Fruits & Vegetables Concentration Game

Software Project Management Plan

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Version: 1.5

Preface

The basis of this project stems from our interests in spreading the awareness of proper nutrition and exercise to the general public. Due to an increasing reliance on technology, more people have adapted a sedentary lifestyle, a common cause for many health issues across the United States.

In our effort to give guidance on healthy living, our development team would like to create an interactive game website. The purpose of this website is to provide a fun way to learn about healthy foods, while maintaining a level of simplicity suitable for almost any age.

Titled the "*Fruits and Vegetables Concentration Game"*, the game is based on the classic memorization game titled *"Concentration"*, where players take turns finding matching pairs among a grid of face-down cards. When a pair of cards are guessed correctly, a set of facts will be provided for the food item.

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Introduction

Project Description:
The project will take the form of an interactive game website where players can participate in a card-based memorization game. Players take turns finding matching pairs of fruits and vegetables from a grid of face-down cards. The player with the most matching pairs will win. If the game is played alone, the goal is to find all matching pairs in as little turns as possible. The game will have an educational aspect, where players can read descriptions of the fruits and vegetable pairs they have found.

Project Deliverables:
The development of a website which will host the *Fruits & Vegetables Concentration Game*.

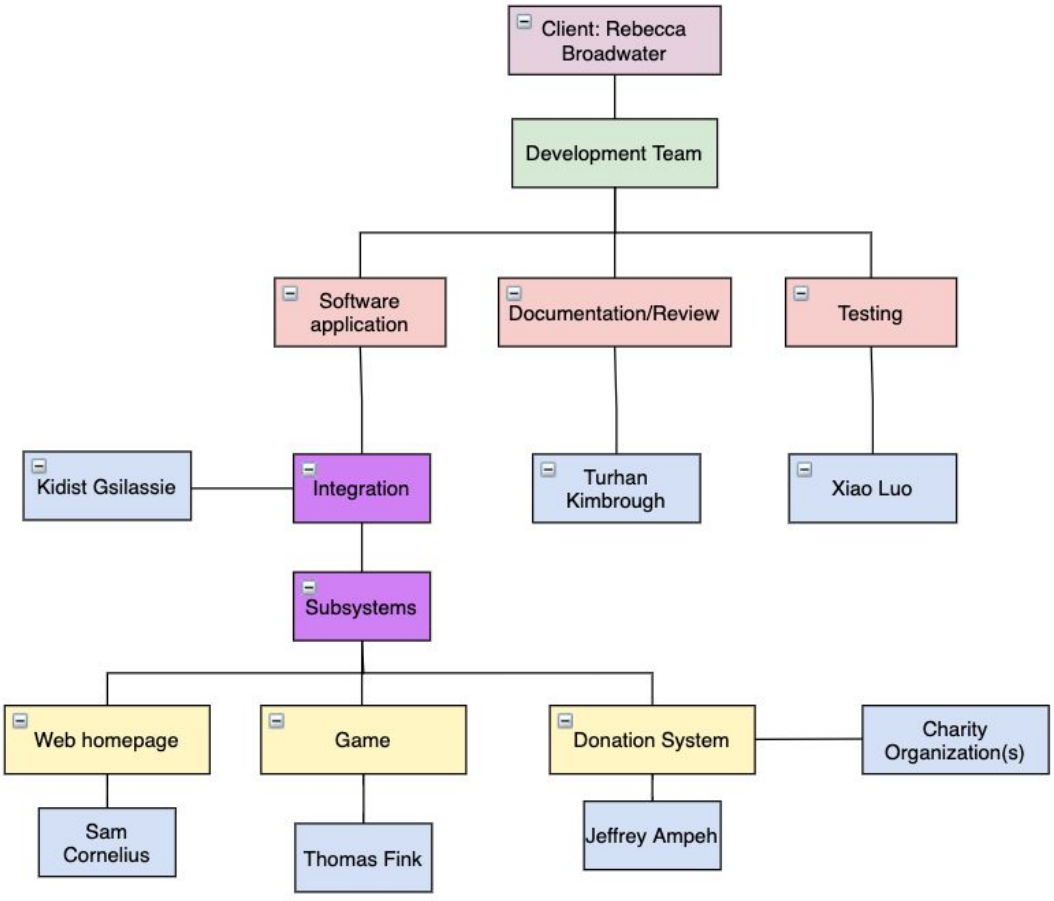
- ➔ GitHub repository link (9/18)
- ➔ Use Cases (9/18)
- ➔ Requirements (9/18)
- ➔ Software Project Management Plan (9/22)
- ➔ Skeleton of software test code (10/6)
- ➔ Project Review part I/II/III (10/19)
- ➔ Software Deployment Plan (10/27)
- ➔ Technical Status Presentation (10/27)

Project Organization

Process Model:

The process model we will be using is Agile software development. With Agile, we will focus on deploying software in iterations and getting feedback from the client along the way. This model allows us to be flexible with regards to goals and requirements.

Organizational Structure:



Organizational Interfaces:

- ➔ *Rebecca Broadwater* - Client recipient of the product
- ➔ *Amaizeing Shelters* - Nonprofit charity (donee) involved with product
- ➔ *Brock O. Lee Food Bank* - Nonprofit charity (donee) involved with product
- ➔ *Fruits and Veggies Fun* - Software Development Team creating the product

Project Responsibilities:

Team Member	Title	Responsibilities
Jeffrey Ampeh	Software Assurance	vulnerability analysis, architectural hardening, secure payment systems
Sam Cornelius	Interface Designer	website design, manage plugins, maintain platform independence
Thomas Fink	Backend Developer	server-side programming, develop data access mechanisms
Kidist Gsilassie	Systems Integrator	coordinate subsystem architectures, research compatibility, incorporate automation
Turhan Kimbrough	Project Lead/Support	point-of-contact, writing documentation, troubleshooting, general resources and guidance, assisting others
Xiao Luo	Software Tester	design test cases, software review, post-test suggestions, code optimization

Managerial Process

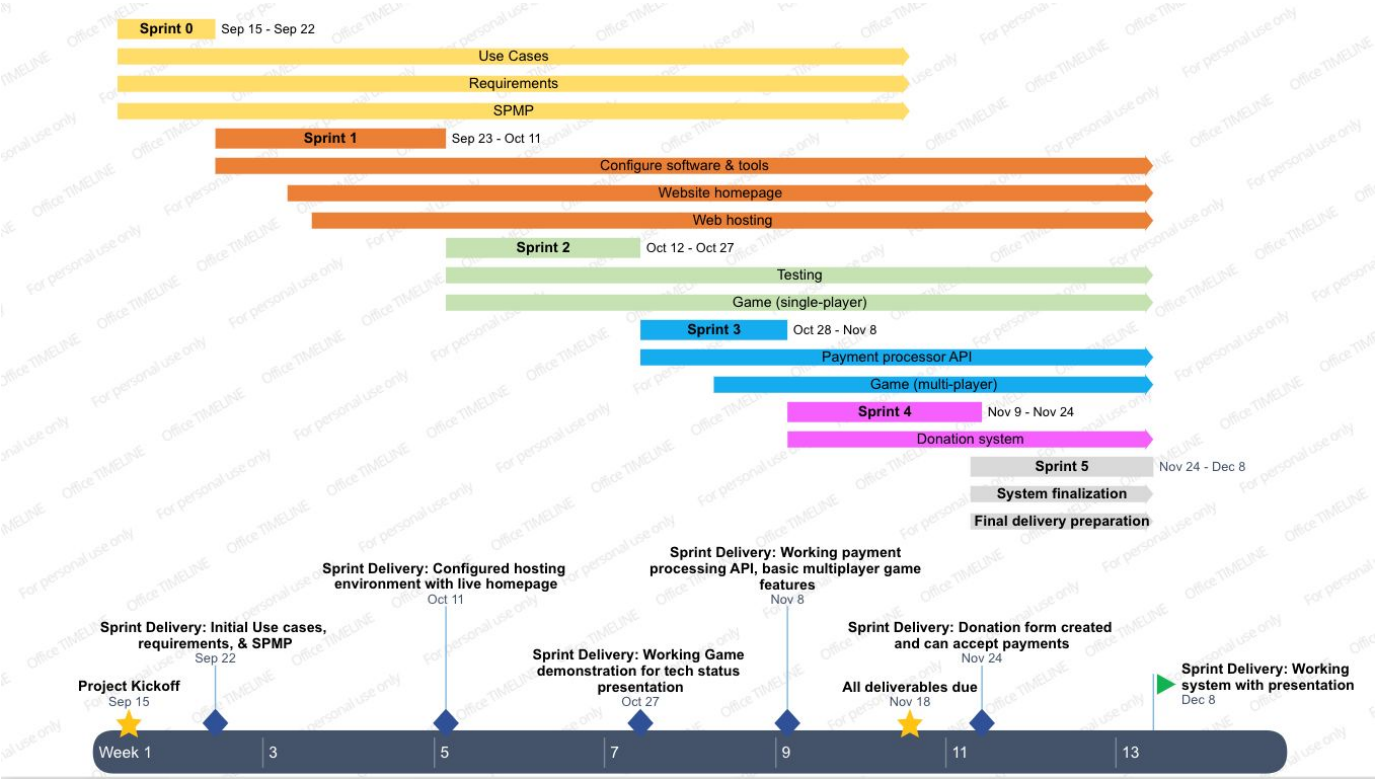
Objectives:

- ➔ Create a responsive website which can be accessed via desktop, mobile, or tablet.
- ➔ Include a fun and interactive game component to learn about different fruits and vegetables, with support for single player and multiplayer.
- ➔ Include a robust and secure payment system which accepts user donations, powering nonprofit organizations.

Priorities:

- ➔ Construct website theme and ensure it can support mobile, tablet, and desktop views
- ➔ Implement single-player functionality for the game component, implementing multiplayer later
- ➔ Instantiate a donation form for one charity organization before creating donation forms for others

Tentative Schedule:



Anticipated Budget:

- ➔ $10/year for website domain
- ➔ $100 extra per year for content management/integration

Project Anticipations:

Assumptions:

- ➔ We can host to servers of our choice
- ➔ Project costs will stay the same throughout development
- ➔ We can choose which software components power the product
- ➔ Client/users access the website with a modern web browser

Dependencies:

- ➔ Data processing engine
- ➔ Payment system
- ➔ Game integration
- ➔ Responsive web design

Constraints:

- ➔ Less than 15 weeks time for project submission
- ➔ Pure virtual collaboration
- ➔ Varying experience levels among project members

Risk Management (Problem-solution):

- ➔ *Problem:* What if the project becomes too expensive?
  Solution: Look into alternative technologies and subsystems.
- ➔ *Problem:* What if the project becomes too large in scope?
  Solution: Prioritize certain requirements and focus on getting their implementation right.
- ➔ *Problem:* What if certain members leave the project?
  Solution: We will dynamically take new roles based on available skill sets.
- ➔ *Problem:* What if the client doesn't like the developed prototype?
  Solution: Using the software development approach of agile, adjusting to change easily.

Monitoring Mechanism:

We will have weekly status meetings with the client. During these meetings we will discuss any issues, deliverable status updates, and suggestions for the product.

Technical Process

Approach:

Methodology:

The application will incorporate a subsystem architecture where several system components are developed in isolation and later integrated. The subsystems will consist of a web home page, game, and donation system. A content management system will serve as the foundation for each subsystem. All content on the website will be delivered as web pages.

Tools:

- ➔ Godot game engine
- ➔ Bootstrap frontend framework
- ➔ Namecheap
- ➔ Stripe Checkout
- ➔ GitHub

Documentation Plan:

Modifications/revisions to our project plan will be reflected in the Software Project Management Plan. Supporting documentation will be up-to-date, and revisions will be pushed to the GitHub repository. A complimentary upload will be submitted to Blackboard as well.

Project Support Functions:

Quality Assurance:

- ➔ Ensure software is up-to-date
- ➔ Ensure software bugs are caught early
- ➔ Ensure appropriate software testing is in-place
- ➔ Ensure quality software tools are used
- ➔ Ensure proper communication among members of the project

Configuration Management Plan:

- ➔ Version each revision to documentation
- ➔ Make frequent commits to the main branch of the stable codebase
- ➔ Note all updates made to tools being used

Verification & Validation Plan:

- ➔ Ensure testing begins early
- ➔ Ensure proper tests are made
- ➔ Ensure the passage of tests
- ➔ Ensure each project member reviews the codebase

Work Breakdown Structure