Introduction

This document details the project plan and approach for the development of a Cyclical Resource Management Game. The aspects discussed in this document are the Development Team Roles, Project and Time Management Methods, Project Roadmap, Development Technologies, and the Testing and Quality Assurance Methods for this project.

Team Roles and Work Division

The Roles for the project are as follows:

- Diane Bada: Programmer, System Designer, Co-Project Manager
- Shen Reddy: Programmer, System Designer, Co-Project Manager, Supporting Artist
- Caleb Mayamona: Lead Artist, Supporting Programmer

All team members share equal responsibility for Core Game Design.

Project and Time Management

Project and Time Management is facilitated through Microsoft Teams and Whatsapp. Tasks, dates, goals and updates are decided during weekly meetings, and are created and tracked using these platforms:

- Documents pertaining to system design and calculations are uploaded to Teams
- Teams is used to facilitate online group call meetings
- Whatsapp is used to provide discussion over text if the team cannot call on Teams

Time Sheets will be implemented to track tasks in the following manner:

Task	Member	State	Time Taken
Movement	Shen	completed	30 min
Growth	Diane	completed	30 min
Seed Concept	Caleb	completed	60 min

The development approach for this project is to follow an agile process whereby tasks, goals and implementations will be subject to change and iteration based on the state of the development of the project.

Workflow Process:

Set Design and Project Goals -> Design Systems -> Implement Systems -> Test and Iterate -> Repeat

Project Roadmap and Milestones

The Project Roadmap and Milestones have been based on the timeframe and key dates given for this project as a part of the brief.

Refer to the Game Design Document and Detailed Document for details about these goals and systems.

- First Prototype: 23 September 2022
    - Showcase Basic Implementation of Core Mechanics
        - Player object can move around an environment scene using arrow keys and WASD
        - Player can watch 2 resources grow and then collect those resources
        - The player can switch between the above mentioned scenes

- Continued Development and Testing
    - Create concept art for weapons, seeds, and crystals
    - Add responsive camera movement - allow a lerp area
    - Add 2 new areas for the player to explore
        - Crystal area
        - Seed area
    - Implement the daily cycle
        - Change environment brightness to indicate day phase
    - Add resource growth and collection for each environment area
        - Collect a wild resource
        - Place wild resource in a grid
        - Resources grows
        - Collect resource - gets added to inventory
        - Have static enemies spawn in night phase
            - Enemies spawn at night but do not do anything

- Pre-Alpha: 5 October 2022
    - Showcase current state of prototype

- Continued Development and Testing
    - Implement Full system design discussed in the Details Document
    - Implement Art Assets and Animations based on design requirements.

- Alpha: 17 October 2022
    - Showcase Working Alpha

- Oiling: 24 October 2022
    - Address any System Issues, Bugs, Balancing issues etc

- Final Version: 7 November 2022
    - Present Final Game

Development Technologies

- Unity will be used as the Game Development Engine.

- GitHub will be used to facilitate version control and remote development.

- Procreate and Krita will be used to develop art assets and animations.

- Google Docs will be used to facilitate documentation.

Testing and Quality Assurance

Concurrent testing will be conducted throughout the entire development cycle.

Testing and Quality Assurance will be conducted through:

- Unit Tests: Development Team will test all systems and functions to ensure functionality and that the design goals have been achieved.
    - Team members responsible for implementing systems will determine if the system functions according to the design and revise if the system needs fixes.
    - If a system is deemed as usable by the team member, then it will be kept in the prototype. If the system is not functioning, the team member must consult with the rest of the team for advice and help. The system will then either be handed over to a new team member or the current team member can redevelop the system from the ground up.

- Play Tests: The project will be play tested by peers, colleagues, lectures and tutors. Play tests will be conducted for specific cases to receive feedback advice about the current development state. Feedback will be used to address any necessary changes and iterations.

Playtest Structure:

Playtests will be conducted in person. The same 6 playtesters will test each phase of development and be used as a core testing group.

- Playtesters will be asked to test a section of the prototype and will be given context of the testing scenario
- Specifc questions will be prepared before hand by the team, based on the requirements of the test, and given the to testers as a google form to fill out after the playtest as feedback.
- Playtesters will also be asked for immediate verbal reaction feedback after the test
- The team will watch how the playtesters interact with the system and record this data and compare it to their feedback.

Playtest data will be evaluated based on the feedback and design goals and iterations will be made accordingly.

Conclusion

The project plan for the development of a Cyclical Resource Management Game has been discussed, the methods used to implement the plan will allow for an efficient workflow timeline to be followed.