1 Sprint 1 2024-10-16 to 2024-10-23

1.1 Overview
- Get to know each other as a team: our backgrounds and skills
- Generate ideas for a Serious Game to develop as part of the course
- Prepare for first customer meeting and presentation of these ideas

1.2 Review
- Identified which members of the team were likely to play a more significant role in writing the code and which are more likely to be involved in process/documentation
- Succeeded in generating multiple initial ideas and documenting the outline of these ready for presentation to the customer
- Got feedback from customer on those ideas: guided to focus on two and develop in more detail

1.3 Meeting minutes
1.3.1 Meeting – Team Familiarisation and Brainstorming

The team introduced each other, sharing backgrounds, interests and skills with a view to identifying likely roles within the team. This was done via a Whiteboard with the output shown in Figure 1 below.
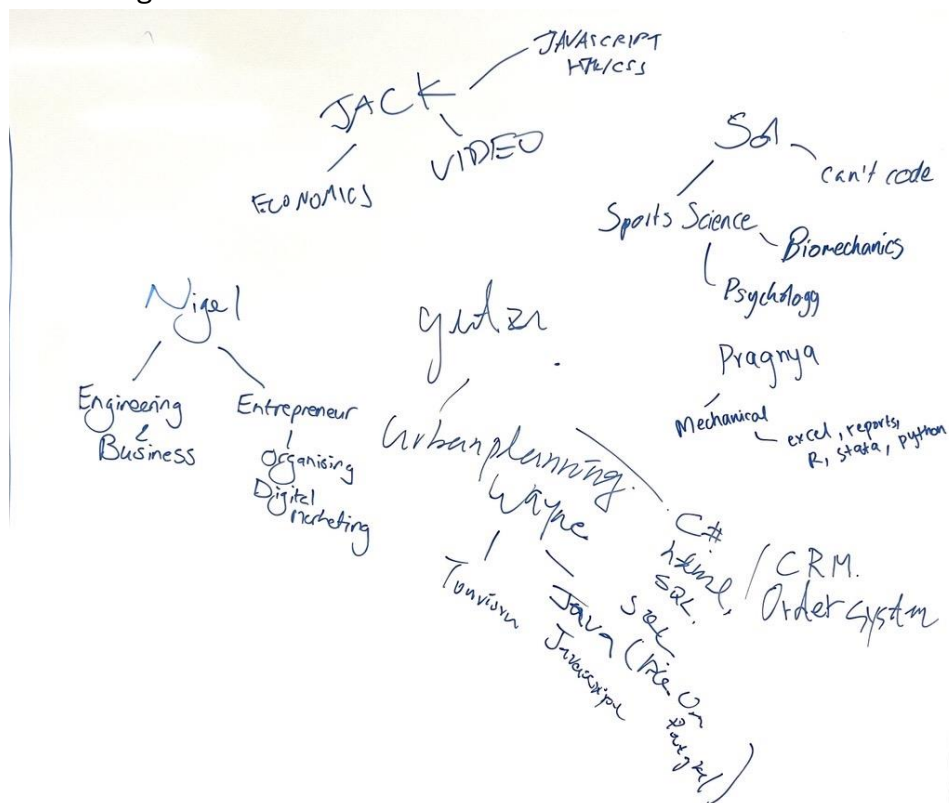
Figure 1: individual experience and skills

Wei-in and Yi-tzu were identified as likely candidates for development roles, with Jack a strong candidate for front-end and user-design work. Nigel facilitated the session and offered to act as potential product leader or Scrum Master. Sol expressed his interest in developing his coding skills by pair programming with one of the more experienced developers.

We then moved on to sharing potential ideas, drawing on the work we had done during CW1. Again this was done on the whiteboard with output in Figure 2 below:
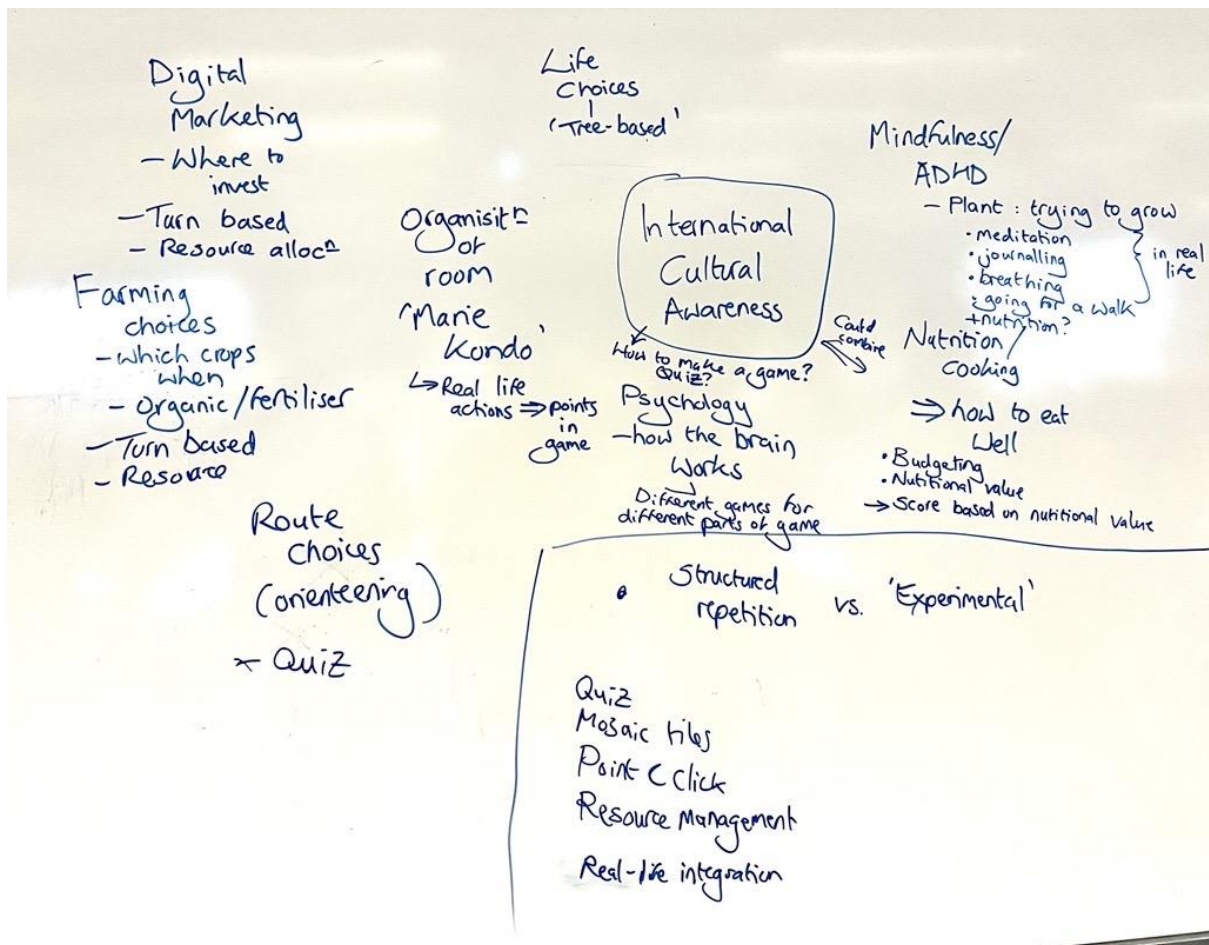

Figure 2: ideas for a Serious Game

The team agreed to proceed with three ideas:

1. A quiz-like app focused on developing cultural awareness amongst players
2. A marketing game designed to improve awareness of strategic issues in the marketing of digital businesses
3. A game focused on developing users' mindfulness through gamified and guided activities

It was agreed that a PowerPoint document would be prepared to share these ideas with the customer, with champions for each idea leading on each product:

- Cultural Awareness – Sol & Yi-Tzu
- Mindfulness – Jack & Pragnya
- Marketing – Nigel

1.6 Product documents
1.6.1 Customer meeting and analysis

At the conclusion of the week's Sprint, the presentation was shared with the Customer (see Figures 3-7 below) who showed their appreciation for the work done and asked that we focus on two of the ideas to flesh out further and present back the following week

Figure 3: Mental Health game concept

Cultural Education

- Player travels to different countries/cities.

- Player learns about the country, guided by the 'Oracle' (could be an explorer or local) – facts, culture, food, etc.
  Stimulate people's enthusiasm for going there.
  Help users plan trips or decide travel destinations.

- Player plays quiz for a country, if they complete the quiz they will get a 'souvenir'.

- Looks - simple, recognizable features for each area – landmarks, architecture, landscape

Figure 4 – Cultural Education Game

Marketing Simulation for Digital Business

Turn-based competitive **resource management** game

Text-based interface (with charts?) adopting aspects of Google Ad Manager/Google Analytics etc.

Allocate budgets across activities (paid search, social, TV, SEO, discounts ...)

Different activities have different profiles:

- How **trackable** they are: can we see what website/app traffic they are driving directly (or have to infer?)

- **One-off, up-front** costs vs. **variable** costs

- **Short- vs. long-term impact** on sales

Oracle suggests things to consider and try

Results of choices (and that of competitors) determine max budget for next round

As budgets grow/time passes **new activities** become available

Profiles of activities **shift over time** as consumer habits change

Designed to teach about **marketing mix** & measurement

Winning = Getting the highest (Sales less Marketing Costs) over game period

Figure 5 – Marketing Strategy Game

Different game mechanics

- Resource allocation
  - Players learn how to juggle trade-offs in an analog to real-world situation
- Quiz
  - Players' knowledge is tested (and improved) through (multiple choice?) quiz
- Activity reward
  - Players earn points for performing (real world) actions. Points may translate into events in the game (e.g. growing a plant)
- (Any more??)
- Multi-mechanic
  - Incorporate multiple styles of game mechanics

Figure 6 – Variety of Game Mechanics

Area	Brief description	Serious outcome	Main mechanic
Mental health	Players are encouraged to undertake real-life mindfulness activities such as breathing, meditation, journaling, being in nature and are rewarded in-game with the development of a plant/tree/forest as they undertake them	Players perform more mindful activities in their lives	Activity reward/gamification
Cultural awareness	Players are exposed to different cultural aspects of different countries and must demonstrate that they have understood and learnt them – interactive elements such as cooking, talking to NPCs, learning about famous places	Players learn about different cultures	Quiz/simulation
Healthy eating	Players have a budget and must choose what food items to purchase. Different options have different nutritional values. Players must choose carefully to ensure they're balancing a range of nutritional goals.	Players learn about health – eating choices	Resource allocation
Digital marketing	Players must decide how to spend their budget. Different choices have different payback profiles and different levels of (direct) measurability. Play vs other teams over several rounds to see who gets most revenue and profit after marketing costs	Players learn about the trade-offs of different marketing channels and their measurement	Resource allocation
Code to adventure	In an adventure style game, players will need to write a python script to perform tasks like move, jump, fight enemies, rescue captives and reach the at the top level.	Players learn to write python scripts	Activity reward/gamification

Figure 7 - Summary of Game Ideas

We agreed as a team to progress with all three ideas, then meet and select the two that we collectively liked the most to share at the following Customer meeting.

2 Sprint 2 2024-10-23 to 2024-10-30

2.1 Overview
- Objectives of this sprint were to
    - Develop prototypes of the three selected ideas to flesh out presentation and game mechanics
    - Select two of the three ideas for presentation to the customer for feedback

2.2 Review
- Prototypes of three different games were developed using different prototyping tools
- Following a meeting of the team, two of these were selected to present to the customer by a process of voting, with the Marketing game idea being dropped
- Following the customer meeting, the Mindfulness game was selected for development

2.3 Meeting minutes

2.3.1 Meeting – Post Customer Review Planning – 2024-10-23
- Attendees: Jack, Nigel, Sol, Pragnya, Yi-tzu, Wei-en
- Following the customer meeting, we met as a team to discuss the feedback and decide on next steps
- Develop all three ideas to next level, using mockups (Canva/Balsamiq …)

2.3.2 Meeting – Review mockups – 2024-10-29
- Attendees (in person): Pragnya, Nigel, Sol
- Attendees (remote): Jack, Wei-en, Yi-tzu
- Reviewed all three ideas from the prototypes developed
    - [Marketing game prototype](#)
    - [Travel game prototypes](#)
    - [Mindfulness game prototype](#)
- Decided not to present the Marketing game idea following team poll
    - Meeting poll in here: [Nigel Whiteoak: Scheduled a meeting](#)

2.6 Product documents
2.6.1 Customer meeting – 2024-10-30 and analysis

Summary

The two selected ideas (Quiz-based travel game and Gamified Mindfulness app) were presented to the customer
Following a short discussion, it was decided that we would proceed with the mindfulness app idea.

Questions were raised about the limitations of self-reporting in this field and the opportunities for integration of e.g. sleep data

It was emphasised that, given the limited timescales, the objective was to develop as far as possible within that timescale, not to build a fully-featured gamified app.

Attendees:

Nigel, Jack, Yi-tzu, Pragnya, Wei-en, Sol

Project Decision: Mindfulness Game vs Cultural Travel Game

- Team reviewed two game concepts but decided to proceed with Mindfulness game
- Key decision factors:
    - More unusual concept
    - Strong educational aspect through self-exploration
    - Team shows more positive sentiment towards this direction
    - Significant prior thought/planning evident

Mindfulness Game Structure

- Garden metaphor for user progression
- 3 distinct pathways users can choose from (can select multiple)
- Features include:
    - Breathing exercises with incremental duration
    - Daily actions tracking
    - Journaling capabilities
    - Positive affirmations
    - Progress tracking mechanisms

Engagement Strategy

- Design progression from casual to regular engagement
- Acts as companion app for users
- Self-reporting considerations:
    - Discussion of whether self-reporting alone is sufficient
    - Potential for additional data sources (sleep patterns, heart rate/HRV)
    - Acknowledgment of psychological self-reporting limitations

Alternative Concept: Cultural Travel Game

- Game mechanics:
    - Users move around virtual world
    - Learn about different locations
    - Educational content covers culture, locations, food, etiquette
    - Quiz-based progression

o Rewards through collectible souvenirs
- Key challenge identified:
    o Need for global integration to encourage information retention
    o Risk of becoming "conventional game" without proper feedback loops

Technical Implementation Notes

- Development timeline extends to end of year
- Realistic approach to functionality scope
- Understanding that full functionality isn't required - deliver what's achievable within timeframe

2.6.8 User interface design
Prototypes developed for three initial ideas to highlight interactions/game outlines.

A selection of the prototyping screens is shown below in figures 8-13: these are not comprehensive. See links above for access to full prototypes.

Marketing Game:

Decisions

Your sales for the prior period were $12,345,678 and grew at 45%.

New choices added with each round as the company grows and new opportunities are opened up.

The board are impressed with your ability to drive growth and agree to increase your budget this next period to $1,234,567

Your maximum budget for this period is $1,234,567. Choose how to spend your budget carefully. Remember, that you don't have to spend all of your budget and that you are judged ultimately on the revenue you generate less the marketing costs you incur

Category		Description
Paid search		Pay for sponsored results against user searches. Tends to drive results quickly, even at low spend levels but long-term effects more limited unless you pay again.
Organic search		Invest in activities to improve how you rank naturally in the search engines. Hard to predict how effective this might be and when effects might come but tends to be long-lasting when it delivers
Paid social		Pay for ads on the social platforms. Good balance of brand-building and direct results, but can be expensive
Organic social		Post on your social media accounts. Your costs are determined by the quality and frequency of your posts
Email		Run campaigns to get press activity. Can be good for brand-building and help with your organic search rankings but campaigns not guaranteed to be a success.
PR		Sponsor influencers in your niche. Can help drive sales and build brand, even at small scale but sometimes can be hit-and-miss.
Influencers		Run tests on your website/app to improve the rate at which visitors convert into sales. The more visitors you have, the quicker you'll see results.
Conversion rate optimisation		Offer selective discounts to customers. Define these in your discounts console
Discounts		Hard to do effectively with low spend but really good for building brand if you have the budget. Hard to track the direct impact on visits and sales.
TV/video advertising		Needs a minimum spend to do effectively but can be good at driving sales with some brand impact. Hard to track visitors but possible to estimate sales impact by deliberately not sending to a sample of potential recipients.
Direct mail		Pay other websites to send you visitors and reward them based on the number of orders that they generate.
Affiliates		Measure the unprompted and prompted brand awareness of yourself vs. your competitors. Fixed cost of £500 per company. Select companies in the Brand Survey page
Brand survey		Estimates of the number of visits that your competitors are getting and the mix of traffic to their websites. Fixed cost of £1,000 per competitor. Select competitors in the Market Data console
Market data		Improve the website experience so that customers' basket-size grows, meaning each order is worth more to you.
On-site merchandising		

TOTAL spend   £ -------

Budget   £ -------

Surplus   £ -------

Submit Decisions

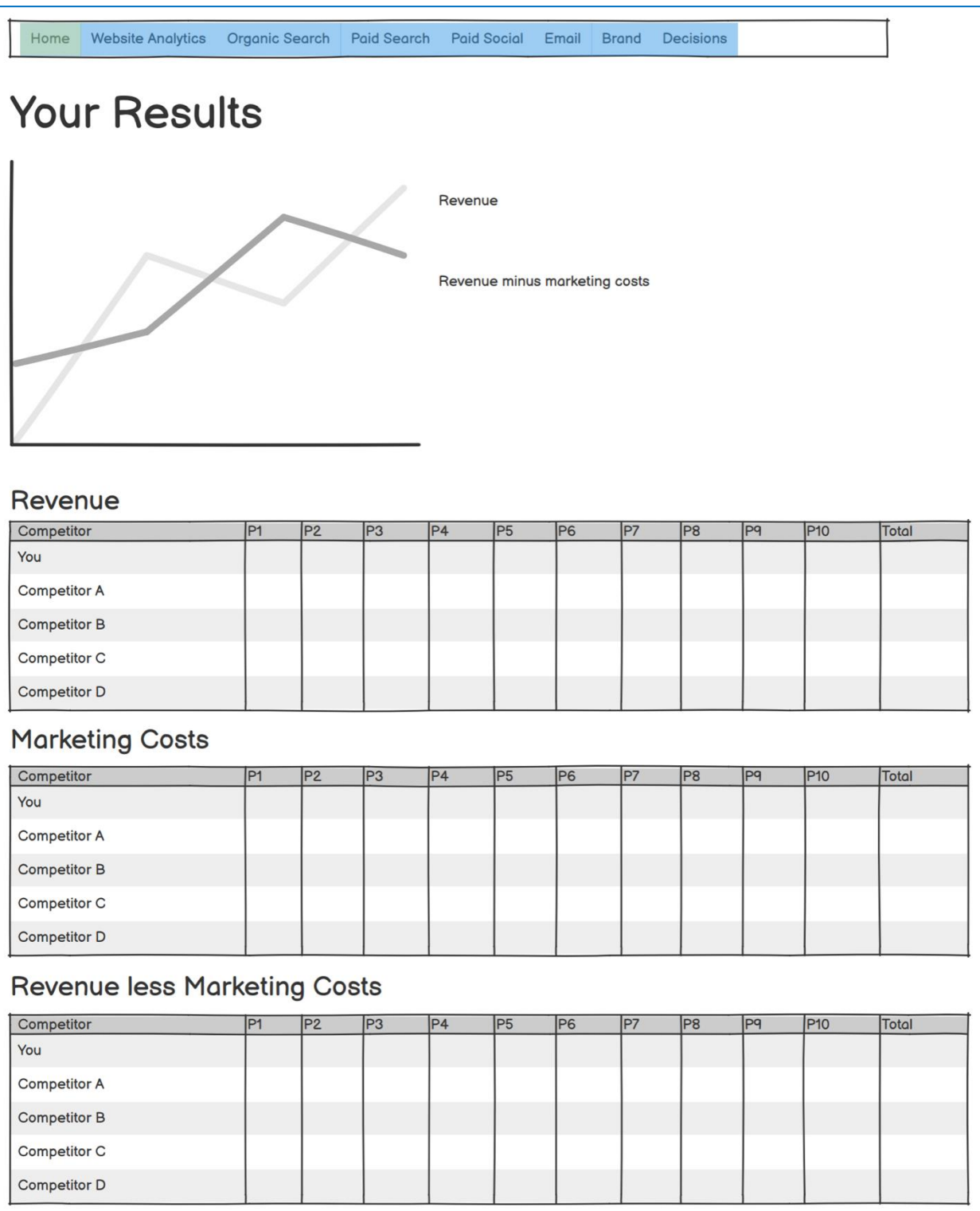**Figure 8 – Marketing Game decision screen**

Your Results

Revenue

Revenue minus marketing costs

Revenue

Competitor	P1	P2	P3	P4	P5	P6	P7	P8	P9	P10	Total
You											
Competitor A											
Competitor B											
Competitor C											
Competitor D											

Marketing Costs

Competitor	P1	P2	P3	P4	P5	P6	P7	P8	P9	P10	Total
You											
Competitor A											
Competitor B											
Competitor C											
Competitor D											

Revenue less Marketing Costs

Competitor	P1	P2	P3	P4	P5	P6	P7	P8	P9	P10	Total
You											
Competitor A											
Competitor B											
Competitor C											
Competitor D											

Figure 9 – Marketing game results screen

Travel Game:

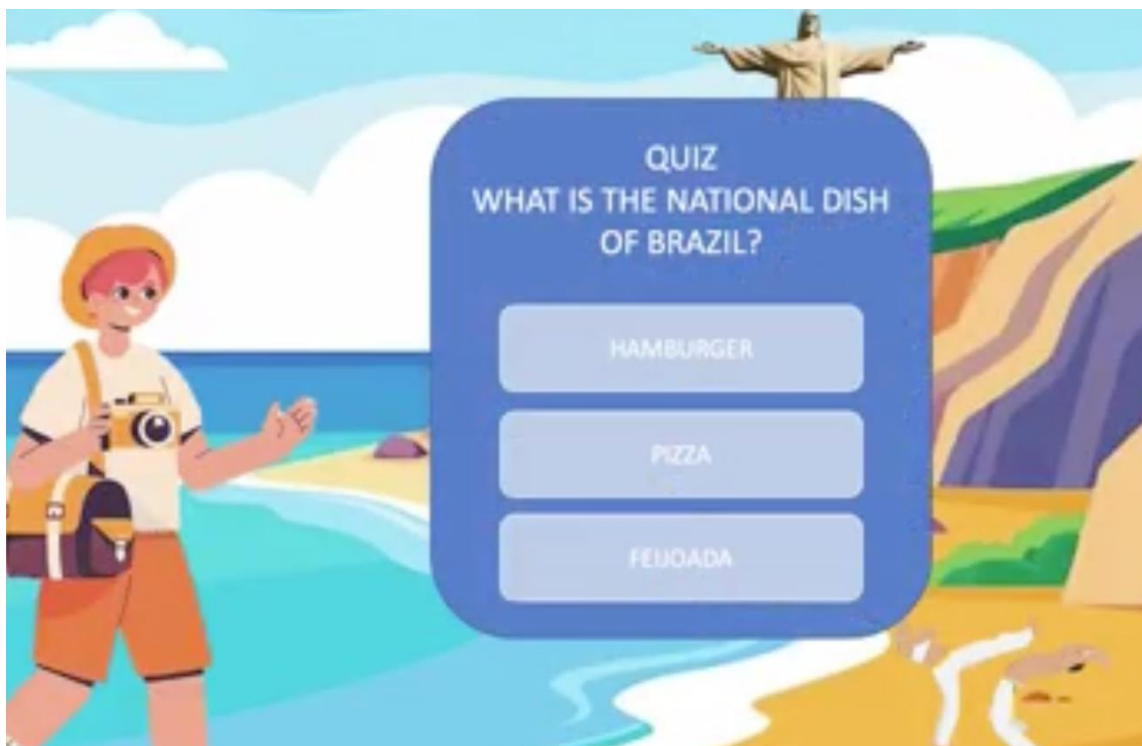**Figure 10 – Travel game learning screen**

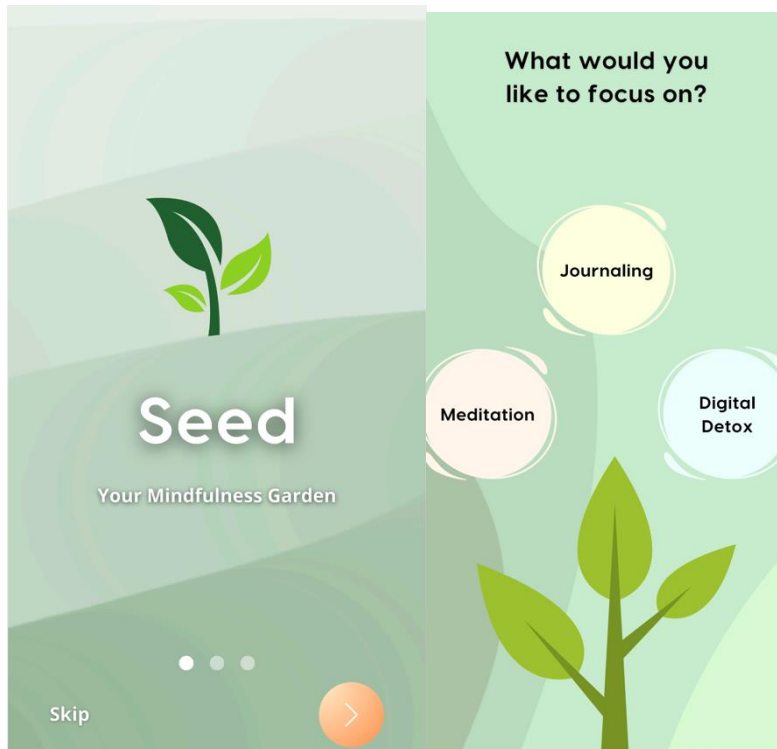**Figure 11 – Travel game quiz screen**

Mindfulness:

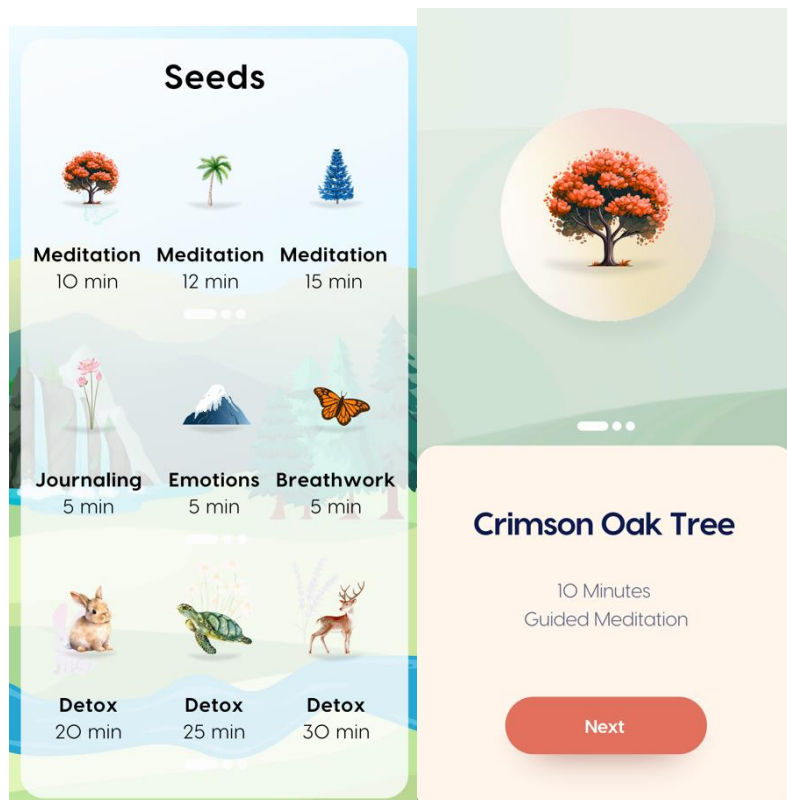**Figure 12 – Mindfulness game intro screens**

Figure 13 – Mindfulness game rewards and activity screens

Sprint 3 2024-10-30 to 2024-11-06

3.1 Overview
- Our objectives for this sprint were to
    - Formalise roles within team
    - Determine processes to be used and weekly rhythms
    - Complete Spikes on Unity and Swift to determine which to use
    - Draft initial set of user stories for prioritisation

3.2 Review
- Team roles defined
    - Nigel as Scrum Master
    - Jack as Product Leader
    - Others as "developers"
- Using Sprint meeting structure and cycles, but Kanban visual approach to managing backlog
- Sprint Reviews on Wednesday mornings
- Sprint Retro and Sprint Planning scheduled around Customer Meeting and Document Clinic on Wednesday afternoons
- 15-minute remote stand-ups via Teams on Mondays and Fridays, beginning Friday 8 November (i.e. after this sprint)
- Using Teams to collaborate
- SwiftUI selected for front end

3.3 Meeting minutes
3.3.1 Sprint Review Meeting 2024-11-06

Summary:
We will use SwiftUI for the front-end; upload user stories into Trello. Jack will work with Sol to handover Product Owner responsibilities from the following Sprint given Jack's front-end skills and need to balance workload across the team.

Attendees:
Nigel, Jack, Yi-tzu, Pragnya, Wei-en, Sol

Agenda:
Sprint activities to review
- Swift spike: Wei-en and Jack
- Unity spike: Pragnya and Yi-tzu
- User Stories: Pragnya, Jack
- Testing: Sol

Swift spike
Wei-en shared findings from his spike on Swift
- https://docs.google.com/presentation/d/1Q9qWZeYrqZOo7cKmEEUtEVqWSrKkk-EO5jamZLNSOuk/edit?usp=sharing @Wei-En Chi

A powerful frontend framework for app development

- Apple offers over 6,000 SF Symbols icons for streamlined design
- Code in Xcode for real-time, visual output
- Intuitive and accessible for those without a coding background

Swift UI looks easy/good

Ideally would use XCode as IDE – not clear if this is available to Windows users?
Options for backend - Swift (recommended by Applie , but unknown to the team) or restful API + Python (or Java …)

Jack shared a working version of the prototype that he had built in Swift
- See User design below

Unity spike
Pragnya & Yi-tzu shared their findings from spike on Unity
Can code in C# - really easy to code in and only one language to learn
Can use Visual Studio

Discussion on SwiftUI vs Unity
The team discussed pros and cons of SwiftUI vs Unity. Agreed that it depended on nature of product we wished to develop: SwiftUI better for app-like experience; Unity better for gaming elements. After further discussion of this agreed to proceed with SwiftUI. Could not determine whether backend should be Swift (as recommended by Apple) or Python (via API). Team agreed to investigate further and decide during coming sprint.

User Stories – Pragnya and Jack
Jack and Pragnya shared their drafts of user stories (see 3.6.2 user stories below)

Testing (Sol)
Not achieved

Roles
We discussed roles with an idea of Sol taking over the role of Product Owner given Jack's front-end workload. Jack agreed to work with Sol during the week to handover the existing user stories with a view to this new structure being in place from the following Sprint.

Actions

Compile user stories and put into Trello	Jack with Sol
Decide on which back-end to use	Yi-tzu & Wei-en
Make progress on front-end	Jack

3.3.2 Sprint Retro Meeting

The team conducted a short retrospective meeting to discuss improvements in the way the team worked together, agreeing to work more closely together during the week, to set-up a WhatsApp channel for simpler communication and to book a room with a projector for the next Sprint review.

Who?	Went well	Could be improved
Wei-en	-	Finding the right room! Could we use a projector/screen? Collaborate with others during the sprint
Pragnya	Being able to pick a platform Distinct roles falling into place	Need a place to put user stories so that everyone can see them
Jack	Good work so far.	-
Yi-tzu	-	Not sure Teams is the best place to communicate – should we set-up WhatsApp? Be clearer about deliverables by the end of the Sprint Collaborate more during the week Share information before the Sprint Review to make the most use of the time together
Nigel	Nothing to add	Nothing to add – agree on collaboration
Sol	(Absent)	(Absent)

Actions

Set-up team WhatsApp group	Nigel
Find a room with a projector/screen for next Sprint Review	Nigel
Ensure collaboration during sprints	All
Enter user stories into Trello	Sol

3.6 Product documents
3.6.1 Customer meeting and analysis
Summary

The meeting with the customer went well, with questions about the integration of the oracle and how the app could track the user's activities and their impact on their wellbeing.

Customer Meeting 2024-11-06

Attendees:
Nigel, Jack, Yi-tzu, Pragnya, Wei-en, Sol

Stated what had been done in Sprint

- Showed demo of product
- Shared user stories

Customer asked question re breathing: how are we going to tackle this?
- Guided breathing exercises

Sol - done some background on breathing exercises
- Box breathing
- Humming bee breathing

Customer: Where's the Oracle?
- After choice of meditation path, Oracle will guide within each path

Customer: Is Oracle being invoked, or volunteering information?

Can the app determine where the user is on the journey?
Use that to decide how to help the user (via the Oracle)

Back-end tracking the data of each path taken: visual element of progress

Push notification to remind to do exercises: regardless of whether the app was open?
Is it the "Oracle" communicating via the notifications

How might the Oracle determine how well the user is succeeding
E.g. ask for user feedback? How do you know if they're doing box breathing correctly or not?

Have emotional tracking and sleep tracking (build around assumption of integration with e.g. Healthkit without actually building that integration).

3.6.2 User stories & user interface design
An initial set of user stories were created and added to the backlog: these are not yet a complete set of stories to be able to build a finished version of the game

- **Indigo-1: User Story – Notifications**
    - As a user, I want to receive gentle reminders to check in with my feelings so that I can stay present and mindful throughout the day.

- **Indigo-2 User Story – Pathways**
    - As a user, I want to choose a mindfulness path so that I can customise my journey effectively.

    - *Test*: Given user is on activity screen, and the three pathways are visible, when user clicks on a specific pathway, they then go to the page for that pathways activities.

- **Indigo-3 User Story - Box Breathing Animation**
  - As a player i want to be able to view an animation of box breathing to allow me to stay in time. See mock-up in Figure 14
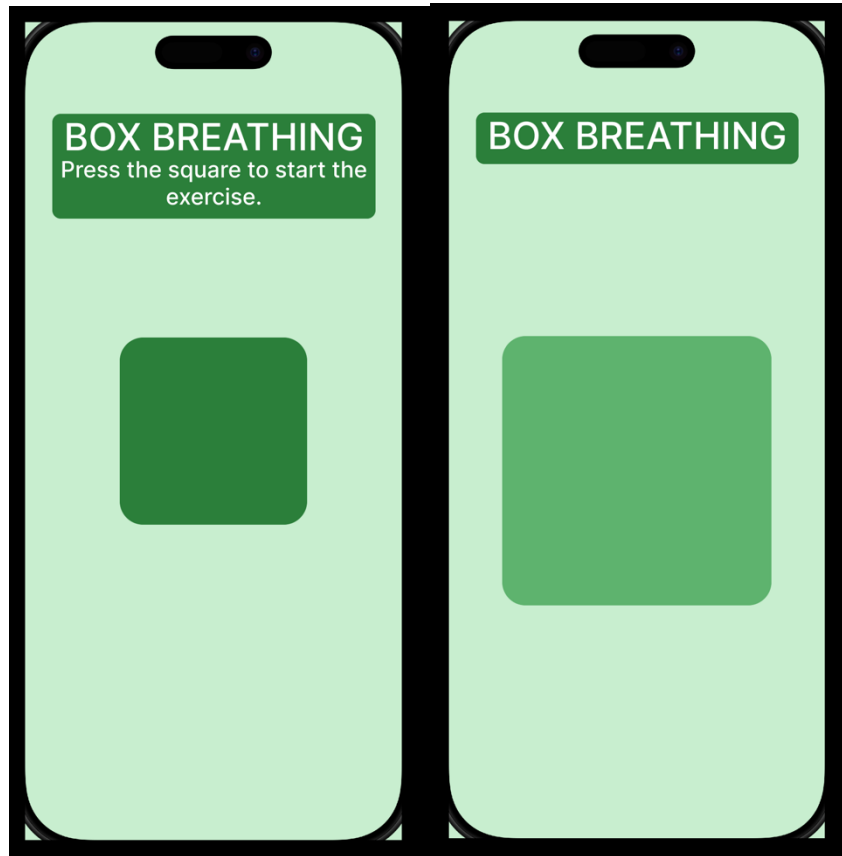

Figure 14 – concept for guided box breathing exercise

3.6.4 Requirements use cases

UC1-1 Title: Receive reminders form App

UC1-2 Actors: Notification

UC1-3 Precondition: User allows permission for notification to be received

UC1-4 Basic Flow: The User allows notifications in settings on phone and the Notification System schedules reminders at 9 am every day or as desired by the user. After which the User receives notification at the preferred time.

UC1-5 User Story Referenced: Indigo-1: User Story – Notifications

UC2-1 Title: Choose mindfulness path

UC2-2 Actors: Mindfulness Pathway View

UC2-3 Precondition: App has literature input on the different pathways and sub activities in each established.

UC2-4 Basic Flow: The App displays three tabs labelled 'Mediation', "Journaling" and "Digital detox", each leading the user to a respective activities page which elaborated

on the type and duration of task. The user is allowed to select a preferred journey among twelve different activities after clicking on a specific path.
UC2-5 User Story Referenced: Indigo-2: User Story – Pathways

UC3-1 Title: View Box Breathing Animation
UC3-2 Actors: Box breath animation
UC3-3 Precondition: The user selects mediation pathway.
UC3-4 Basic Flow: The mediation pathway instructs the user to choose between box breathing and various other activities. One the Box breathing activity is clicked, the activity loads the inhale, hold, exhale and hold animation.
UC3-5 User Story Referenced: Indigo-3: User Story – Box Breathing Animation.

3.6.6 CRC cards

Class Name: Notificationping	Version: 1.0
Description : Notifies user of a mindulness activity they need to perform	Associated Use Cases : UC1
Responsibility : Pings the user with a message regarding the activity they need to perform every morning at 9 am or at a preferred time set by the user.	Collaborators: Notification API System Settings

Class Name: PathwayTabView	Version: 1.0
Description : Presents and allows for selection of pathway	Associated Use Cases : UC2
Responsibility : Displays three different main Meditation, Journaling and digital detox path ways which can be clicked to be directed to 12 more sub pathways from each main pathway.	Collaborators: ContentViewpage

Class Name: Box breathing animation	Version: 1.0
Description : A box shaped animation with a progress line along the border of the box.	Associated Use Cases : UC3
Responsibility : Loads an inhalation, hold, exhalation and hold animation for the user to follow along.	Collaborators: AnimationPage

Sprint 4 2024-11-06 to 2024-11-13

4.1 Overview
Plans for this sprint:

- Create a set of more detailed user stories together with associated tests
- Further develop the meditation path user experience as a template for other paths
- Flesh out the game mechanics: how does progress with activities/levels interact with seed/garden concept?
- Decide on back-end between Swift and Python to couple with SwiftUI front end
- Create all document templates and clear backlog of documentation from prior Sprints

4.2 Review
Summary of accomplishments for this sprint

- User stories generated, but still missing tests
- Developed meditation path front end further
- Decided on Swift data for back end (not Python)
- Documented work undertaken and decisions made in prior weeks

4.3 Meeting minutes
4.3.1 Sprint Planning Meeting 2024-11-06

Summary
The team met and agreed on priorities for the coming sprint, as well as mid-way accomplishments that we were targeting to achieve, with a particular focus on back-end technology, writing user stories and associated tests, and keeping up-to-date with sprint documentation.

Attendees:
Nigel, Jack, Yi-tzu, Pragnya, Wei-en, Sol

Actions:

What	Who	Before next stand-up?
Decide on backend for app	Wei-en & Yi-tzu	
Use Swifty/Unity to connect to database	Wei-en & Yi-tzu	Y
Create document templates	Nigel	Y
Document previous "Sprints"	Nigel	Y
Add User Stories into Trello	Sol	
Write user stories for journaling	Pragnya	Y
Complete CRC cards for meditation	Pragnya	

Set-up Github and add code to repo; share with team	Jack & Yi-tzu	
Write detailed user stories, test-cases and Canva protothypes for Meditation path	Sol & Jack	Y
Take first screen from existing app and develop it further	Jack	
Read Julian's paper that references breathing exercises	Sol	Y
Write a user story re the overall game mechanics	Pragnya	

4.3.2 Stand-up 08-11-2024

Who?	Progress	Blockers
Wei-en	Investigated options for database/back-end. SQLite or Swift data	None
Yi-Tzu	Same as Wei-en. Thinks Swift data may be the right answer, but needs more investigation	None
Sol	Started writing user stories and adding to Trello	None
Jack	Made progress on front-end: added entrance to Meditation path	Needs user stories from Sol to make progress from here
Nigel	Compiled documentation and templates	None
Pragnya	(Did not attend)	(Did not attend)

4.3.3 Stand-up 11-11-2024

Who?	Progress	Blockers
Wei-en	Helped Yi-Tzu with set-up of SQL lite database	None
Yi-Tzu	Set-up data in SQL lite	Need to know how to connect to Swift: investigating Cloudkit; need user stories to better understand data requirements
Sol	(Did not attend)	(Did not attend)
Jack	Completed Canva mock-ups for continuation of meditation journey	Awaiting user stories from Sol to know how to proceed
Nigel	Completed Stand-up template; filled in for prior stand-up. Added To-do Trello board and added current To-dos	None
Pragnya	Completed CRC cards for existing User stories	Needs user stories prioritising to determine which CRC cards to prioritise

4.3.4 Sprint Review 13-11-2024

Summary:
- Reviewed outcomes of Sprint
- Decided that we needed to outline overall user flows
- Decided that we needed to investigate incorporation of actual user data (e.g. heart rate)

Attendees:
Nigel, Jack, Yi-tzu, Pragnya, Wei-en
Absent: Sol

Agenda:
- Sprint activities to review:
  - o User stories and new mock-ups
  - o Back-end decision
  - o Documentation and templates

Actions

Need to create user flow chart: progression of screens/actions	Jack (with Pragnya, Sol)
Investigate data available via Healthkit	Wei-en, Yi-tzu

4.3.5 Sprint Retro 13-11-2024
The team held a retro to again improve working practices. There was agreement that backlog tasks would benefit from being written more clearly and with a clearer separation of responsibility (particularly between Yi-Tzu and Wei-en on back-end)

Who?	Went well	Could be improved
Wei-en	-	Improve communication of exactly who is doing what between Wei-en and Yi-tzu
Pragnya	Like the use of Trello for visualisation for Product backlog and to-do list: visual	Can product team work together better please to ensure we're better co-ordination. E.g. meet on Wednesday after Sprint Planning
Jack	-	Please let others know if you're not able to attend a team meeting (stand-up or otherwise)
Yi-tzu	So far, so good	-

Nigel	-	Clearer explanation of Product Backlog vs To-Do list Bring HDMI cable to Sprint Review
Sol	-	Need to understand how to write tests (see Cucumber/Gherkin)

Actions

Investigate collaboration options: X-Code/Github	Jack & Pragnya
Bring HDMI cable to next Sprint Review	Nigel
Read about Given/When/Then test framework	Sol

4.4 Backlog

- Indigo 1 - User Story - Notifications
- Indigo 2 - User Story - Pathways
- Indigo 3 - User Story - Box Breathing Animation

4.4.1 Completed backlog tasks
- as heading
- link (cross-reference) to relevant product documents

4.4.2 New backlog tasks
- See user stories below

4.5 Exception handling
- • any events/situations that required unusal actions • link (cross-reference) to relevant product documents

4.6 Product documents

4.6.1 Customer meeting and analysis
Attendees: Jack, Sol, Yi-tzu, Wei-en, Pragnya, Nigel, Julian, Maddi

The team presented the concept and current state of development to Maddi

Questions were asked about the evidence base for the positive impact of the suggested activities. Sol referred to the rational paper that he had produced, reviewing that evidence base.

Questions were again raised about the verification of the user's activities and the impact on their well-being. There was a discussion about integration with Healthkit (for heart rate and sleep data) and Screen Time (for digital detox-related data), and/or the possibility of integrating with similar data from Fitbit. It was agreed that we would proceed on the basis that such data is theoretically available, but not necessarily attempt to build the API integration.

The team were asked if a more fully developed MVP would be available for review next week. The team agreed that this was achievable.

4.6.2 User stories

A fuller set of user stories were developed during this Sprint. The additional stories are detailed below:

- **Indigo 4 - User Story - Select Meditation Sub Path**
  - As a player, once i select the meditation pathway I want to be able to chose between guided meditation and breathing exercises so I can have autonomy over my mindful practices. See figure 15:

Figure 15 – selection of meditation activity

- **Indigo 5 - User Story - Select Meditation Session**
  - As a player, I want to be able to select my meditation session so i can chose it based off of time. See figure 16:
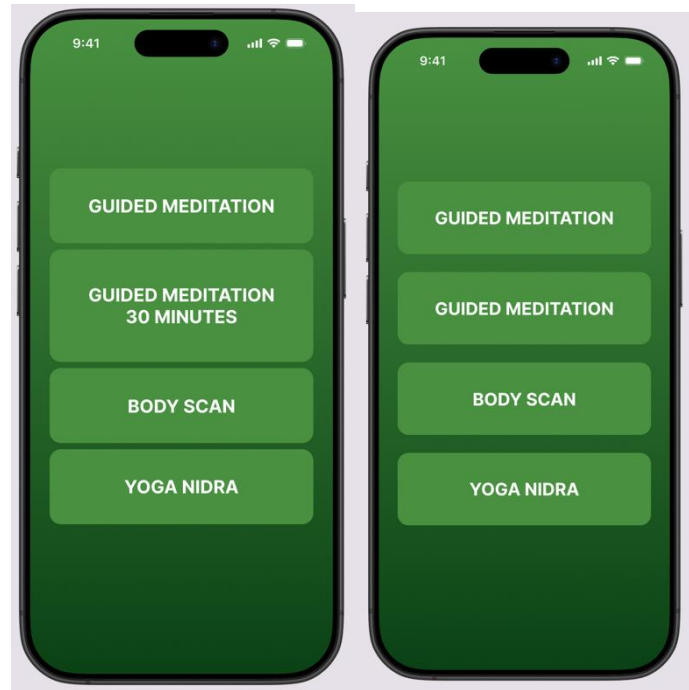
Figure 16 – selection of meditation session

- o Test: Given user is on meditation screen, when uses presses a specific meditation session it takes them to the page for that session.
- **Indigo 6 - User Story - Completing Session Main**
  - o As a user I want to receive a reward after completing an exercises that I can plant it in my garden.
  - o Given user has not completed task before, when task is completed, then user is given reward 'Seed' to plant in their garden.
  - o As a user I my activity completions to be tracked over time so I can look back at what I have accomplished.
  - o Given user, when an activity is completed, then database is updated with activity and date completed, and level for that pathway increments up.
- **Indigo 7 - User Story - Mood logging Main**
  - o As a user i want to be able to log my mood so i can self assess any changes overtime.
- **Indigo 8 - User Story - Background Colours**
  - o As a user i want the background/ambient colours to change slowly to create a calming environment for me.
  - o https://www.figma.com/proto/xN59g4WymUWIaOb8Q3M3bY/Untitled?node-id=3-221&t=ivCloD1Q9a3eVlNT-1 "
- **Indigo 9 - User Story – Challenges**
  - o As a user I want to be able to enrol myself in challenges such as a 7-day meditation challenge so that i can build a regular habit through goal setting.
  - o As a user i want these challenges to reward me in some way so i can feel a sense of greater achievement.
- **Indigo 10 - User story - Clock**

- o As a user I want a clock visual so I can see how much time has elapsed.
- o Test: given user is in a meditation or detox session, when the session is active then a clock starts timing.
- o Test: given the user is in a meditation or detox session, when the session ends then the clock stops timing.
- **Indigo 11 - User Story - Introduction to game**
  - o As a user I want to be introduced to the premise of the game and walked through how the steps of the game work so I know what to do, I want to be able to access this again should i forget.
- **Indigo 12 - User Story - Pause**
  - o As a user I want to be able to pause a meditation session should something happen that i need to attend to, so i can complete the meditation without losing my progress.
  - o This pause should have a time limit of 5-minutes, or the effects of meditation may be lost.
  - o Tests: Given user is in a meditation session, when user presses pause button, then meditation audio file is paused.
- **Indigo 13 - User Story - Virtual Garden Mock up page on Xcode**
- **Indigo 14 - User Story - Progress Mock up Page on Xcode**

4.6.3 Tests
(Incorporated into the above – see tests)

4.6.4 Requirements use cases

UC4-1 Title: Select a mediation sub path
UC4-2 Actors: Meditation Sub Path page on App
UC4-3 Precondition: The user selects mediation pathway.
UC4-4 Basic Flow: The mediation pathway instructs the user to select from four activity tabs: Breath work, guided session, mindful imagery, and body scan. Each of these four activities when clicked show three sub activities that have timed guided meditations in increasing amount of time.
UC4-5 User Story Referenced: Indigo-4: User Story – Select Meditation Sub Path

UC5-1 Title: Receive a reward for completing a session
UC5-2 Actors: User, Count
UC5-3 Precondition: The user selects either a mediation, journaling or a digital detox pathway and completes one session under the twelve subactivites.
UC5-4 Basic Flow: The app displays a congratulatory message and displays a garden element as a reward for completing a sub activity. The count increases by 1 every time the user completes a sub activity which triggers the element rewarded to be displayed in the elements page in the user's virtual garden.
UC5-5 User Story Referenced: Indigo-6: User Story – Completing Session Main

UC6-1 Title: Allow the user to log in mood

UC6-2 Actors: User

UC6-3 Precondition: The user selects the journaling pathway from the main content screen.

UC6-4 Basic Flow: Once the user selects the journaling pathway, a page is prompted with the question "How are you feeling right now?" and the user is allowed to slide and pick either a sad, neutral or happy emotion. The user's choice is then logged and stored into the database.

UC6-5 User Story Referenced: 7: User Story – Mood Logging Main

4.6.6 CRC cards

Class Name: Subactivity	Version: 1.0
Description: allows the user to select three subacvities under each of the four main activity tabs, totaling of 12 subactivites across four tabs.	Associated Use Cases: UC4
Responsibilities:	Collaborators:
Display available sub-paths. Handle sub-path selection and navigate to the appropriate screen.	Pathwaylog Count

Class Name: Moodlog	Version: 1.0
Description: Tracks and logs user moods.	Associated Use Cases: UC6
Responsibilities:	Collaborators:
Collect mood inputs. Save mood data.	Database Count

4.6.8 User interface design

Prototypes were developed in Canva to demonstrate the Meditation path (Indigo –4 and Indigo –5), and to act as a template for other paths: see figures 17 and 18:
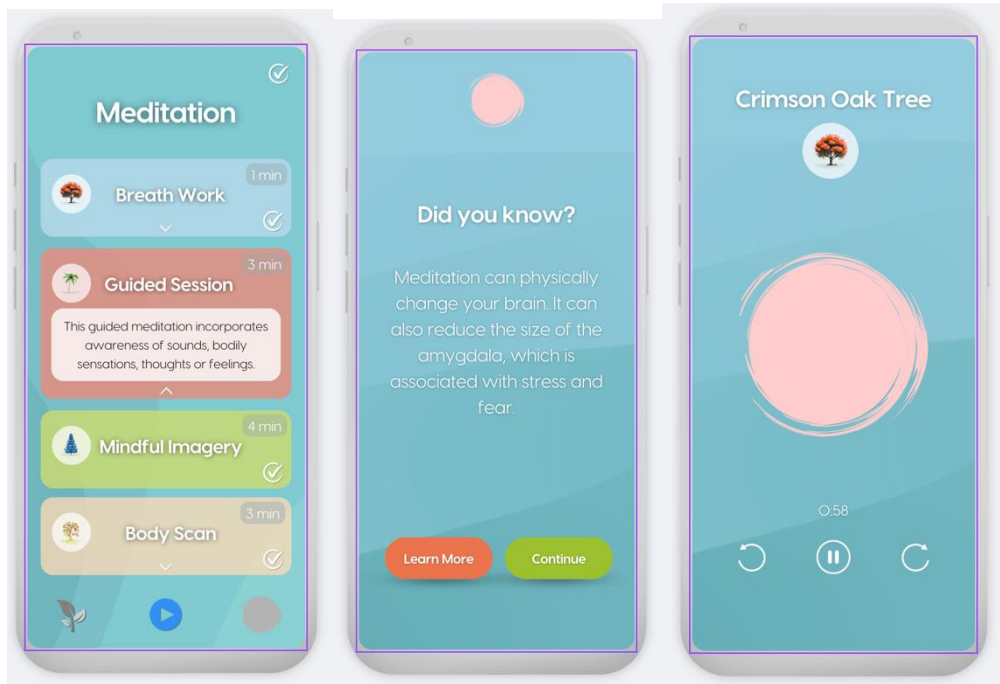

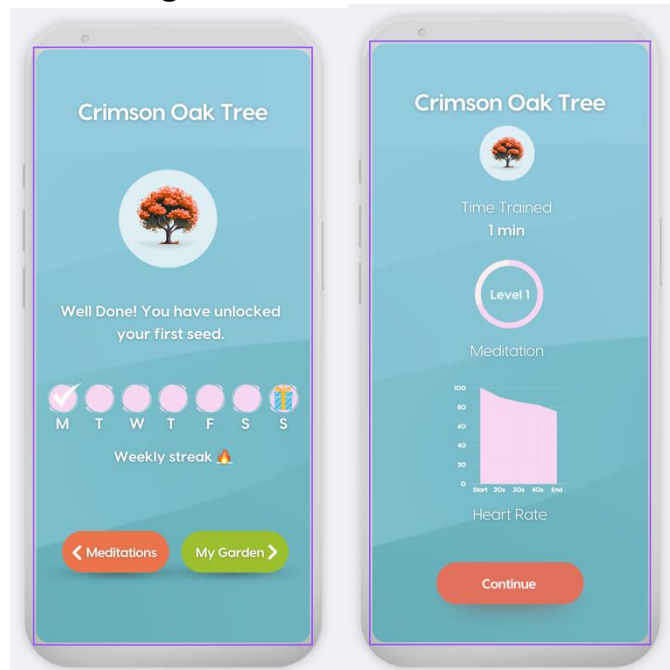**Figure 17: Selection of guided meditation session from meditation path**

Figure 18 – Completion of guided meditation session

Sprint 5 2024-11-13 to 2024-11-20

5.1 Overview
Plans for this sprint are to:
- Create a more complete list of user stories and associated test cases to be developed in the week.
- Prioritise these user stories and complete some during the week
- Mock-up additional pages and user flows
- Begin work on back-end and database to support the front-end
- Additionally: compile all documentation into a single document

5.2 Review
During the sprint the team achieved the following:
- Completed pathways, select meditation session and pause user stories
- Made progress on (but failed to complete) pause and virtual garden/progress user stories
- Concluded that user stories need to be more granular, enabling them to be assigned to individuals during the sprint.

5.3 Meeting minutes
5.3.1 Sprint Planning

Sprint planning this week focused on the Trello board of user stories, their prioritisation and determination of which user stories would be tackled during the sprint, these being:

Indigo 2 - User Story - Pathways
Indigo 5 - User Story - Select Meditation Session
Indigo 10 - User story - Clock
Indigo 12 - User Story - Pause
(NEW) User Story – Virtual Garden Mock up Page on Xcode
(NEW) User Story – Progress Mock- up Page on Xcode

5.3.2 Stand-up 2024-11-15

Who?	Progress	Blockers
Wei-en	Build a function that can post a time, record the time stayed on the page	No blockers
Yi-Tzu	Create a function to count progress against students; record user's login time to calculate start/end times for plant growth	No blockers

Sol	Started creating text for meditation from the Oracle and pathway for journalling	Is it possible to add questions progressively with difficulty?
Jack	Focusing on updating designs (in Canva) based on front-end discussions: garden, seeds page, progress page, weekly streaks/summary, oracle messaging, heart rate graph	Needs text for oracle messaging from Sol.
Nigel	Compiled documentation into single document	No blockers, but not much product documentation prior to this week
Pragnya	Fleshed out CRC cards Reviewed Swift code and added garden backdrop and animation on X-code.	No blockers

5.3.3 Stand-up 2024-11-18

Who?	Progress	Blockers
Wei-en	Built clock functionality – both front end and ability to store times; additionally built box breathing animation screen (from backlog)	Not sure whether this implementation is exactly what is called for from the description in the Trello card.
Yi-Tzu	Built outline pages with counting function	No blockers currently
Sol	Made progress with user stories. Also worked on given/then/when test cases.	No blockers currently
Jack	Built path choices page	Unsure how to handle expansion of menus – scrolling? Need a database of text to call on to show oracle messages. Need help setting up Github and consolidating code together
Nigel	Consolidated documentation into single document	Still feels thin on product content: need to know where to find e.g. CRC cards (answer: in Trello To Do board)
Pragnya	Behind on doing CRC cards – should be able to finish today. Have started coding virtual garden in X Code	Not able to create a branch in Github to push build: need permission from Jack.

5.3.4 Sprint Review 20-11-2024

Summary:
Progress of Sprint reviewed – made good progress on elements of game but they need integration.

Jack announced his departure from the course and team. The team agreed that Pragnya would pick up most of the front-end work from Jack, based on Jack's existing Canva prototypes.

Attendees:
Nigel, Jack, Yi-tzu, Pragnya, Wei-en, Sol

Agenda:
- Sprint activities to review:
    - Review progression of user stories
    - Decide what to present to customer
    - Review backlog

Pragnya
Worked on progress tracker page (not currently taking data from back end). Needs an Oracle.
Worked on virtual garden page – can drag/move contents: trees/flowers/butterfly/birds. Not clear on what should be accessible via the settings.
Need to work on CRC cards. Have done for one user story, but others need work.

Wei-en
Worked on database and clock/timer. Still needs to work with Yi-Tzu on integration with his database.

Yi-tzu
Combined his database with Jack's front-end work, but encountered some issues as not all front-end functionality is complete. To make progress added simple button to test that counter is working as expected. Is working as expected: when a task is complete on a day, the progress tracker will mark as shaded.

Sol
Added descriptions of data required for breathing sessions.
Created sequence of prompts for journalling and mediatation journeys, of increasing difficulty. Most are text format. Also split user stories into more detailed backlog tasks.
Added given/when/then test statements to user story cards

Jack
Demonstrated new front-end functionality for meditation path, including integration of audio within exercises

Actions.

Convert Aspects within User Stories to more granular user stories	Sol
Add database of "did you knows" for Meditation	Sol

5.3.5 Sprint Retro Meeting 20-11-2024
Summary:
The team reviewed processes and agreed that progress had been better this week. There was a request for more detail in the user stories and to take the opportunity to do more pair programming, which had worked well.

Who?	Went well	Could be improved
Sol	Good this week. Using stand-ups well. Know what we need to do.	Need more detailed user stories; if the user story is completed, what should come next?
Jack	Good that we split up the work and got more things done.	Git stuff could be better. Need to work out a few things about how we can all collaborate effectively on Github to enable integration.
Pragnya	Pair programming (accidental) - were all at the Brook at the same time, so ended up doing pair programming.	Could we do more pair progrramming please? Find a time to do this.
Wei-en	-	Need to integrate code as early as possible – ensure Github implementation is good.
Yi-tzu	-	Same as Jack & Wei-en. Also – check the user stories more.
Nigel	Better progress in terms of functionality delivered and collaboration as a team.	Use Trello board (and more detailed backlog tasks) better: move items from "This Sprint" to "In Progress" to "In Test" - make sure we get tickets tested before moving to Completed.

Actions

Make User stories more detailed	Sol
FIgure out a time to do pair programming	Pragnya

5.4 Backlog

This was the backlog of tasks at the end of the Sprint (excluding items still in progress):

- Indigo 1 - User Story - Notifications
- Indigo 3 - User Story - Box Breathing Animation
- Indigo 4 - User Story - Select Meditation Sub Path
- Indigo 6 - User Story - Completing Session Main
- Indigo 7 - User Story - Mood logging Main
- Indigo 7 - User Story - Background Colours
- Indigo 9 - User Story - Challenges
- Indigo 10 - User story - Clock
- Indigo 11 - User Story - Introduction to game
- (NEW) Indigo 15 - User Story - Heart rate data
- (NEW) Indigo 16 - User Story - Rewards
- (NEW) Indigo 17 - User Story - Journaling Main
- (NEW) Indigo 18 - User Story - Daily messages
- (NEW) Indigio 21 - User Story - Completing Session #3
- (NEW) Indigo 20 - User Story - Completed Session #2
- (NEW) Indigo 19 - User Story - Completing Session #1
- (NEW) Indigo 22 - (Daily Messages) Display message on open
- (NEW) Indigo 23 - (Daily Messages) Create factquote list
- (NEW) Indigo 24 - (Daily Messages) Create message writer that references user progress values
- (NEW) Indigo 25 - User Story - Mood Logging #1
- (NEW) Indigo 26 - User Story - Mood Logging #2
- (NEW) Indigo 27 - User Story - Journaling #1
- (NEW) Indigo 28 - User Story - Journaling #2
- (NEW) Indigo 29 - User Story - Journaling #3

5.4.1 Completed backlog tasks
- Indigo 2 - Pathways - https://trello.com/c/dbeHGSCm
- Indigo 5 - Select Meditation Session - https://trello.com/c/otBKWuI6
- Indigo 12 - Pause - https://trello.com/c/8WuWK42i

5.5 Exception handling
- Orcale text is scrolling in a way that makes readability difficult –text jumps when a second line is revealed. Suggest that rather then fully centring the text it is only left/right centred, so this behaviour does not happen.

5.6 Product documents
5.6.1 Customer meeting and analysis

Summary:
Customer seemed very happy with progress - "I would play it". Suggested that garden should be scrollable to enable planting of more seeds once initial screen fills up.

Detailed notes
Customer asked: How has week been?
Looking good
The customer asked (again) about accessing data from Fitbit etc – are you actually going to do this? We reiterated what had been discussed in prior weeks: that this functionality wouldn't be a priority for development: we would add data that would simulate what would be available from e.g. Healthkit
The customer asked what about making the garden scrollable
Test typing makes it hard to read
It's in a good spot: something I would use
Tips/learn more adds to the learning. All really good.

5.6.2 User stories

The following user stories were added, some resulting from the breaking-up of larger user stories into smaller sub-tasks, some as a result of customer feedback, some due to internal team discussions:

- **Indigo 15 - User Story - Heart rate data (customer feedback)**
  - As a user I want to be able to sync my heart rate data from my smartwatch so I see if it goes down during meditation.
  - Test: Given user is meditating and has a connect HRM, when meditation session active heart rate is taken, then heart rate during session is displayed on completion.
- **Indigo 16 - User Story – Rewards (team discussion)**
  - As a user I want to receive a reward after completing an exercises that I can plant it in my garden.
  - Test: Given user has not completed task before, when task is completed, then user is given reward 'Seed' to plant in their garden.
- **Indigo 17 - User Story - Journaling Main (break-out)**
  - As a user, I want the journaling prompts to get progressively more complex so as I learn more about mindfulness I can practice more in more challenging ways.
  - Given user is completed journaling tasks, when user completes journaling task their level increases, then more complex prompts are deployed.
- **Indigo 18 - User Story - Daily messages (team)**
  - As a user I want the game to give me a daily message upon opening that could be a quote, a fun fact, or related to my progress so I feel the app is actively engaging with me.

- **Indigo 19 - User Story - Completing Session #1 (break-out)**
  - **Database adds seed to user seed bank.**
  - Given user is completing a session for the first time, when user completes session, the seed associated with the session is added to the users seed bank database.
- **Indigo 20 - User Story - Completed Session #2 (break-out)**
  - **Database records task being completed.**
  - Given user is completing a task, when task is completed then a record is stored in the database of the task being completed and the date it was completed.
- **Indigo 21 - User Story - Completing Session #3 (break-out)**
  - **UI message of task being completed, including specific seed reward**
  - given user is performing activity for the first time, when user completes activity, then user is presented with UI message congratulating them and presenting them with the seed associated with that task.
  - "Congratulations on completing {activity}, the {seed} has been added to your seed bank!"
- **Indigo 22 - User Story – Daily Messages #1 (break-out)**
  - **Display message on open**
  - As a user I want to see a message displayed to me when I open the app that is specific to that day's activities
- **Indigo 23 - User Story - Daily Messages #2 (break-out)**
  - **Create factquote list**
  - As a user I want to see a variety of different daily messages so that I don't get bored and feel that I am always learning something new
- **Indigo 24 - User Story – Daily Messages #3 (break-out)**
  - **Create message writer that references user progress values**
  - As a user I want the daily messages that I receive to reflect the progress that I have made in my mindfulness practices
- **Indigo 25 - User Story - Mood Logging #1 (break-out)**
  - **Mood is logged in journaling tab through slider prompt (UI)**
  - given user has selected journaling activity, the user is prompted with a mood review which could be either a slider or a selection of an emoji, when selected this then is added to the users mood database alongside the date.
- **Indigo 26 - User Story - Mood Logging #2 (break-out)**
  - **Mood result is stored in database with date.**
  - Given user is logging mood, when mood is selected, then mood is saved to user database alongside date.
- **Indigo 27 - User Story - Journaling #1 (break-out)**
  - **Journal prompts start at level one and can be slider or textbox.**
  - Given user is beginner at journaling, when user selects journaling, then only level one and two prompts are asked.
- **Indigo 28 - User Story - Journaling #2 (break-out)**
  - **Each completed journaling prompt increments user journaling level.**
  - Given user is completing journaling tasks, when tasks are completed, then the users journaling level is incremented.

- **Indigo 29 - User Story - Journaling #3 (break-out)**
  - **User journaling level determines the complexity of journal prompts to be asked**
  - Given user is journaling, when journal opened, then user journaling level is referenced to determine the journal prompts to be deployed.

5.6.8 User interface design
Additional work was done on the prototyping of user flows for the other journeys.

The journalling journey (Indigo 17; Indigo 27-29) was prototyped as show in figures 19 and 20 below:
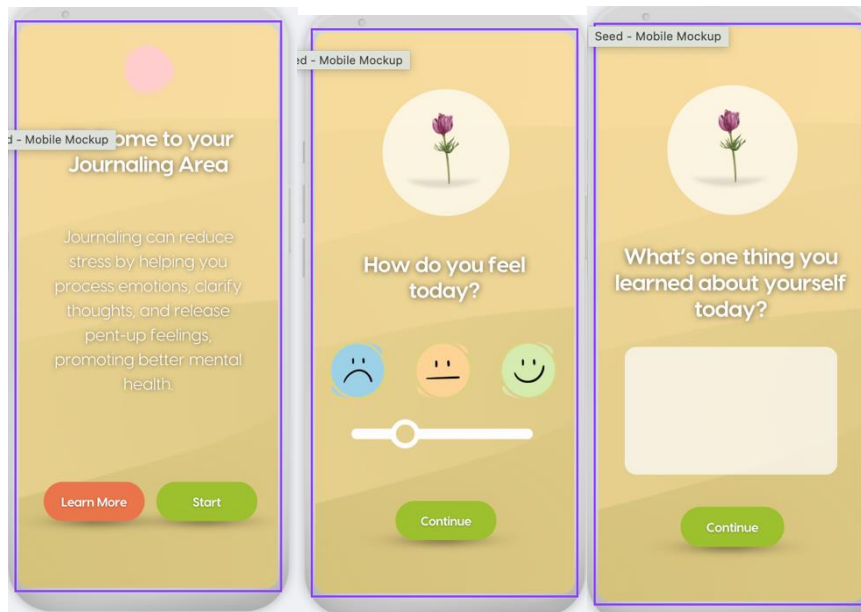

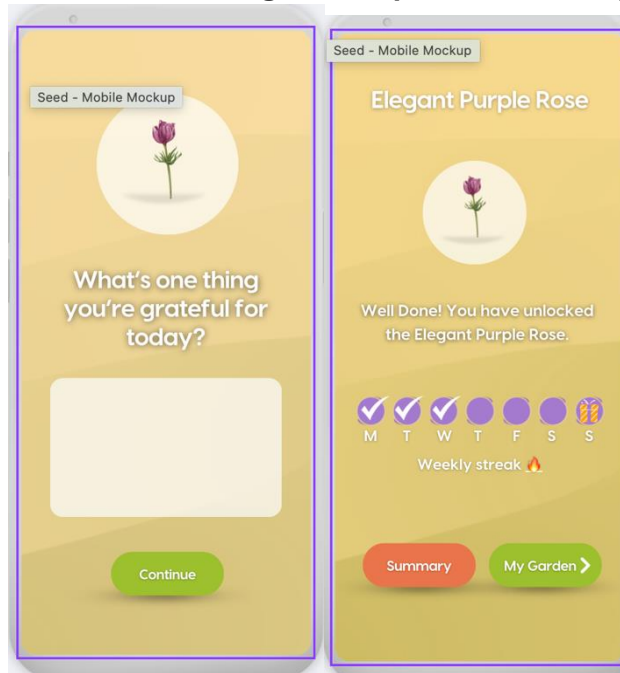**Figure 19 – Journalling User Experience Prototypes**

Figure 20 – Journalling completion prototype

Sprint 6 2024-11-20 to 2024-11-27

6.1 Overview
Plans for the week are to:
- Flesh out garden story and work on its development
- Finish Meditation pathway
- Integrate front-end and back-end code
- (Do not work on journalling for this sprint)
- Add UX designs into Documentation at the stage they were produced
- Add all user stories into documentation at the stage they were created/updated

6.2 Review
Progress made:
- Completed garden and seedbank stories
- Merged front- and back-end code, but broke something in the process. Needs resolving.
- Made garden scrollable in response to customer feedback.
- Added prototpyes for journaling path
- Built-out oracle messages for integration into back-end

6.3 Meeting minutes
6.3.1 Sprint Planning 2024-11-20

Summary

The team decided on the following priorities for this coming Sprint
- Flesh out garden story
- Meditation pathway
- Leave journalling
- Add UX designs into Documentation at the stage they were produced
- Add all user stories into documentation at the stage they were created/updated

6.3.2 Stand-up 2024-11-22

Who?	Progress	Blockers
Wei-en	Finished clock	Not sure if it meets requirements (needs a pause/restart function). Jack suggested not worrying about design, but integration with back-end needs work.
Yi-Tzu	Trying to figure out how to incorporate the database.	Need to work out how to do this – will ask for help in next scrum if needed.
Sol	Just added the user stories for the garden to the Trello board (in this Sprint). Going to flesh out the database of facts.	No blockers.

Nigel	Begun incorporating user stories and designs from Trello, Figma, Canva into conosolidated documentation	
Pragnya	Working on putting the scroll code and drop/drag code for the garden in X-code. Making design stories. Working on Canva designs for journalling and detox areas.	Need database. Do we want to change questions each time (or keep consistent)?

6.3.3 Stand-up 2024-11-25

Who?	Progress	Blockers
Wei-en	Built Oracle back-end to deliver messages.	Not sure what we are showing for the oracle? (Did you know? And Weekly Progress).
Yi-Tzu	Added back-end code so that when users complete a task it is recorded and then presented in front-end.	No blockers, but may need some help from Pragnya on additional elements for garden.
Sol	Produced all facts and tips for the oracle to progress through for other flows beyond journalling. Done additional mock-ups.	No blockers.
Nigel	Pulled all user stories into Consolidated Document. Begun pulling prototypes/UX design into document	No blockers.
Pragnya	Finished use case and design use case. Fixed position of mountain, river, sky in garden. Tidied up views folder structure. Fixed scrolling text. Buttons now all link to each other.	Need to work with Wei-en on seeds/seed bank front/back-end integration.

6.3.4 Sprint Review 20-11-2024

Summary:

Attendees:
Nigel, Yi-tzu, Pragnya, Wei-en, Sol

Agenda:
- Sprint activities to review:
  - Review progression of user stories
  - Decide what to present to customer
  - Review backlog

Yi-tzu
- Tried to merge front- and back-end code via GitHub, but something broke – need to try to fix that.

Pragnya

- Added all assets to the garden. Organised folder structure so it's much more organised. Added requirement use-cases, design use-cases and CRC cards for everything that is in progress and in this sprint.

- Organised garden seed "icons"

- Made the garden scrollable. Made the selection of seeds scrollable.

- For weekly summary view, should Oracle's tips depend on the level they're on?

Wei-en

- Stored Oracle statements from Sol's sheet into the database, allowing levelling of Oracle's prononcements to be displayed. Need to know when they should be added to the view.

Sol

- Added the spreadsheet of all the oracle facts and tips. On Trello added a couple of user stories (Garden user stories in response to customer feedback).

Nigel
- Updated document with user story details exported from Trello. Added images of prototypes into relevant sprint week

Actions

Determine which seeds to award for which tasks/levels	Sol

Determine logic for Oracle messaging	Sol

6.3.5 Sprint Retro Meeting 27-11-2024

Team held a retrospective to review processs. Discussions focused on flow of delivery of work through the week, particularly across front- and back-end teams. and the issues that the team has had with Github.

Who?	Went well	Could be improved
Sol	Went well. Hit Sprint targets.	Github issue highlights that we need to know what we need to pull together and get ready for that. Having more detailed stories is helpful, but misses the need for their integration: have one person responsible for the high-level user-story- Yi-Tzu
Pragnya	Lots of things went well. Wanted to be able to meet for the pair programming but deadlines for databases and foundations meant we couldn't. Like the user stories being broken-out and more detailed.	Would be good to have a timetable for individual pieces of work to enable integration. Have a meeting pre stand-up on Friday to then to able to demo in stand-up. Could we have user story(ies) to establish the link between levels (for Oracle pronouncements) and user's activities. And which seeds for which tasks.
Wei-en	-	I have to get feedback from front-end as soon as possible: hadn't talked to front-end team: were on different pages and so work didn't work. See Sol's point re back/front-end above.
Yi-tzu	-	Same as Wei-en: need to check front-end page. Need to
Nigel	Issues with integration actually a sign that we're collaborating more: a good sign!	Nothing to add.

Actions

Figure out a time to do pair programming	Pragnya

6.4 Backlog
The backlog at the end of the sprint is as follows

- Indigo 11 - User Story - Introduction to game
- Indigo 7 - User Story - Background Colours
- Indigo 17 - User Story - Journaling Main
- Indigo 27 - User Story - Journaling #1
- Indigo 28 - User Story - Journaling #2
- Indigo 29 - User Story - Journaling #3
- Indigo 7 - User Story - Mood logging Main
- Indigo 25 - User Story - Mood Logging #1
- Indigo 26 - User Story - Mood Logging #2
- Indigo 24 - User Story - Daily Messages #1 - Create message writer that references user progress values
- Indigo 22 - User Story - Daily Messages #2 - Display message on open
- Indigo 9 - User Story - Challenges
- Indigo 1 - User Story - Notifications
- Indigo 3 - User Story - Box Breathing Animation
- Indigo 15 - User Story - Heart rate data
- Indigo 4 - User Story - Select Meditation Sub Path
- Indigo 16 - User Story - Rewards
- Indigo 18 - User Story - Daily messages

6.4.1 Completed backlog tasks

The following backlog tasks were delivered during the sprint:

- (NEW) Indigo 32 - User Story - Garden – Settings
- (NEW) Indigo 34 - Database - Prompts, Facts, Tips
- (NEW) Indigo 33 - User Story - Garden - Seed Bank
- Indigo 20 - User Story - Completed Session #2
- Indigo 10 - User story - Clock

6.4.2 New backlog tasks

These tasks were added to the backlog and immediately included in this sprint, as a result of feedback from the Customer meeting:

Indigo 30 - User Story - Garden – Scrolling (completed – just awaiting testing)
- As a user i want my garden to be scrollable so i have lots of space to plant my seeds.
- Given user is in garden page, when user scrolls horizontally, then they move around garden

Indigo 31 - User Story - Garden - Drag and drop

- As a user I want to be able to drag and drop a seed into my garden so i can place it where i want.
- Given the user has a seed in their seedbank, when they select add to garden, then they can drag and place the seed in their garden and lock in place by clicking a tick button.

Indigo 32 - User Story – Garden – Settings
- As a user I want my garden page to have a settings button that gives me the option to move my seeds around.
- Given user has seeds placed in garden when settings and move seeds is selected then user is able to move seeds around their garden.

Indigo 33 - User Story – Garden – Seedbank
- As a user I want to be able to view my seed bank in the garden page, so that i can see what I have earnt
- As a user I want to be able to select a seed from my seed bank to add to my garden.
- Given that user has seeds in their seed bank, when seed bank button is pressed on garden page, then all of users seeds are displayed.
- Given that a seed is in a users seed bank, when user presses seed, then a prompt is displayed to add to garden.

Indigo 34 - User Story – Databases
- A database is required to store prompts, facts, and tips.
- These are currently in an excel document which can be found here:
- [https://computingservices-my.sharepoint.com/:x:/r/personal/sjrm21_bath_ac_uk/Documents/SEED_ACTIVITIES.xlsx?d=w6ceeeb5d3f874c8997f4605ba3d572a3&csf=1&web=1&e=0x7Gyx] (https://computingservices-my.sharepoint.com/:x:/r/personal/sjrm21_bath_ac_uk/Documents/SEED_ACTIVITIES.xlsx?d=w6ceeeb5d3f874c8997f4605ba3d572a3&csf=1&web=1&e=0x7Gyx "smartCard-inline")

6.5 Exception handling
- Can't move any reward item beyond the current displayed extent of the garden: need to release to scroll. Would be better if the garden scrolled upon reaching the edge of the screen whilst dragging a reward item.

6.6 Product documents
6.6.1 Customer meeting and analysis
Summary
Overall the customer seemed satisfied but questioned how much progress we had made. We explained that we had been working on the integration of front and back-end, which had been problematic. They also asked about the oracle and we incorporated this feedback to make the oracle interaction more obvious through design.

Suggested that we may want to make the garden scrollable so that additional seeds can be added even if the screen is full: this was subsequently added to the backlog.

Notes
How does the user know that the pink dot is the oracle?
Is the garden a 2D landscape
Want to add more elements if user is reaching the edge of the screen
Seems like you've got the whole thing there end-to-end
Can you show me oracle messaging? Demo'ed Oracle messaging.
We're dependent on that particular mp3? Or could do text-to-speech which would enable different languages.
Have we made progress since last week?

6.6.2 User stories

As noted above in the new backlog section, new user stories were added to the backlog.
6.6.3 Tests
 • Tests are described in the "Given, When, Then" format in the user story descriptions.

6.6.4 Requirements use cases

UC7-1 Title: Allow the user to scroll through to see three pages in the virtual garden page
UC7-2 Actors: User
UC7-3 Precondition: User is on virtual garden page
UC7-4 Basic Flow: User can swipe left two times in the virtual garden.
UC7-5 User Story Referenced: Indigo 30 - User Story - Garden – Scrolling

Indigo 30 - User Story - Garden – Scrolling
Requirement Use Case:
- **Title:** Scrollable Garden
- **Actors:** User, Garden UI
- **Precondition:** User is on the garden page.
- **Flow:**
  - User accesses the garden view.
  - The garden view allows horizontal scrolling.
  - User scrolls to navigate different areas of the garden.

Indigo 34 - User Story – Databases
Requirement Use Case:
- **Title:** Store Prompts, Facts, and Tips in Database
- **Actors:** Database System, App

- **Precondition:** Prompts, facts, and tips are available in an external Excel document.
- **Flow:**
    - Convert Excel data into a structured database format.
    - Store prompts, facts, and tips in the database.
    - Retrieve appropriate data for different app features.

6.6.5 Tests
•As described in the individual use cases above

6.6.6 CRC cards

Class Name: Garden	Version: 1.0
Description: Shows all elements of virtual garden	Associated Use Cases: UC7
Responsibilities:	Collaborators:
Render a large, scrollable garden UI. Handle horizontal scroll gestures.	User Database Count

Class Name: Addelements	Version: 1.0
Description: Manages garden seed options and enables seed movement.	Associated Use Cases: UC7
Responsibilities:	Collaborators:
View garden elements such as seeds, animals and trees under each activity.	Garden

Class Name: Database	Version: 1.0
Description: Manages the app's database	Associated Use Cases:
Responsibilities: Import data from the external Excel document. Organize prompts, facts, and tips in a structured database. Provide access to relevant data for app features.	Collaborators: DailyMessageManager JournalingManager

6.6.8 User interface design

Work was done on refining the design of the seed bank and digital garden for collection and management of rewards, as well as initial front-end development, as seen in figure 21 below:

Figure 21: Garden and seedbank prototypes

Sprint 7 2024-11-27 to 2024-12-04

7.1 Overview
In this sprint, the team is aiming to:
- Implement the levelling logic so that users earn the correct reward for the activity that they have performed, and receive the correct oracle message depending on what they have done.
- Begin on the Product Documentation and have a clear plan for completing them during the following sprint

7.2 Review
The team considerably overdelivered vs. Its own expectations this week, particularly given the absence of Jack, delivering all prioritised backlog tasks and additionally delivering further stories from the backlog.
- Managed to implement the level logic and rewards
- Additionally managed to add all Journalling and Digital Detox stories into the sprint
- Made a start on product documentation: first draft of user guide and of installation manual

7.3 Meeting minutes
7.3.1 Meeting Sprint Planning – 2024-11-27

Sol led the team through his prioritisation of the current backlog. Noting the number of outstanding items still to be delivered from those prioritised in the prior sprint, the team prioritised the completion of the user journey within the existing flow – i.e. the allocation of the correct reward following completion of an activity and logic behind displaying the relevant oracle message.

Additionally, the team noted the documentation requirements and decided to make a start on their production, aiming to have a clear plan for completion during the final week.

These tasks were therefore prioritised:

- (NEW) Indigo 41 - User Story - Area Levels
- (NEW) Indigo 42 - User story - Completing Session #4
- (NEW) Indigo 40 - User Story - Area Levels UI
- (NEW) Indigo 39 - User Story - Main Area Levels
- (NEW) Indigo 37 - User Story - User Guide
- (NEW) Indigo 36 - User Story - Installation Guide
- (NEW) Indigo 35 - User Story - Maintenance Guide

7.3.2 Stand-up 2024-11-29

Who?	Progress	Blockers
Wei-en	Figuring out how to make the Oracle work (with Pragnya)	Having problems pulling the code – meet with Yi-Tzu afterwards to figure out what's wrong.
Yi-Tzu	Used Pragnya's new view and synched all the code. Added the function to the view and it now works. Still need to finish the conditions in the seed bank.	No blockers.
Sol	Made a start on the user guide.	Need access to Github to get access to the app.
Nigel	Put together skeleton for product documentation, including suggestions for content blocks	No blockers.
Pragnya	Added mountains back to garden. Fixed some bits of font in front end. Made the journalling pages: five of them. Slides/text boxes. Needs storing somewhere. Additionally taken the tips out of the weekly summary for meditation flow. Also working on the level-ups/reward.	No blockers so far.

7.3.3 Stand-up 2024-12-01

Who?	Progress	Blockers
Wei-en	Linked meditation oracle statements to front end so that they display when the user clicks 'learn more"	How should journalling "tips" button link to the tips: which ones?
Yi-Tzu	Tried to see if TestFlight could be used. Not free so used Appetize instead. Linked database to journalling section: now track usage	TestFlight not free, so come up with another way to allow users to try
Sol	Nothing changed since Friday, but now that I	Nothing from here
Nigel	No significant progress since Friday stand-up	No blockers

Pragnya	Added to journalling section. Think the front end is 95% finished. Added digital detox section	No blockers

7.3.4 Sprint Review 2024-12-04

Summary:
Amazing team progress this week, with journalling section largely complete and implementation of levelling/rewards in the back-end. Some integration issues being resolved and back-end logging still to be completed but great progress. Additionally made a start on the documentation which will be a focus for next week's sprint.

Attendees:
Nigel, Yi-tzu, Pragnya, Wei-en, Sol

Agenda:
- Sprint activities to review:
    - Review progression of user stories
    - Decide what to present to customer
    - Review backlog

Pragnya
Still not quite working, but think we can get it working for the Customer Meeting. Added four tabs for the journalling seciton, grouped into Mindfulness, Gratitude, Self Reflection and Goal Setting. Worked until this morning ... !
Journalling slider needs storing in the database, otherwise journalling all done.

Yi-tzu
Been helping Pragnya with Github set-up and incorporating Jack's historic front end changes. Additionally been working on the back-end functionality for levels. Just need the actual values in the Excel sheet: logic is working.

Wei-en
Currently working on the journalling questions: getting the user's responses stored in the database so that they have a log of them.

Sol
Compiled the user guide with all the screen shots. Noticed that name defaults to Jack (not the user's input one)

Nigel
Updated document with user story details exported from Trello. Added images of prototypes into relevant sprint weeks.

7.3.5 Sprint Retro 2024-12-04

Overall the team were very happy with the progress made. There was some discussion about what could have been done to better estimate the amount of work we were actually able to achieve in the week, and the value of the Scrum process in managing our work.

Who?	Went well	Could be improved
Sol	Went v well. Blew past backlog goals.	Now need to polish things up.
Pragnya	Everything went well. Found a time to pair program which was very helfpul.	No changes
Wei-en	Everything quite good. Front end seems almost complete: just need to integrate with DB.	Would be good to pair program with others.
Yi-tzu	Everything OK now. All good.	Nothing.
Nigel	Everything went well.	Could we have been better at estimating what we could have done?

7.4 Backlog

Following completion of the sprint, the backlog consisted of the following user stories. Given the time constraints it is likely that most of these will not be delivered now before the end of the coursework, the focus being on finishing the remaining tasks that are in progress including completing documentation.

- Indigo 24 - (Daily Messages) Create message writer that references user progress values
- Indigo 22 - (Daily Messages) Display message on open
- Indigo 9 - User Story - Challenges
- Indigo 1 - User Story - Notifications
- Indigo 3 - User Story - Box Breathing Animation
- Indigo 15 - User Story - Heart rate data
- Indigo 16 - User Story - Rewards
- Indigo 18 - User Story - Daily messages

7.4.1 Completed backlog tasks

The team made excellent progress this week, with the following tasks completed and several others in progress with small pieces of back-end integration required to complete.

- (NEW) User Story - Detox Start
- Indigo 7 - User Story - Mood logging Main
- (NEW) Indigo 44 - User Story - Detox During
- Indigo 26 - User Story - Mood Logging #2
- Indigo 25 - User Story - Mood Logging #1
- Indigo 45 - User Story - Detox Finish
- Indigo 46 - User Story - Facts
- Indigo 31 - User Story - Garden - Drag and drop
- Indigo 19 - User Story - Completing Session #1
- Indigo 29 - User Story - Journaling #3
- Indigo 28 - User Story - Journaling #2

7.4.2 New user stories and associated backlog tasks

The following tasks were added to the backlog at the start of the Sprint. Some of these were able to be completed within the Sprint:

Some of these related to the requirement to produce product documentation for the assessment; some were about the implementation of levels of accomplishment and their display to the user, and some about the Digital Detox path (see below):

- Indigo 35 - User Story - Maintenance Guide
- Indigo 36 - User Story - Installation Guide
- Indigo 37 - User Story - User Guide
- Indigo 38 - User Story - Detox Main
- Indigo 39 - User Story - Main Area Levels
- Indigo 40 - User Story - Area Levels UI
- Indigo 41 - User Story - Area Levels
- Indigo 42 - User story - Completing Session #4
- Indigo 43 - User Story - Detox Start
- Indigo 44 - User Story - Detox During
- Indigo 45 - User Story - Detox Finish
- Indigo 46 - User Story - Facts

In more detail, these are:

Indigo 35 - User Story - Maintenance Guide
- Detailed sign-posting of how to navigate the code and where and how to make extensions

Indigo 36 - User Story - Installation Guide

Indigo 37 - User Story – User Guide
As a user of the app, I want to know how to use the app s
- scenario-driven explanation of how to use the product

Given a user has installed the app, when they want to use the app, then they should be able to successfully access the app, complete a session and receive their first reward

Indigo 41 - User Story – Area Levels
As a user I want to have a level score for each of the three pathways, I want this level to increase as I complete tasks so I can see my progress.

Given user is completing activities in a given area, when an activity is completed, their level score for that area is incremented by 1.

Indigo 39 - User Story – Main Area Levels
As a user I want my area levels to increment up as i complete activities and for this to be displayed.

Given user has level in area, when user is on activities/progress tab, then area level is displayed.

Given user completes task, when task is completed level increments, then current area level is displayed in activities/progress tab.

Indigo 40 - User Story – Area Levels UI
As a user I want my level score to be represented as an integer in a circle, so i can see my progress.

Given User has a level in area, when a user completes an activity, their level for that area is updated in the database, then their new level is displayed in the circle.

Indigo 42 - User Story – Completing Session #4
As a user I want my area score to increment up when I complete a session, I want this to be weighted to the length of the task I complete so I can feel more rewarded for completing harder tasks.

Given user is completing a task (meditation, journaling, digital detox), when the task is completed then the users level for the specific area increases by 1.

Indigo 46 - User Story – Facts
As a user I want the oracle to tell me facts about the different pathways when I click on them.

Given user is on activities page, when a pathway is selected then then a random fact from that pathways fact database is displayed.

7.5 Exception handling

- There were again some issues in the integrating the code, but these were successfully resolved.
- Although the resolution of the vertical scrolling of horizontal text was successful, the horizontal scrolling was still flagged by the customer as problematic, and we will look to patch in the sprint.

7.6 Product documents

7.6.1 Customer meeting and analysis
Summary

Overall, seemed very happy with progress. Suggested making the oracle more explicit and keeping the text in the same position both vertically and horizontally.

Notes

Still hate the jumping text.
Levels for mediation
Have oracle page be more explicit
Add all open-source audio files for meditation
Oracle pages designed, just need to upload audio files
Just filling in stuff for existing mechanics to use

7.6.2 User stories

7.6.4 Requirements use cases

Requirement Use Case:
- **Title:** Increment Area Levels
- **Actors:** User, Activity Tracker
- **Precondition:** User is completing activities in a specific area.
- **Flow:**
  o User starts an activity in a specific pathway.
  o Upon completing the activity, the user's level for that pathway is incremented by 1.

Indigo 46 - User Story – Facts
Requirement Use Case:
- **Title:** Display Facts for Pathways
- **Actors:** User, Oracle Fact
- **Precondition:** User is on the Activities page.
- **Flow:**
  o User selects a pathway on the Activities page.
  o A random fact related to the pathway is fetched from the database.
  o The fact is displayed in the UI.

7.6.6 CRC cards

Class Name: AreaLevelManager	Version: 1.0
Description: Manages area levels	Associated Use Cases:
Responsibilities:	Collaborators:
Track area levels for pathways (Meditation, Journaling, Digital Detox). Increment the level for a pathway when an activity is completed	Count Database

Class Name: OracleFact	Version: 1.0
Description: Manages facts	Associated Use Cases:
Responsibilities:	Collaborators:
Stores facts that correspond to each level that the user is in. Access facts when user clicks on 'Learn More'	Database

7.6.8 User interface design

Work was done on the digital detox path design (see figure 22 below), and this was then incorporated into the front-end work delivered during the sprint:
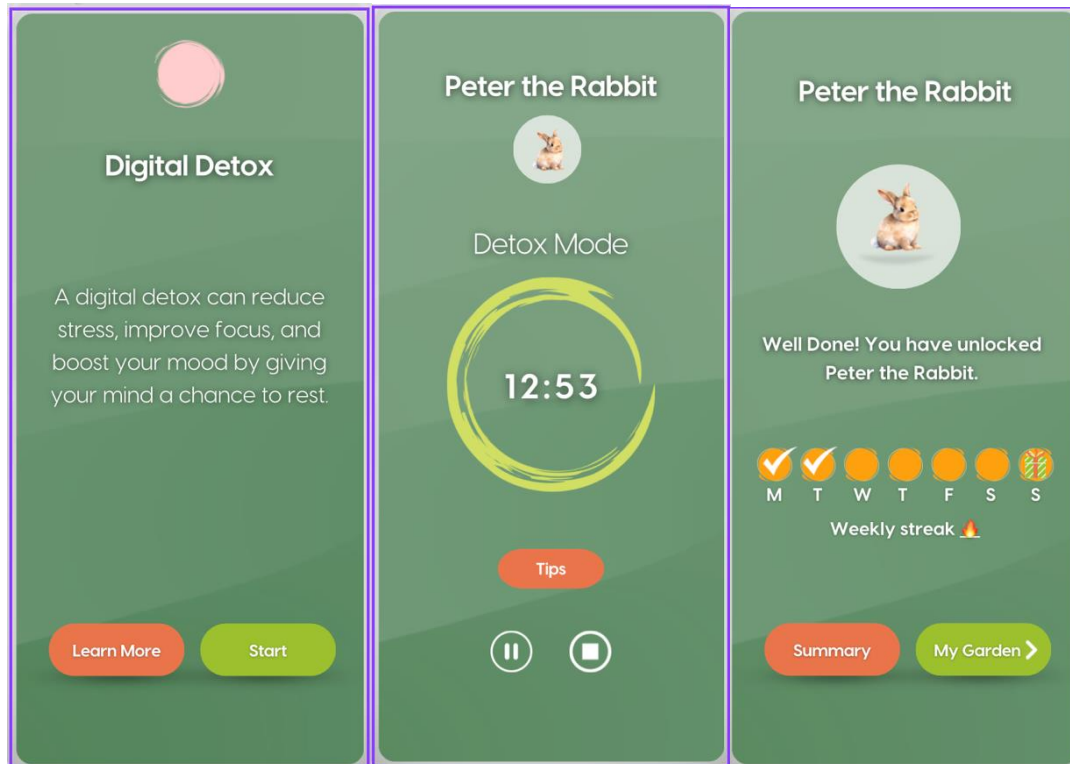

Figure 22 – Digital Detox Path Prototype

Sprint 8 2024-12-04 to 2024-12-13

8.1 Overview
The focus of this sprint is finishing off the missing pieces of back-end integration, tidying up and completing documentation, both Sprint and Product documentation.

We are not intending to deliver significant new features in this final full sprint (which extended to Friday 13th for submission of documents).

8.2 Review
- Completed documentation ready for submissions
- Final fixes, notably completion of back/front end integration associated with levels, rewards and oracle messages

8.3 Meeting minutes
8.3.1 Meeting Sprint Planning – 2024-12-04
At Sprint Planning, it was agreed that the focus would be on completing the existing tickets not yet completed and on completing documentation. No additional backlog tasks were therefore added into the sprint.

8.3.2 Stand-up 2024-12-06

Who?	Progress	Blockers
Wei-en	Still working on journalling prompt question.	Need Pragnya to update sheet of prompts, can then integrate.
Yi-Tzu	Fixed a front end issue and added the virtual garden logic: the right reward now shows up for each session, and the rewards are added to the garden when the use completes the session.	No blockers
Sol	Update the user guide with detail of detox section. Gone through installation process	No blockers
Nigel	Done limited sprint documentation: will do more on it next week	Other coursework!!
Pragnya	Uploaded all mp3s into meditation, just need to stitch them up. Done some work on design and CRC cards for sprint 3.	Need to work with Yi-tzu on the pop-up page for adding seed to garden.

8.3.3 Stand-up 2024-12-08

Who?	Progress	Blockers
Wei-en	Pushed journalling back-end as previous one seemed to be gone. Tried to add some new columns for the model. Still need to figure out how to save the data into the back-end.	Note that need to remove current database if you want to run the app.
Yi-Tzu	Tried to combine function in detox – resulted in some conflicts. Think we can finish before Wednesday	No blockers.
Sol	Made the installation document. Went through the process and it worked! User guide also updated.	No blockers.
Nigel	Begun enumerating user stories/backlog tasks and adding figures to images in the documentation. Will complete later today.	No blockers
Pragnya	Little bit behind on CRC cards: should be done by tomorrow. Done design cases and requirement design cases. Added both Oracle pages and introducing activities. Have to work on the moving fonts.	No blockers.

8.3.4 Stand-up 2024-12-13

Who?	Progress	Blockers
Wei-en	On the weekly page. Can probably finish today and push to github.	No blockers.
Yi-Tzu	Tried to figure out the drag position issue. Revealed another issue.	No blockers
Sol	Ready to make video once today's push is complete	No blockers
Nigel	Completed team questionnaire	No blockers
Pragnya	Changed CRC cards in responses to feedback,	No blockers

	numbered use cases and finsihed maintenance guide	

8.3.4 Sprint Review 2024-12-11

Summary:
The team reviewed the work completed during the week, focused on the completion of backlog items from the product, notably the back-end/front-end integration of levels, messages and rewards; and the completion of product documentation.

Attendees:
Nigel, Yi-tzu, Pragnya, Wei-en, Sol

Agenda:
- Sprint activities to review:
    - Review progression of user stories
    - Decide what to present to customer
    - Review backlog

Pragnya
This week focused more on the documentation, doing use cases, CRC cards and design use cases. Rest are just, just need to do put into the right format.

Also worked on the maintenance guide, including reference to Apple documentation.

Also added all the meditation mp3s and worked on the add seed pop-up.

Yi-tzu
Fixed all the front- and back-end issues to combine data into the database. So now the user can see each message at the right point and receive the correct seeds when they finish the project.

Wei-en
After Pragnya did the levelling guide for journalling (in Excel) implemented this matching the journalling prompt to the level and activity that the user is currently on in their journey, storing the response to the prompt in the database.

Removed the tips from the weekly view and added a link to see the journal entries that you have made during the week for reflection.

Sol
Completed user guide and installation guide as part of product documentation. Stepped through installation guide and it worked successfully. Need to add figure numbers to images in these documents.

Nigel

Reviewed the process document, filling in some gaps, adding figure numbers to all images and enumerating user stories/backlog tasks.

Actions

Sol – Add figures to the images in the product documentation

8.3.5 Sprint Retro 2024-12-11

Who?	Went well	Could be improved
Sol	Everything seemed to go well	Nothing to say
Pragnya	Evrything went well. Document skeletons really helpful for product documentation	Wish I had something better to say!
Wei-en	Well done everyone! Special thanks to Pragnya. Happy Christmas!	Nothing
Yi-tzu	-	Still struggling with github!
Nigel	Everything seemed to go well this week.	Let's celebrate as a team … with Jack!

Actions:
Organise drinks after video presentation with Jack – Nigel
Prepare video - Sol

8.4 Backlog
The outstanding backlog (which will not be completed) contains the following:

Indigo 24 - (Daily Messages) Create message writer that references user progress values
Indigo 22 - (Daily Messages) Display message on open
Indigo 9 - User Story - Challenges
Indigo 1 - User Story - Notifications
Indigo 3 - User Story - Box Breathing Animation
Indigo 15 - User Story - Heart rate data
Indigo 16 - User Story - Rewards
Indigo 18 - User Story - Daily messages

These items were not prioritised after discussion within the team and with the customer.

8.4.1 Completed backlog tasks

The following items were completed during this sprint:

Indigo 17 - User Story - Journaling Main
Indigo 27 - User Story - Journaling #1
Indigo 42 - User Story - Detox Main
Indigo 40 - User Story - Area Levels UI
Indigo 37 - User Story - User Guide
Indigo 39 - User Story - Main Area Levels
Indigo 36 - User Story - Installation Guide
Indigo 46 - User Story - Facts
(NEW) Indigo 51 User Story - Journaling sections

8.4.2 New backlog tasks
Just one new backlog item was created this week, associated with the user story
"Journalling Sections" (see below)

8.5 Exception handling
- • any events/situations that required unusal actions • link (cross-reference) to relevant product documents

8.6 Product documents
8.6.1 Customer meeting and analysis

8.6.2 User stories

The following user story was added to ensure that the journalling path worked as intended

(NEW) Indigo 51 User Story - Journaling sections

As a user I want the journaling section to have segregated sections that correspond to aspects of mindful introspection so i can have a better understanding of my progress and activity.

Given user is in activity page, when user selects journaling area, then mindfulness, self-awareness, emotions, and creativity are displayed.

8.6.3 Tests
  • description and connection to stories
8.6.4 Requirements use cases
  • new use cases
  • revised use cases
  • final set
  • *brief* narrative to explain changes
8.6.5 Tests
  • description and connection to use cases
8.6.6 CRC cards
  • new versions of CRCs
  • revised versions of CRCs
  • final set
  • *brief* narrative to explain changes • connection to use cases
8.6.7 Design use cases
  • new use cases
  • revised use case
  • final set
  • *brief* narrative to explain changes
  • connection to requirements use cases
8.6.8 User interface design
  • No new user interface design this sprint