standing agenda item, where risks will be reviewed, updated, or closed as needed.

In addition, the team will employ the following tools and practices:

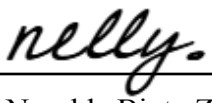
- **Jira:** Track project risks, mitigation plans, contingency plans, and respective status
- **Regular Reviews:** Risk status will be reviewed and updated during each team meeting
- **Change Control:** Any scope or schedule changes will be analyzed for potential risk impact before approval

This combination of tools and practices ensures that risk management is an ongoing, visible, and integrated process within the PawfectMatch project workflow.

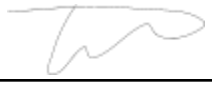
RISK MANAGEMENT PLAN APPROVAL

The undersigned acknowledge they have reviewed the Risk Management Plan for the PawfectMatch project. Changes to this Risk Management Plan will be coordinated with and approved by the undersigned or their designated representatives.

Signature:		Date:	12/10/2025
Print Name:	Chan Zi Jian		
Title	Mr.		
Role	Project Manager		

Signature:		Date:	7/10/2025
Print Name:	Nelly Nurelda Binte Zulkiflee		
Title	Ms.		
Role	Quality Assurance Manager		

Signature:		Date:	11/10/2025
Print Name:	Chloie Tan Yue Yun		
Title	Ms.		
Role	Lead Developer		

Signature:		Date:	12/10/2025
Print Name:	Athena Choo		
Title	Ms.		
Role	QA Engineer		

APPENDIX A: REFERENCES

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APPENDIX B: KEY TERMS

Contingency Plan: Predefined course of action to be taken if a potential risk occurs

Deliverable: Any tangible or intangible outcome produced as part of the project

Impact: Potential effect a risk may have on the project

Mitigation: Actions to be taken to reduce the probability or impact of a risk

Probability: Likelihood of a risk occurring, can be expressed qualitatively or quantitatively

Project Sponsor: Individual(s) providing oversight and approval for the project (Lab Tutor)

Stakeholder: Individual(s) or group(s) with an interest in the project, including team members, lab tutor and end users

Risk: Uncertain event or condition that if it occurs, may have a negative effect on the project

Risk Log/Register: Document used to record and track identified risks, their attributes, and planned response strategies

Scope Creep: Uncontrolled expansion of project scope beyond the original plan

APPENDIX C: RISK REGISTER

No.	Rank	Risk	Description	Category	Root Cause	Triggers	Potential Responses	Risk Owner	Probability	Impact	Status
R03	1	Competitor apps	Platforms like PetBacker and Pawshake already exist with market share	Competitors (Business)	Strong existing competitors with more features and funding	Users trust and prefer existing apps	**Mitigate:** Focus on niche differentiation, local market focus	Chloie	Likely	Major	Open
R08	1	Critical software bugs	Defects break major flows or data	Software (Technical)	Inadequate testing	Crashes or major bugs	**Mitigate:** Unit and integration tests, peer reviews, bug tracking	Zi Jian	Likely	Major	In Progress
R25	1	Scope Creep	Uncontrolled scope growth mid-sprint	Scope Creep (Project Management)	Weak change control	Adhoc feature requests	**Mitigate:** Apply change request approval process	Quang	Likely	Major	Open
R01	4	Low adoption due to poor usability	Users may not use the app if onboarding or navigation is confusing	Customer Adoption (Business)	Weak UI/UX design, no usability testing conducted	Drop-off during sign up, low retention	**Mitigate:** Conduct usability testing, simplify onboarding, gather feedback	Zi Jian	Likely	Moderate	Open
R04	4	Limited budget for tools	Budget limits restrict paid APIs or hosting services needed for final delivery	Cash Flow (Business)	Insufficient funds	Blocked access to tools	**Mitigate:** Use open-source tools and student licenses	Quang	Likely	Moderate	Monitoring
R07	4	Deployment environment failure	Hosting/misconfiguration will cause downtime near demo/submission	Hardware (Technical)	Misconfigured pipeline/host	Unavailable app	**Mitigate:** Conduct early deployment tests and maintain working backups	Anthony	Possible	Major	In Progress
R11	4	API integration failure	Incorrect endpoints or API calls or data handling will cause errors between modules	Integration (Technical)	Mismatched interfaces	Broken screens	**Mitigate:** Conduct API integration tests with mock data	Quang	Possible	Major	Open
R16	4	Lack of requirement validation	Wrong/partial features delivered/built in final product	User Support (Organizational)	Skipped validation	Rework and low satisfaction	**Mitigate:** Validate requirements with stakeholder during lab sessions	Athena	Likely	Moderate	Open
R17	4	Imbalanced workload	Some members may be overloaded with work causing burnouts and delays in delivery	Team Support (Organizational)	Poor task allocation	Missed tasks	**Mitigate:** Track workloads, redistribute tasks accordingly	Chloie	Likely	Moderate	In Progress
R20	4	Underestimation of effort	Tasks taking longer than planned	Estimates (Project Management)	Optimistic estimates	Sprint spillover	**Mitigate:** Re-estimate based on past sprints, add buffer for more critical tasks	Nelly	Likely	Moderate	Monitoring
R23	4	Overlapping module deadlines	Bottlenecks create merge/integration difficulties	Schedule (Project Management)	Poor sequencing	Merge conflicts	**Mitigate:** Stagger deadlines, use Gantt for schedule tracking	Athena	Likely	Moderate	Monitoring
R24	4	Missed lab submission deadlines	Overload or slippage leading to late submission	Schedule (Project Management)	Tight timeline	Last-minute work	**Mitigate:** Set internal deadlines earlier than official submission dates	Chloie	Possible	Major	Open
R14	13	Data privacy breach	Personal information exposed due to poor controls	Security (Technical)	Weak access control	Suspicious access	**Mitigate:** Apply encryption, restrict access permissions	Anthony	Unlikely	Catastrophic	Open
R02	14	Pet owners distrust providers	Lack of transparency and reviews may reduce trust in services offered	Customer Adoption (Business)	No credibility system for providers	Users does not want to book	**Mitigate:** Add existing reviews (i.e. From Google/Website), Add verified provider badges (optional)	Athena	Possible	Moderate	Open
R09	14	Dependency issues	Library conflicts or deprecated packages will break the application build	Software (Technical)	Unpinned/old dependencies	Build/CI failures	**Mitigate:** Lock dependency versions and test updates	Athena	Possible	Moderate	Monitoring
R12	14	Database schema mismatch	Frontend/backend misaligned with database schema changes	Integration (Technical)	Uncoordinated schema updates	Data load errors	**Mitigate:** Backend to sync with frontend upon any changes	Chong Yao	Possible	Moderate	Open
R15	14	Expectations misalignment	Stakeholders' goals not aligned with team deliverables	Executive Support (Organizational)	Communication gaps	Conflicting feedback	**Mitigate:** Ensure alignment suring weekly team meetings to confirm requirements	Zi Jian	Possible	Moderate	Open
R18	14	Conflicts/Miscommunication	Friction between members or unclear roles/communications will slow project progress	Team Support (Organizational)	Unclear roles and responsibilities	Duplicate/blocked work	**Mitigate:** Maintain open channels and use retrospectives	Quang	Possible	Moderate	Closed
R21	14	Missed updates or unclear requirements	Poor notes/follow-up causes rework	Communication (Project Management)	Weak documentation	Rework and team confusion	**Mitigate:** Maintain project logs and minutes	Anthony	Possible	Moderate	In Progress
R22	14	Limited access to tools	Potential account/license issues block progress	Resources (Project Management)	Expired accounts	Blocked commits/tests	**Mitigate:** Verify access early and renew subscriptions if any in advance	Zi Jian	Possible	Moderate	Open
R05	21	Google OAuth policy change	Auth may break if Google changes policies or scopes	Supplier (Business)	External provider dependency	Login failures post-change	**Mitigate:** Monitor API notices, implement email/password backup	Chong Yao	Unlikely	Major	Monitoring
R10	22	Poor internet connection	Unstable Wi-Fi/internet connection will cause slow/failed demo	Network (Technical)	Venue connectivity	Timeouts or consistent lag	**Accept:** Prepare offline demo video backup	Nelly	Possible	Minor	Open
R13	22	Weak password enforcement	Poor password rules might enable account compromise	Security (Technical)	Inadequate validation	Authentication anomalies	**Mitigate:** Enforce stronger password rules and add validation	Chloie	Unlikely	Moderate	Closed
R19	22	Member unavailable	Illness/emergency removes key team members contributions	Resource Availability (Organizational)	Single-point ownership	Missed deliverables	**Mitigate:** Assign secondary owners (Member from same team)	Chong Yao	Possible	Minor	Open
R06	25	Payment gateway fees	Higher/hidden fees increase project cost	Cash Flow (Business)	Fee structure changes	Cost overrun in tests	**Transfer:** Include buffer and display fees to users if needed	Nelly	Unlikely	Minor	Open