

R&D Project Proposal

finappster



finappster sigma

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Version History

Version	Details	Author	Date
One	Initial Draft	finappster Sigma	08/08/2021
Two	Draft	finappster Sigma	12/08/2021
Three	Draft	finappster Sigma	15/08/2021
Four	Draft	finappster Sigma	23/08/2021
Five	Final Proposal	finappster Sigma	08/09/2021

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Executive Summary

The finappster Sigma Project Proposal has been prepared for Leeanna Kohn-Hardy from finappster. finappster is a platform that allows users to align their financial investments with their ethical beliefs. Its goal is to present users with information about their current investments as well as recommend them potential investments to take. This will allow them to track the performance of their investments and provide insight into the social, environmental and governance factors that they have affected.

This project involves the design of a platform allowing investment providers to advertise investment funds to end users, with the goal of matching investor's ethics to schemes with similar goals. Once development of this feature is complete, it will provide finappster with a feature set that differentiates it from other competitors that are currently on the market.

This project is expected to commence on 12 July 2021 and will conclude on 23 June 2022.

Within this project, we will use a hybrid methodology, adopting elements from both Scrum and Kanban. The resulting methodology, scrum-ban, will involve working in sprints, each three weeks in duration. Where our methodology differs from traditional Scrum is in our project management technique. We will adopt a more Kanban – like way of tracking progress, moving individual user stories across a board. This will allow both us and the Client to monitor progress efficiently.

We begin this report by defining the rationale and goals of the project, outlining where *finappster* is currently and what the Client will gain out of this project. Following this, we laid out the scope statement and outlined the plan for our first sprint.

One of the main risks for this project is COVID. As we are currently within the midst of the pandemic, we are at risk of both entering lockdown and thus having to work from home, and having stakeholders fall ill or potentially die due to the virus.

The expected cost over this project is \$119,370. This covers the cost of the mentor at \$142 + gst per hour, the cost of four junior developers each costing \$45 per hour working together for 300 hours as well as Heroku cost which has an estimation fee of \$25 per month.

Introduction

Context

finappster is an informational tool to help users decide how to align their financial investments with their personal values.

Client

finappster was established in December 2016 by Leeanna Kohn-Hardy. Her experience working for various banks over the previous four years widened her knowledge and understanding of share market investment and enabled her to identify a business opportunity. Leeanna's inspiration to create *finappster* arose from a gap she saw in the market, with people wishing to make ethical investments but struggling to locate the information to do so.

Project Purpose

This purpose of this project is to build a plan that will ultimately implement one of *finappster*'s main missing parts, the ability to align your financial investments with your personal values. Prototyping of some of the first feature priorities to accomplish this will also be a focus.

Opportunity, Problem or Need

Leeanna has been working with AUT's Research and Development program since 2019, and *finappster Sigma* is her fifth team. Through her time at AUT, she has worked with her previous R&D teams to create the basic framework of the application. There is now an opportunity to build upon this foundation and begin planning and prototyping one of the main overarching features that *finappster* needs – the ability for users to align their financial investments with their personal values.

Project Justification

The client has identified a large business opportunity for *finappster* to target, and this is the key reason she began the project in the first place. This opportunity involves allowing investors to see the ethical impacts of their investments, involving both the individual shares they own as well as any investment funds they may be a part of. Another part of this goal is to allow investment providers to advertise their investment funds on the platform, having the ethical impact of the fund being clearly and transparently displayed. Through this, both users and investment providers will be drawn to use the site.

Current Situation

finappster Sigma is the fifth R&D team to work with Leeanna and continue development on the *finappster* application. The initial team, *finappster Alpha & Omega* completed their development on semester 1, cleaning up the initial code that was done by a team outside of AUT. Next *finappster Rho* took over to complete development of Spreadsheet 2.0, providing a more meaningful place for Leeanna's data to be stored. When *finappster Delta* team took over in Semester 2 2020, their team was primarily tasked with merging both teams previous work, establishing a unified development pipeline and taking it live. Upon the completion of *finappster Delta's* work in Semester 1 2021, *finappster Tau* began implementing API data fetching for obtaining the UN sustainable goals data and share data (to our knowledge, unsure of the specifics of the data they are fetching at this point).

The website is currently live and accessible at <https://app.finappster.co.nz> where we can view features like share and cryptocurrency tracking, ability to view a user's portfolio and its performance, a secure two-factor authentication, etc. However, several core features are yet to be developed.

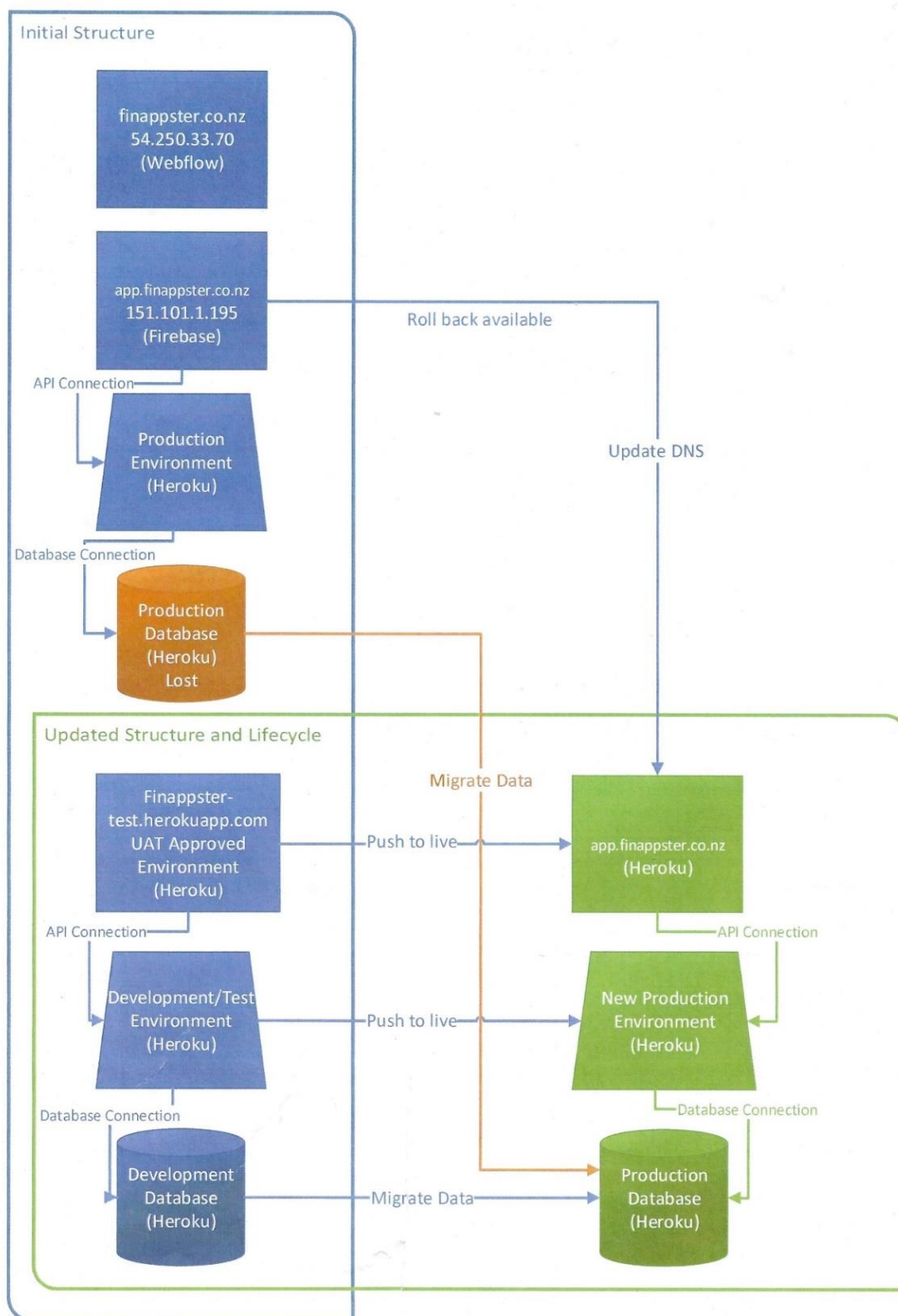


Diagram showing the finappster development timeline.

Scope and Objectives

Project Objective

Over the next year, the project's objective will be to design and begin prototyping a core missing piece of *finappster*, the ability to align your financial investments with your personal values. The design process will come first, documenting, and illustrating the user journey of investors, investment providers and admin support users, which, when implemented with *finappster*'s existing infrastructure, should in theory achieve this goal.

Following that, prototypes of much of the underlying features of this objective that were mapped out in the design phase will be implemented by *finappster Sigma*. The design and prototypes developed over this project will serve as foundation for future teams to build upon.

Scope Statement

Within this project we are looking to plan out the potential implementation of *finappster*'s three major users and the functionality required to achieve this, with one of these users being the development focus of *finappster Sigma*, and the other two designed for use by future *finappster* teams. These three users being the investor, the investment provider, and the admin support user, with the investor's expected user journey being the development scope of *finappster Sigma*.

The investor will be the most common user of *finappster*, browsing the web app to discover where their ethical and sustainable values stand, and using this information to compare to how their existing investments stack up against these results, and to get suggestions on new investments based off these results. The existing *finappster* coding infrastructure already supports some of the functionality to achieve this, such as an early version of the quiz, another *finappster* team working concurrently providing a database of investments that have investment/Sustainable Development Goals (SDG) data to fetch, user login/signup functionality and a dashboard screen that displays some of the investment information already, but to achieve the project objective, a considerable amount of work is still required.

The investment provider will be the second most common user of *finappster*, representing institutions that construct investment funds or sell stock, such as banks. Their interest in *finappster* is to advertise their investments to investors looking to buy stock, catering to those that use the web app looking for investments that match their values. To achieve this, *finappster* requires functionality to allow investment providers to sign up and input their investments into the website, which will subsequently be added to a database that will be displayed on the 'My Values' page under the recommendation section that will be developed by *finappster Sigma* to users that have similar values.

The final user is the admin support user, which represent the employees of *finappster*. This user will consist of employee(s) of *finappster* or the client herself, providing an avenue to answer emails/calls from other users of the app when they need help and to provide an avenue to insert, edit or delete investments and user data in the database using a user-friendly interface (rather than requiring programmers to interact directly with the database through code). The other *finappster* team working concurrently with *finappster Sigma*, *finappster tau*, has recently developed an interface to insert investments and their related SDG data, but to *finappster Sigma*'s understanding, it is not within *finappster tau*'s scope to develop all the features of the admin support user mentioned above.

The following steps have occurred to achieve part of the scope statement above:

- Upskill on financial industry and *finappster*
- Finished discussing planned scope with client.
- Create a model to display the flow of data within finappster.
- Examined data streams/database by finappster tau, found understanding of their scope.
- Reviewed existing finappster infrastructure in detail, making sure intended scope was not overlooking anything significant.
- With the scope clear, finalized the overall user journey of investment provider, investor, and administrator users. Made use of wireframes and Miro sequence diagrams to make the intended implementation of the project objective clear for the current development team and future teams.
- Collaborated with Leeanna to develop a comprehensive list of all possible user stories that are relevant to this project.

The following steps are required to achieve the rest of the scope statement above:

- Examine, sanitize, model, and document the databases present within the finappster system
- Take a key few of these user stories through the development pipeline, working on the ones with the highest priority first. (Product backlog → Sprint backlog → in development → User Acceptance Tests (UAT) (development team) → UAT (Client) (← Back to a previous step if UAT (Client) fails) → Definition of Done).
- Complete the previous step in each sprint. Currently three sprints are planned (refer to project schedule) but room for a fourth or even more is possible if needed.

Current Sprint Plan

Following the now ending design phase at the time of this proposal's competition, development of some of the core functionality of *finappster Sigma*'s development scope will be completed. While sprint decisions for future sprints that will start after the end of this semester can only be roughly estimated (outlined briefly in the project schedule/WBS), specific user stories and subsequent allocations for Sprint 1 starting within the next couple of weeks can be more concretely outlined.

The Sprint 1 Goal and user stories (with who they are assigned to and the expected dates they will be completed) are outlined below.

Sprint 1 Goal: Make a prototype of a long quiz, where upon competition, the results will be displayed and comparable to existing investments.

Sprint 1 start date: 20/09/21

Sprint 1 end date: 11/10/21

Pre-requisites: None

Comments: This sprint goal for Sprint 1 will be standalone, almost more of a giant unit test than a part of the existing finappster product. This will mean a new, blank React web app that will reference data in the existing finappster databases. This was decided upon by the team so that a concrete base can be formed without being distracted by existing code. Once a functioning standalone product is formed, it will be incorporated into the existing codebase in a later sprint.

Must have **Long Quiz**

As an existing user, I want to be able to rank the 17 SDGs so that I may be able to get a more accurate reading of my values in relation to my investments.

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User story start date: 20/09/21

Estimated user story finish date: 29/09/21

Pre-requisites: None

Assigned to: Chris Stehlin, Jose Santos, John Sangalang, Peter Scandle

Comments: Entire team is assigned to this one, as all the other user stories in this sprint build off this one. This is also likely to be the biggest user story of the sprint, and so will be broken down into tasks.

Must have **Long Quiz**

As an existing user, I want to be able to submit my long quiz results, so that the results will be viewable on my account.



User story start date: 29/09/21

Estimated user story finish date: 4/10/21

Pre-requisites: As an existing user, I want to be able to rank the 17 SDGs so that I may be able to get a more accurate reading on my values in relation to my investments.

Assigned to: Chris Stehlin, Peter Scandle

Comments: Bigger than it looks, this one will require a button that reads an array of SDG data input by the user into the existing database for users, while also storing it in a 5P format as well.

Must have **Quiz Results**

QUIZ RESULTS: As an existing user, I want to be able to view my overall 5p results, so that I may know where my existing investments' values sit.



User story start date: 29/09/21

Estimated user story finish date: 4/10/21

Pre-requisites: As an existing user, I want to be able to rank the 17 SDGs so that I may be able to get a more accurate reading on my values in relation to my investments.

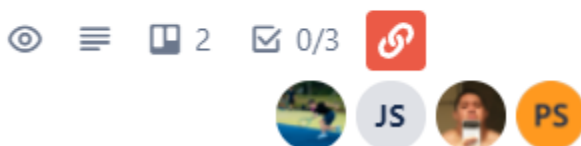
Assigned to: Jose Santos, John Sangalang

Comments: Can be done concurrently with the quiz results submission user story above. This user story will involve fetching the 5P data that was input into the user database in the previous user story and displaying it on a new 'My Values' page.

Dummy data can be used until the data is added to the database in the previous user story.

Must have **Recommendations**

MY VALUES/EXISTING INVESTMENTS PAGE: As an existing user, I want to be able to view how each of my existing investments values weigh up against my quiz values, so that I may see where my existing investments sit against my quiz results.



User story start date: 4/10/21

Estimated user story finish date: 11/10/21

Pre-requisites: All other user stories above

Assigned to: Chris Stehlin, Peter Scandle, Jose Santos, John Sangalang

Comments: Final user story of the sprint, this one involves implementing the scroll view of investments on cards separated across three tabs by investment type. Main new issue to overcome will be reading data from the database developed by tau that stores SDG data of investments. Dummy data to be used if unfinished.

Project Requirements

Functional Requirements

- The investment provider user shall register to advertise their scheme/fund.
- The investment provider shall be able to login to the website.
- The investment provider shall be able to add their scheme/fund.
- The investor user shall register to view scheme/fund information.
- The investor user shall be able to do a long quiz.
- The investor shall be able to drag SDG options into a ranked format in the long quiz.
- The investor user shall be able to do a short quiz.
- The investor user shall be able to redo the long quiz.
- The investor user shall be able to view their quiz results on the 'My Values' page.
- The investor user shall be able to view the specific SDGs for the 5 P's displayed on the 'My Values' page.
- The investor user shall be able to view their existing investments upon navigating to the 'My Values' page.
- The investor user shall be able to view recommended investments upon navigating to the 'My Values' page.
- The investor user shall be able to view specific SDGs for the investment they are viewing on the 'My Values' page.
- The investor user shall be able to view specific information relating to the SDG of a P they are looking at on the 'My Values' page.
- The investor user shall not be able to navigate to the 'My Values' page without completing a quiz first.
- The investor user shall not be able to view the 'My Values' page before doing the short quiz.
- The investor user shall not be able to view the 'My Values' page before doing the long quiz.
- The system shall record a user's data in the database upon said user signing up to the website.
- The system shall record a user's input SDG data upon clicking the submit button on the long quiz.
- The system shall provide the current pricing of a fund provided by an investment provider.
- The investor user shall never be allowed to submit a long quiz result without ranking all 17 SDGs first.
- The investor user shall never be allowed to submit a short quiz result without ranking the 5 Ps first.

Non-Functional Requirements

- All key functionalities shall be accessible within three clicks.
- The system shall display user's quiz result values within three seconds.
- The investor user shall never be allowed to edit recommended investment information.

Regulatory Requirements

- The advisor service, *finappster* shall not provide buying or selling services of investments of any kind.

Key Milestones

Activity	Completion Date	Status
Project Kick-Off	24 th July 2021	Done
Project Proposal Draft Complete	15 th August 2021	Done
User Stories Defined	2 nd September 2021	Done
Final Project Proposal Complete	8 th September 2021	Done
Sprint 1 Development Complete	11 th October 2021	On Track
Mid Project Review	15 th October 2021	On Track
Sprint 2 Development Complete	29 th November 2021	On Track
Sprint 3 Development complete	2 nd Feb 2022	On Track
Final Project Poster Complete	28 th May 2022	On Track
Final Project Presentation	28 th May 2022	On Track
Project Handover Complete	18 th June 2022	On Track

Project Methodology

Agile

Within the Agile methodology, change is expected. As individual sprints are only measured in weeks, there is significantly more flexibility available if the client needs /desires change throughout the project. It also allows for more accurate representations of what a client wants in their project, as they have constant say in how it is developed, iteration by iteration (Kumar & Bhatia, 2012).

Scrum

Scrum is a methodology that implements the framework laid down by Agile. It works by dividing the work required into a series of sprints, and communication is maintained through the sprints using daily stand-up meetings. Change is expected and encouraged but is restricted to only occur generally between sprints. Completing work in sprints allows for constant feedback on the iterating product.

Kanban

Kanban is a popular framework used to implement agile and DevOps software development. It requires real-time communication of capacity and full transparency of work. Each work items are visually posted on the Kanban Board. This methodology focuses on a “just in time” approach and is much more focused around change at any time, rather than Scrum’s more fixed focus on changes only occurring between sprints. Defined roles are also not a requirement in Kanban, unlike Scrum.

Method being employed: Scrumban (Scrum/Kanban mix)

Reasoning

We are considering *Scrumban*, a methodology that is a hybrid mix of *Scrum* and *Kanban*. The mix we will use is closer to Scrum but uses a few key elements from *Kanban*. We are planning this because the development team is more familiar with Scrum but is also interested in employing a few methodology characteristics from Kanban as the client has used them with previous teams and had good levels of success.

Once development starts, a typical scrum setup on Trello will be followed, with sprints, a product backlog, standup meetings, and other standard Scrum features. Our Trello board differs slightly from traditional Scrum though, as it has more columns than a Scrum board would typically have, encompassing the traditional Scrum columns of “Product Backlog”, “Sprint Backlog”, “In Development” and “Development Complete”, but including “Sprint UAT”, “Leeanna UAT” and “Merged and Completed”. This allows for more meaningful, granular progress to be displayed on individual cards as well as giving them the freedom to move around the board’s columns as required.

As for communication and team interaction, elements from both Scrum and Kanban will be employed. Regular status update meetings will occur, but not at the frequency and in the same format as Scrum does (i.e., daily standup meetings), as these will only be held when the team feels it is necessary. Any changes that are made will be added to the bottom of the Product Backlog, and if we are able to get to them within the time and scope of the project will be addressed when required.

As for roles, using the Kanban in Scrumban, the development team has decided not to follow any formal role assignments (i.e., Scrum Masters, Developers, Product Owners) and the team has

decided to all take an equal role in keeping each other on track, unless the need for roles becomes apparent at which point the topic can be revisited.

Approach

- In Person Meetings
 - Best way where possible
 - Facilitates effective communication and collaboration
- Teams
 - Great way to share documents and work together on them with the team
 - Also effectively allows communication with Leeanna
- Discord
 - Allows for effective communication within the team

Project Management Resources

- Trello
- Discord
- Teams
- Notion
- Weekly Meetings

Coding Standards

There are several common coding standards that we will follow in completing this project. These are listed below.

- Review and test code before approving a Pull Request
- Make code as modular as possible
- Every feature and fix must have its own branch
- Variables, functions, and components must be named correctly
- Code must be easily readable and correctly white-spaced
- Components should be placed in separate folders
- Arrow functions are preferred to normal functions
- Have folders with containers and Higher Order Components
- Keep components simple and clear
- Import libraries in the order they are used

Beyond this, the project has an existing structure, with GitHub repositories created by the teams that have previously worked on this project. As these repositories will be used alongside the ones that we are creating, we will follow the existing code style used by the other teams to ensure that the app has consistent, cohesive code throughout.

Skills Analysis

Group	Skill	Chris	John	Jose	Pete	Total
		Score (1-5)				
Databasing	MYSQL/OracleSQL	3	3	3	4	13
	PostGRES	1	4	3	2	10
	MongoDB	3	4	3	3	13
	Firebase FireStore	4	2	2	2	10
Web Technology	JavaScript	3	4	4	2	13
	Node.js	3	4	3	2	12
	React	3	3	4	2	12
	Azure	1	3	3	1	8
	Heroku	3	4	3	3	13
	GitHub / Git	5	5	4	5	19
	HTML/CSS	2	2	4	2	10
Programming Languages	Java	4	4	5	4	17
	C#	1	3	1	2	7
	Python	1	1	2	3	7
	C / C++	2	1	2	2	7
Project Management Tools	Microsoft Project	3	1	2	3	9
	Trello	5	3	5	5	18
	Asana	1	1	1	1	4
Design Tools	Figma	2	2	4	2	12
Personal Skills	Verbal Communication	5	3	3	5	16
	Written Communication	5	3	3	5	16
	Leadership	5	1	2	5	13
	Change Management	4	2	2	5	13
	Learning and Development	4	4	4	4	16
	Project Management	5	2	3	5	15
	Time Management	4	3	3	4	14
finappster Related	Financial Knowledge	3	2	1	3	9

Key Skills Required

Since we are the fifth AUT finappster team, we would need to learn how to collaborate with the current development teams, such as Finappster Tau who are working in tandem with our team for semester 2, 2021. Additionally, we would need to have knowledge in API principles, consuming other sources and being consumed via REST clients. A basic understanding both web application security and filtering in financial data from databases to help us in building out our scope, and lastly an understanding in machine learning for a recommendation system, particularly context-based machine learning.

Appendix

Auckland University of Technology Bachelor of Computer & Information Sciences Research & Development Project

Disclaimer:

Clients should note the general basis upon which the Auckland University of Technology undertakes its student projects on behalf of external sponsors:

While all due care and diligence will be expected to be taken by the students, (acting in software development, research, or other IT professional capacities), and the Auckland University of Technology, and student efforts will be supervised by experienced AUT lecturers, it must be recognised that these projects are undertaken during student instruction. There is therefore no guarantee that students will succeed in their efforts.



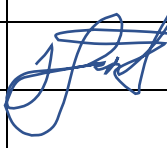

This inherently means that the client assumes a degree of risk. This is part of an arrangement, which is intended to be of mutual benefit. On completion of the project, it is hoped that the client will receive a professionally documented and soundly constructed working software application, some part thereof, or other appropriate set of IT artefacts, while the students are exposed to live external environments and problems, in a realistic project and customer context.

In consequence of the above, the students, acting in their assigned professional capacities and the Auckland University of Technology, disclaim responsibility and offer no warranty in respect of the “technology solution” or services delivered, (e.g., a “software application” and its associated documentation), both in relation to their use and results from their use.

Team Contract

Project Name: *finappster* Sigma

Project Team Members Names and Sign-off:

Name	Sign-off on Team Contract
Chris Stehlin	
John Sangalang	
Jose Santos	
Pete Scandle	

Code of Conduct: As a project team, we will:

- Treat all members of the team with respect.
- All work will be distributed fairly and completed to a high standard.
- Meet our assigned action items within the allotted timeframe.
- Strive to meet any reasonable requests for assistance made by members.
- See the project through to completion.

Participation: We will:

- Provide an environment where members can contribute fully to discussions.
- Have one discussion at a time.
- Show a willingness to listen to members ideas and provide only constructive feedback.
- Submit work within an agreed timeframe
- Encourage diversity of thought

Communication: We will:

- Inform the team ahead of time if unable to attend a meeting.
- Utilize a group chat to communicate.
- Honor meeting timeframes.
- Keep discussions on track.
- Present ideas clearly and concisely

Problem Solving: We will:

- Fully explore all ideas to resolve problems.
- Work together as a team to overcome obstacles.
- Work to the strengths of each member.
- Strive to build on each other's ideas.
- Hold each other accountable for meeting standards.

Meeting Guidelines: We will:

- Meet weekly at 1000 Friday, with alternate meetings at 1300 on Tuesdays if required.
- We will endeavor to keep meetings as brief as possible while maintaining the highest possible standard of excellence.
- Minutes will be kept utilizing the templates provided and will have an agenda set before they commence.

Project Charter

Prepared by Pete Scandle

Project Start Date: 12 July 2021

Projected Finish Date: April 2022

Project Objectives

To create a platform to allow investors to advertise investment funds to end user investors, with a strong focus on the ethical values of companies within the fund.

Budget Information:

For the completion of this project the Research & Development (R&D) team at AUT have allocated \$200,000.

Project Timeline:

The first phase of this project is expected to complete at the conclusion of the second semester of 2021, beginning on 12 July 2021 and ending on 5 November 2021. Following this, the second phase will span the first semester of 2022, beginning on 28 February 2022 and concluding on 23 June 2022.

Roles & Responsibilities:

Within this team all members will take an equal share of responsibility. Thus, all members are acting as Software Developers, liaising with the client and mentor together to ensure all requirements are fulfilled to the best of our ability.

Main Project Success Criteria

- Prototype functionality is completed on time.
- The project will not exceed the budget allocated by the school.
- Users will be able to complete both a short quiz and a long quiz to determine their ethical beliefs.
- Once a quiz has been completed, users will be able to see investment options that align with their ethical beliefs.
- With advice from her stakeholders, the Client will approve the project artifacts.

Approach:

- Within this project, we will follow a mixture of the Scrum and Kanban (Scrum-ban) methodologies, utilizing three-week sprints.
- Feedback will be sought from key stakeholders on a weekly basis.
- We will identify the most appropriate quiz method to gain users' ethical values
- We will identify the most appropriate recommender system to utilize .
- Testing will be completed initially by developers, and once they are satisfied the Client will test before a feature is approved.
- Stakeholders may raise an issue using the Issue Log, located on the shared Microsoft Team.
- Project changes may be made by completing a Change Request Form, located on the shared Microsoft Team, then emailing the completed form to the development team. The impact of such changes should be carefully weighed as they will likely affect scope, cost and time requirements.

Change Control

Please refer to the Risk Register attached

Issue Management:

Please refer to the Issue Log attached

Stakeholder Register for *finappster Sigma*

Name	Position	Internal/External	Project Role	Contact Information
Chris Stehlin	Team member	Internal	Team Member	prq5006@autuni.ac.nz
John Sangalang	Team member	Internal	Team Member	jsj6212@autuni.ac.nz
Jose Santos	Team member	Internal	Team Member	sff4900@autuni.ac.nz
Pete Scandle	Team Member	Internal	Team Member	vzp7444@autuni.ac.nz
Badger Dowdeswell	Mentor	Internal	Mentor	barry.dowdeswell@aut.ac.nz
Ramesh Lal	Lecturer	External	Paper Leader	ramesh.lal@aut.ac.nz
Leeanna Kohn-Hardy	Client	External	Project Sponsor	leeanna.kohn-hardy@finappster.co.nz
Investors	User	External	User	-
Investment Providers	User	External	User	-
Admin Support	User	External	User	-
<i>finappster tau</i>	Concurrent finappster team	Internal	Developer	-

Stakeholder Management Strategy for *finappster Sigma*

Prepared by Pete for *finappster Sigma*

Name	Power / Interest	Engagement Level	Potential Management Strategies
Chris Stehlin	High / High	Leading	Chris, John, Jose and Pete form the development team working on <i>finappster Sigma</i> . They are all highly motivated, looking to create the best product possible while having an opportunity to increase their individual skills with the platforms utilised.
John Sangalang	High / High	Leading	
Jose Santos	High / High	Leading	
Pete Scandle	High / High	Leading	
Barry Dowdeswell	High / High	Supportive	Barry is the mentor for <i>finappster Sigma</i> . He is very available and is contactable via Teams or email. He wants the project to succeed and is willing to take time out of his week as required to ensure this happens.
Ramesh Lal	Low / High	Supportive	Ramesh wants us to succeed and meet the academic requirements necessary for the course. He is available to be contacted via email, but as he is very busy his response may not be immediate.
Leeanna Kohn-Hardy	High / High	Supportive	Leeanna is very supportive of this project. She is freely available via Teams or email to ask any questions or clarify any information as required. We meet weekly with her on a Friday to share progress and update her as required.
Investors	Low / Low	User	As this project is a preliminary implementation of the feature, both investors and investment providers will be consulted through the design and development process. This feature will not be taken live in this iteration however, so direct contact will not be required.

Work Breakdown Structure

1.0 Planning Phase

- 1.1 Team Contract
- 1.2 Project Purpose
- 1.3 Opportunity, Problem or Need
- 1.4 Project Justification
- 1.5 Project Objective
- 1.6 Project Cost
- 1.7 Project Charter
- 1.8 Stakeholder Register
- 1.9 Stakeholder Management Strategy
- 1.10 Risk Register
- 1.11 Issue Register
- 1.12 Milestone Report
- 1.13 Project Methodology
- 1.14 Quality Assurance Plan
- 1.15 Requirements Document
- 1.16 Skills Register
- 1.17 Coding Standards
- 1.18 Skills Analysis
- 1.19 Training Plan
- 1.20 Communication Management Plan
- 1.21 Scope Statement
- 1.22 WBS
- 1.23 Project Schedule
- 1.24 Change Management Plan
- 1.25 Financial industry upskilling
- 1.26 Explore KiwiSaver user journey
- 1.27 Explore selling a product user journey
- 1.28 Explore administration support user journey

2.0 Analysis

- 2.1 Refine and translate KiwiSaver user journey into finappster
- 2.2 Refine and translate selling a product user journey into finappster
- 2.3 Refine and translate admin support user journey into finappster
- 2.4 Project Purpose refinement
- 2.5 Project Objective refinement
- 2.6 Merge of user journeys and discussion
- 2.7 Discussion of merged journeys with client to refine further
- 2.8 Update Risk Register
- 2.9 Update Issue Register
- 2.10 Research and understanding on previous finappster teams work and how it fits in with finappster Sigma's scope
- 2.11 Feedback and meeting with finappster tau

3.0 Design

- 3.1 Build sequence diagram to cover design aspects of finappster Sigma and future teams (Investor, Investment Provider, Admin Support overall pathways without too many specifics)
- 3.2 Build more in-depth sequence diagrams to cover specific development design scope for finappster Sigma (Investor user focus, detailed quiz design and design of interface to get user's preferred values matched with similar investments available in the market based off quiz results)
- 3.3 Figma wireframes of currently understood expected development scope of finappster Sigma
- 3.4 Discussion and feedback with client on designs/wireframes
- 3.5 Adjustments made to diagrams based on client and family/friend feedback on development scope design
- 3.6 Consensus reached on development scope with client
- 3.7 User story construction with client on Trello
- 3.8 User story refinement, acceptance test development
- 3.9 User story confirmation with client, Sprint 1 goal, user story load established
- 3.10 Planning poker, assignment of user stories to dev team members
- 3.11 Final proposal refinement, signoff from client/mentor, preparation for development

4.0 Implementation

- 4.1 React, Machine Learning, Django upskilling
- 4.2 Development of features in Sprint 1 (Must have features being short and long quiz design based off SDG data that is input into a database, adding the data in a 5P format in the database, and then fetching and the display of this data. Also incorporating the 17 SDG data of user's existing investments/funds in an existing database implemented by finappster tau into the finappster front-end, separated by type of investment).
- 4.3 Testing of must have features in Sprint 1, first between finappster Sigma team members, then through the client before being moved to the definition of done.
- 4.4 Development of lower priority features added to Sprint 1 backlog. Includes dashboard 5P GUI development, KiwiSaver help page implementation and FAQ improvement.
- 4.5 Same testing procedures as 4.3.
- 4.6 Mid project review documentation preparation
- 4.7 Mid project review presentation (somewhere this week)
- 4.8 Sprint 1 end client meeting, sprint 2 discussion
- 4.9 Sprint 1 retrospective meeting
- 4.10 Short break before development resumes over summer holidays
- 4.11 Further React, Machine Learning, Django upskilling (if needed)
- 4.12 Development of features in Sprint 2 (Must have features being the recommender system that will compare values of the 5Ps for funds/investments in the database to that of the user's personal 5P data and displaying them based on similarity descending, editing, and connecting the existing finappster screens to incorporate these and the features in sprint 1 into a smooth user-friendly process).
- 4.13 Same testing procedures as 4.3, but for Sprint 2.
- 4.14 Development of lower priority features added to Sprint 2 backlog. Any left-over features from Sprint 1.

- 4.15 Same testing procedures as 4.3, but for Sprint 2.
- 4.16 Sprint 2 end client meeting, sprint 3 discussion
- 4.17 Sprint 2 retrospective meeting
- 4.18 Christmas/New Year's Break
- 4.19 Project revision/catch up, Sprint 3 preparation, possible meeting with client
- 4.20 Development of features in Sprint 3 (Must have features being proper user friendly implementation of elements developed in Sprints 1/2 into a local version of the app.finappster web app, any missed features from Sprint 2)
- 4.21 Testing of must priority features in Sprint 3, first between finappster Sigma team members, then through the client before being moved to the definition of done.
- 4.22 Development of any remaining features in the sprint 3/product backlog.
- 4.23 Testing of leftover features in Sprint 3, first between finappster Sigma team members, then through the client before being moved to the definition of done.
- 4.24 Sprint 3 end client meeting, discussion if any further sprints are needed
- 4.25 Sprint 3 retrospective meeting
- 4.26 Room for further sprints and handover

5.0 Deployment

5.1 Live deployment of features is not within the agreed upon scope of finappster Sigma. Features will be developed and in the finappster GitHub, which will be made available to the client, with the relevant final product on the relevant branches being given to the client for future team use.

Estimated Costs

Our aim is to minimize the cost to the client. Where possible we will use free or subsidized resources. In terms of human resources, the development team are all AUT BCIS students and will be paid with the average salary of a junior software developer. The team mentor will be billed at the cost of one academic hour, for an estimated 300 hours over the course of the project. Mentors' hour will include attending development team meetings, marking draft work, and other requirements that allows the team to function.

Software resources are all setup from previous finappster teams and has provided our team a strong foundation that minimizes costs. We will be utilizing software such as Trello, Discord, GitHub Education, Microsoft Team, Notion, Miro, Figma, and Heroku for hosting databases & website application. Most of which are free to use, except for Heroku, to help the development team progress the project.

DESCRIPTION	QUANTITY	COST	TOTAL
Team Mentor	300	\$165	\$49,500
Junior Software Developer	300	\$45	\$54,000
Heroku	12 months	\$25	\$300
Client	300	\$0	\$0
Sub Total			\$103,800*
Total incl. GST			\$119,370

**As the Mentor costs are covered by AUT and the rest of the team are students, there is no cost to the client.*

Assumptions

Our human resource cost estimation is purely speculative and based on the information made available to us through the lectures.

Upskilling Plan

For the scope of our project, our team has identified areas in our knowledge that needs attention to be able to deliver the project efficiently and without delays during times of development. This document's purpose is to identify the appropriate training strategies and activities required to achieve the desired learning outcome during the implementation of the scope of our project.

As our project involves our team being able to implement a quiz with a recommendation engine based on their values and where it ranks in the 5P's, designing and possibly prototyping adding the investment provider as a user to our website, our current training plan will be based of the requirements gathered through all workshops and meetings thus far.

Objectives

To be an effective training plan, our team should meet the following objectives:

- Have knowledge in investment providers, investment funds, schemes, and general finances to have a better understanding at what finappster is trying to achieve and get a shared understanding with our client.
- Since we are working in tandem with finappster tau, our team must understand their work and what they can deliver as most of our project is reliant on the data that they may be able to produce.
- Study the architecture of the existing code to help us plan out how to integrate our prototype within in
- Ensure an appropriate level of skill is reached to perform our roles

Method

Our training plan will involve the following procedures:

- Reverse engineering existing code
- Using online resources for checking code documentation and tutorials
- Writing small test codes to practice our knowledge before proceeding with the project plan
- Asking our mentor and/or our client for anything we're unsure about.

After analysing the each of our strengths and weaknesses in our skills analysis and identifying which technologies we need to learn to accomplish our project, it is crucial that we follow out the above stated procedures before we start the first sprint or before our development phase in our project plan to develop each user story efficiently and mitigate making mistakes or delaying the project.

Change Management Plan

For every project, there are situations that require changes to the current plan. To ensure success in transition or a pivot to the new revised changes this document defines activities and roles for managing and controlling the changes made when executing our project. This document will also outline how these changes will be communicated to be established and the method required to initiate the necessary changes and review of the result of the changes.

Change Request

To actualize these changes, we developed a process for effectively submitting, evaluating, and authorizing the changes while having the ability to manage and control the requests. Every major change will be requested in the form of a Change Request Form as it is important to manage the information that we collect throughout the project and that it stays consistent.

This section highlights the necessary procedures for executing the Change Request:

- **Generation of the Change Request:** The Change Request is created through completion of the given templates.
- **Entry of the Change Request into Issue Log:** As the introduction to a change to the project will effectively result in deprioritization with the current tasks to mitigate the chance of extending the current project timeline. Because of this, the Change Requests must be registered into the issue log until the current plan is re-evaluated.
- **Evaluating Change Request:** Each member that is directly affected by the change requested will have to complete a review of the suggested change(s) and decide the scope of the change. This procedure will allow the team to assess the feasibility of the requested change based on its size and duration to implement. If external stakeholders are affected, then they will also be required to be present.
- **Authorizing Change Request:** All Change Requests made will always be approved by the manager(s) of the project.
- **Implementing Change Request:** Once the Change Request has been approved by the manager(s), the initiation process shall commence, and the issue status noted in the issue log is to be updated to resolved.

Change Request Review

When a Change Request is submitted, the project team must analyse the change. The feasibility of said Change Request will be assessed on size, scope, and the priority of the change to be implemented. Each member will be required to debate and confirm whether the change shall be kept. Large scale Change Requests require more attention and must include any affected stakeholders in the processes assessment. The prioritization of changes will also affect the meticulousness of each debate among members as tasks may be required to be put out of the current backlog or to extend the project timeline.

Change Communication

The plan to debate the Change Request is implemented through the first evaluation phase. Feedback from all affected parties from the change is required and must be completed at the required intervals given by the project manager and the review team. As the change requested commences, any important stakeholder affected by the transition must be updated on the status and the current progression of the change requested.

Change Implementation Review

A devised plan will be constructed by the project manager in cooperation with the project team members and any stakeholders affected by the changes. However, if the request submitted has been declined, the stakeholders that are affected must be informed as to why that decision was concluded.

Change Result Review

Upon completion of the change requested, a review for the work produced must be reviewed. The review will be completed by the project manager(s) by using any resources gathered from meetings with project team members, meetings with important stakeholders regarding the Change Request's plan. This procedure initiates a final assessment to guarantee that the changes made have been implemented correctly and that the task given have been completed. Once the Change Request has been completed, the project manager will close the request and update the issue registered on the issue log as completed.

Change Request Form

Project Name:

Date Request Submitted:

Title of Change Request:

Change Order Number:

Submitted By:

Status:

Change Category:

- ☐ Scope
- ☐ Schedule
- ☐ Cost
- ☐ Technology
- ☐ Other

Quality Assurance Plan

Our Quality Assurance (QA) plan's aim is to keep the quality of the project that we are going to deliver at a specified level and to focus on each stage of development to make sure that there are no issues present. This document will also help our team ensure that the product delivered is fit for its purpose and enables us to allow continuous improvement and success throughout development of our project. An effective Quality Assurance Plan will also help us mitigate or reduce chance of costly mistakes and risks.

Quality Assurance Procedures for Project Phases

To ensure our team maintains or improves the quality of the work that we produce, we must follow these following procedures during these project phases.

Planning

For the planning phase, it is key that we use a consistent template for all documents that we make. Because we are the fifth team to take over this project, it may be useful to use templates that previous teams have used before to stay consistent to what the client is used to. We must also refer to the proposal guideline provided to us on blackboard for any documents we need to make for the project proposal.

To create this proposal and to ensure its quality, we must constantly have feedback from our mentor during the creation of it while also having multiple meetings with our client to gather the necessary information needed to identify the current state of the project and what is needed for further development for us to assess its feasibility for our project.

A checklist may be required to keep track of all the documents completed and ones that need attention to.

Analysis

Upon the completion of the planning phase, our primary task will be to take the project goals gathered from the previous phase and to convert them into a defined system function that our client intends to integrate within the app. Activities involved in this phase include:

- Gathering and creating high-level user stories through multiple meetings
 - To ensure the quality of our work, this procedure is one of the most crucial part as it sets a guideline that the system needs to meet in order to be successful.
- Conducting usability tests to refine any early prototyped design we have created to help us identify useful business requirements

Design

In the design phase, we start taking the business requirements gathered and begin planning out the architecture for the system that we will develop. This includes doing the following procedures:

- Designing the IT infrastructure which includes:
 - Creating an ERD diagram and/or identifying the current database for the current User and Admin schemas.
 - Creating a UML diagram based on the chosen design pattern that our team has chosen
 - Creating wireframes for user interfaces along with a user navigation diagram.

- Further refining the business requirements gathered and creating a product backlog which includes said business requirements.
 - These requirements will be sorted by consensus by estimating how long each task will take and how difficult it may be. These will be recognized through conducting a planning poker to assign story points to each user story.
 - Each user story must also have a user acceptance test to identify when said user story is done. This is defined by the product owner with the guidance of the client.

In the design phase, it is important that the IT infrastructure should be made carefully with a lot of thought into to have a solid foundation to avoid any incoming problems in the future like redesigning the systems architecture during developing which is a risk to the project timeline and cost.

Development

- This phase is where we take all documents from previous phases and transfer it the system. This phase includes the following activities:
- Development of the IT infrastructure
- Following the coding guideline to keep code consistent
 - This helps reduce the potential risk for current or future teams when a problem arises, and the code is hard to understand; especially when the style/format varies from each file.
- Following the project timeline and prioritizing identified user stories for each sprint
- Conducting code reviews during and upon completion of sprints to ensure coding standards are being maintained during the development of each user story.
- Following the user acceptance test as a guideline of what needs to be completed for the user story being developed.
-

Testing

During the testing phase, all pieces of code developed must be deployed in a testing environment by a tester to check the system for errors, bugs, and issues that may not verify a user story from being completed as what was expected. This requires the following procedures to be conducted:

- Writing and executing test cases for each user story completed.
- Conducting usability testing with our client to ensure that the client is happy with the results for each deliverable. This may also be tested with a public user if the client allows (this ensures that users that will be using this product will be happy with the results).

This phase is a very critical part of the software development life cycle as it is, if not, the last step before deployment so carefully conducted unit testing is critical to ensure the quality of the software delivered.

Risk Register

Risk description	Date raised/ re-reviewed	Potential consequences	Inherent risk (before controls) 1= Low, 5= High			Safety controls	Assurance	Residual risk (RR) (remaining risk after controls have been applied)			Risk owner
			Likelihood (L)1-5	Consequence (C)1-5	Inherent risk (L x C)			Likelihood (L)1-5	Consequence (C)1-5	Residual risk (L x C)	
Coronavirus, effect on family, friends, self	20/08/21	Delays in completion of tasks by staff due to possible sickness.	3	5	15	Get vaccinated, stay home as much as possible throughout lockdown.	Legal requirement to stay home except for absolute necessities.	2	4	8	All project staff
General sickness effect on family, friends, self	20/08/21	Delays in completion of tasks by staff due to possible sickness.	2	3	6	Stay home as much as possible throughout lockdown.	Legal requirement to stay home except for absolute necessities.	1	2	2	All project staff
Project schedule not clearly defined	20/08/21	Project plan not clear and/or outlined scope not well	4	5	20	Clear project plan, well defined scope, discuss with dev team exactly how we will	Team discussions on this matter, development of project plan.	1	5	5	All project staff

		defined, leading to lower quality product delivered to client or incomplete project.				design features we will develop.					
Internet connection problems	20/08/21	As all class work for the past few weeks and for the foreseeable future will need to be done at home, having an internet connection is vital to passing.	2	5	10	Ensure your internet package is suitable, change plans to another one if needed.	Staff to check in on other project staff that don't make it to meetings or have been out of touch.	1	5	5	All project staff
Equipment needed for study stops working or is unavailable	20/08/21	As all class work for the past few weeks and for the	2	5	10	AUT may offer the laptop hire service again. Outside of that, take care to look	Staff to check in on other project staff that don't make it to meetings or	1	5	5	All project staff

		foreseeable future will need to be done at home, having a laptop/desktop is vital to participating in this project (and any other coursework).				after your devices at home so they don't break.	have been out of touch.				
Can't access shared Microsoft Teams.	20/08/21	Delays in completion of assigned project duties for unknown amounts of time therefore deadlines are not met.	3	2	6	Team members to notify the group if they can't access teams' software suddenly.	Staff to mention this as soon as possible so other staff can assist.	1	5	5	All project staff

Issue Log

Issue #	Issue Description	Priority	Severity	Reported By	Assigned To	Date Reported	Resolution Date	Status:	Comments
1	Coronavirus Lockdown L4	High	High	Chris Stehlin	All	18/08/21	N/A	Open	No cases amongst project team, but we're all in level 4 lockdown until the government indicates otherwise.
2	Partially missed meeting – Peter needed to have his covid test	Low	Low	Peter Scandle	Peter Scandle	20/08/21	20/08/21	Closed	Peter had to have his covid test during a debrief meeting with our mentor. Team caught him up on what he missed.
3	Jose Santos Technical issues	Low	Low	Jose Santos	Jose Santos	19/08/21	N/A	Open	Jose's PC broke earlier in the semester and his laptop is having some memory issues. It's managing for now, but something to keep an eye on.
4	Misunderstanding of expected project proposal delivery timeline	High	High	All	All	18/08/21	N/A	Open	finappster Sigma delivered a draft proposal for their week 6 presentation, but it was supposed to be a final version. The team is working quickly to have a final version ready in the coming weeks, as well as more clearly defined scope.
5	Uncertainty of finappster tau data usability	High	High	Chris Stehlin	All	3/09/21	N/A	Open	finappster tau's data is a factor in delivering finappster Sigma's development scope. It's not unworkable if the data from tau can't be used, but depending on how they go will affect certain design directions on SDG data testing.

