[WORKING TITLE] Documentation Master File

CPSC-362-04 - Professor Anthony Le

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[Summary](#)

This document has been formed with the intention of compiling all documentation related to individual and group work on [WORKING TITLE]. It is being initially compiled by the group's note-taker and is planned to be available to the entire group as part of an ongoing approach to centralized updating for the project. Ultimately, it is hoped that this document will contain proper tools for navigation and organization - including a table of contents and some form of larger aggregation of data relating to the project. Still, these goals will likely require time to implement, as they rely upon the base of documentation that this team will produce over the course of production.

20-10-2020 - Presently, this document will comprise a fairly simple collection of any documentation that the team has created.

Guidelines for Documentation

Originally created by (the editor believes) **Austin Nguyen**

"
   This folder contains logs for all work pursued outside of class.

Each member has a folder, folders of other members should generally be untouched.

Each file should include:
   - Date (possible as file name)
   - What was done

If members work together, they should create a single file and place it in the "Group Works" folder.
They should also include, in their own folder, that they were a part of the meeting, but do not need to include details there.

Note:
   - This was created on 9/30/2020, so any work prior may not be documented properly.

Sample Logs

```
File: 9-31-2020

I implemented health regeneration for creeps.
I created:
   - a script "CreepHealthRegen"
   - a new scene called "CreepRegenTestScene"
Documentation not yet included - will work on that later.
```

```
File: 10-12

Met with {Person A} and {Person B} to work on new towers.
Meeting is documented in "Group Work/10-12 New Towers"

"
```

Documentation Timeline

As stated in the summary above, this document will, for the time being, contain a fairly linear compilation of any documentation produced by the time. It is organized under headings that list the date of submission for that documentation or set of documentations. Each recorded segment of documentation is credited to the person or persons who contributed and is separated from the next by a horizontal bar. To reiterate: this collection will ideally be updated in both form and function over time.

2020-09-16

I was present at the meeting and participated in the discussion.

Calvin and I started looking into designing the tile map but we went with Calvin's map because his was easier to generate.

- **Elizabeth Hernandez Reynoso**

Group Notes for Software Development (Week 4, Wednesday, 09-16-2020)

Group Members in attendance: All 8 members
Note taking: Jon Dorman

Goals for Session:
- Assigning Roles
- Follow guide process to refine development process
- Consider deadlines and set goals

Week 2 rough plan for roles (copied & pasted):

- The names of all the members of your group and their roles

  - Austin - Testing
  - Calvin - Mechanics, UI, Map Development
  - Elizabeth Hernandez - Map development, Tower/Creep AI, Mechanics
  - Cody - Map development, Mechanics, Music
  - Justin - Animation/VFX, UI
  - Jon - Undecided, Technical Writing
  - Alejandro - Tower/Creep AI, Mechanics
  - Ashkii Kadenehii - Tower AI/ Creep AI, Mechanics, Animation

3:32 PM - Discussing the nature of deadlines and how certain features will need to be defined before others can be started.

3:33 PM - Determining roles. Starting with **project leader**. Suggested that the member with the most Unity experience will take the role - that's Austin. Next is **research**, that's going to Calvin.

3:35 PM - Taking a moment to discuss Unity experience. We're looking to have everyone dabble in Unity a little bit by the end of the week. Tutorials and independent research are the goal for the time being. Alejandro suggests working on some basic AI skills which could later be applied to other areas of the game. Austin has some assistance in that area.

3:38 PM - Back to discussing roles… Cody is going to take over the role (presently) of the product owner. Alejandro is particularly interested in working on some of the AI-related areas of the game.

3:44 PM: Austin is sharing his screen to give everyone a look at some very early work done in Unity. We're taking a look at the current iteration of the map, which is in a prototypical stage. We've got a little bit of confusion regarding the nature of Unity projects and the difference between 2-D environments and 3-D environments.

3:47 PM - Calvin is suggesting that we talk about resolving disagreements and dealing with changes. Clarifying the priority of randomly generated paths. Calvin poses the question. Cody things that randomly generated maps might be irrelevant for a tower defence game. We're clarifying the angle that the game would be viewed from - definitely top-down.

3:52 PM - Calvin suggests making some plans since our next lap period will be a week from today. Austin is looking at drawing the map on the screen as an early goal. Suggests that creeps should wait until the map is finished. Calvin is willing to work on the map and try to get it done by next Wednesday.

GOAL: <u>Have the map drawn on the screen</u> by WEDNESDAY, OCT 23.

Tentative Iteration 2 : Tower creep and AI

Alejandro: Asking how we should direct those who are not necessarily signed up to work on the goal for the week. We're planning on forming some small groups that work together.

Possible times to work in groups: Thursday the 17th around 5:00 PM or 6:00 PM

3:58 PM - Discussing grid size. Austin and Calvin are discussing that. Austin's previous work on a tower defense game (long time ago) worked well with a 16x16 grid.

3:59 PM - Discussing the nature of iteration #1. Planning to show the working iteration running in unity for the time being.

4:00 PM - Elizabeth is doing some preliminary work looking at the map design, being joined by a couple others.

4:02 PM - **Discussing the nature of 2D Unity vs 3D Unity again, this may be something we need to discuss further and clarify**. Most people seem a bit unclear on the difference between these two.

4:04 PM - Talking a bit about the aesthetics of the game - "dark" and "forest" were brought up as two aesthetic archetypes that could be considered. Sounds like we're trending toward "forest."

4:08 PM - **Austin's** still looking at **testing** as a major role that he's interested in but has the most experience with a project like this and is ready to assist with programming where needed.

4:11 PM - **For anyone without a strongly defined role at the moment we're looking to have as many eyes on the code as possible.**

4:12 PM - It might be useful to have a more Unity-savvy member record a video of some of the basics of navigating the platform. Otherwise, having everyone do a short tutorial will likely be a requirement to get everyone on the same page.

4:15 PM - **Some basics regarding the map - (0,0) is currently set to be the bottom-left corner of the map. Making more progress on the map than expected - we may consider pulling the goal for creeps and towers forward as a result. We need to distinguish between different types of tiles and the rules that define those tiles.We also need to know *what* tile is being selected for certain types of functionality.**

4:19 PM - Ironing out some quick issues with Github. Making sure that everyone is a collaborator on the project.

4:30 PM - We've been working with Unity, Calvin has been sharing his screen while Austin talks about some of the features.

- **Group work** compiled by **Jon Dorman**

2020-09-20

- Working on waypoints for creeps.
- was able to set waypoints but was having trouble coding.
- Stopped when another group member completed it.

- **Ashkii Kadenehii**

2020-09-21

I, Elizabeth, duplicated the MapTest scene and added towers to it. I named this modified duplicate scene Map with Towers.

I added 3 towers to the scene.

I added a script called TowerMovement and added a tag called Enemy. The towers lock onto targets that fall into their range. Targets are game objects with the Enemy tag.

After the towers lock onto a target, they follow the target until the target goes outside of their range. Then, the tower will lock onto the next closest target.

- **Elizabeth Hernandez Reynoso**

2020-09-23

I was present at the meeting and participated in the discussion. I helped fill out homework 3.
- **Elizabeth Hernandez Reynoso**

Group Notes for Software Development (Week 5, Wednesday, 09-23-2020)

Group Members in attendance: All 8 Members (**Jon, Cody, Alejandro, Justin, Calvin, Elizabeth, Austin, Ashkii**)

Note taking: Jon Dorman

Goals for Session:
- Discuss which version of Unity we should all be using
- Work on filling out Homework 3 form

3:27 PM - Some of the group have been working on the project over the weekend.
- **Elizabeth** worked on implementing a tower, image of tower that locks onto enemies
- **Alejandro** worked on spawning mechanisms
- **Calvin** worked on creep movement and the first working layout

3:30 PM - Note, looking to have all group members working with **Austin's** version of Unity. He's on 2019.4.1f1.

3:34 PM - The **professor** would like us to clearly clarify the abilities of both the enemies and the towers that the player places down.

3:36 PM - The **professor** is happy with what he's seeing right now - he'd like to see the demo running on more group members' devices next week if possible.

3:39 PM - Watching **Austin's** screen, working on some organization for the project.

3:40 PM - If you're going to create a new scene, duplicating is easy. NOTE: Be extra careful not to overwrite another group member's scene. Make sure not to edit other members' scripts.

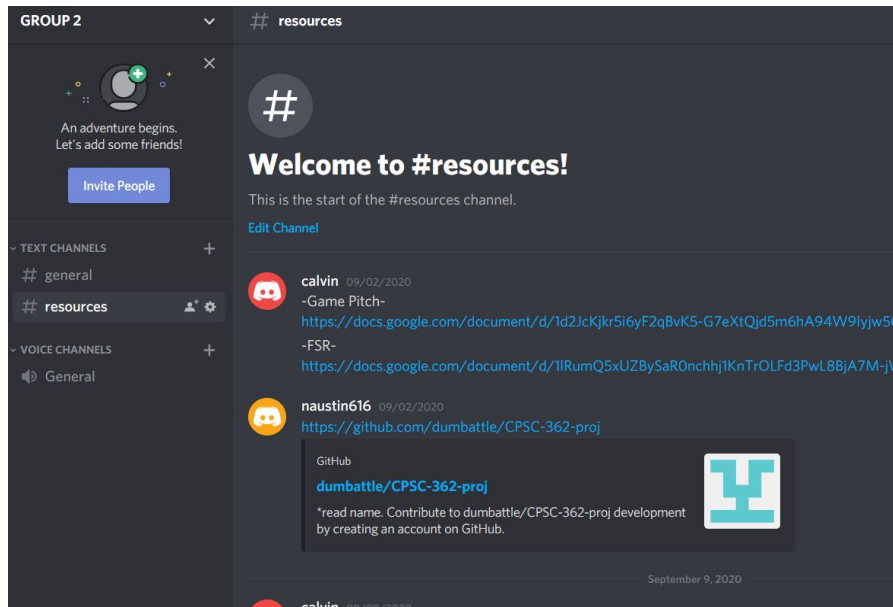3:42 PM - Cody set up a Trello page for us to keep tabs on to-dos.

3:45 PM - **Goal from last week -**

GOAL: <u>Have the map drawn on the screen</u> by WEDNESDAY, OCT 23.

     Completed!

3:47 PM - **Justin** is doing a quick rundown on Git. Talking about branching and forking. Not all of us are super-well-versed in Git.

3:48 PM - **Trello** is now available in our group Discord's **resources** section.

3:52 PM - **Cody** is double checking on the meaning of the "Facilitator" role - we're putting Calvin down for that at the moment.

3:54 PM - **Calvin** has been working on enemy movement. Considering the merits of waypoints for guiding enemies - seems like most group members feel pretty good about that method. Calvin is proposing an alternate method. **Austin** is giving a quick rundown on waypoints. Seems pretty straightforward.

4:00 PM - Clarifying the use of the **speed** attribute as a means of driving enemy movement. As speed gradually increases, the enemy's position advances in turn.

4:09 PM - Some confusion regarding the way in which towers will target enemies. We should clarify that if we can.

4:10 PM - We're taking a quick vote on the waypoint system. Seems like **most of the group** is leaning toward waypoints, given that they're fairly well documented and tutorialized. **Austin** recommends making some changes to the waypoint system.

[NOTE: We're looking over the code a bit during this time, still mainly involving the movement of enemies. Check the code involving waypoints to see what was being worked on here.]

4:20 PM - Shifting toward talking about priorities going forward. UI is something that we need to look at soon.

4:25 PM - **Alejandro and Calvin** are planning to work together on developing the UI over the weekend. **Justin** is working on tile selection. **Elizabeth** will be working on towers. **Ashkii-Chee and Cody** are probably gonna join **Alejandro and Calvin** to work on UI over the weekend.

GOAL: Try to have tower placement and some UI functionality completed by next week, **Wednesday, 23-09-2020.**

4:33 PM - Clarifying the definition of *actors.* Anything that interacts with the core program. A person, functionality, etc. Components. **We're still a bit lost on this definition, though**.

GOAL: Merge creep spawner scene and tower scene.

GOAL: Waypoints.

- **Group notes** compiled by **Jon Dorman**

2020-09-24

-Created simple Creep Spawner
-Can control number of creeps spawning, frequency and speed.
-Worked on it by self.

- **Alejandro Harrison**

- worked on creating a single creep and creep movement
- created a simple tilemap sprite for testing

- **Thao Calvin Ngo**

[2020-09-25](#)

- I created:
  - folder /Assets/Scripts/UI/
  - folder /Assets/Scenes/Test/
  - folder /Assets/Sprites/Tilemap/
  - folder /Assets/Towers/TowerTypes/
  - script /Assets/Scripts/UI/PlaceTower.cs
  - scene /Assets/Scenes/Test/TowerPlacement
- Documentation not yet included
- added tile assets ("grass1", "ground1", "highlight") to /Assets/Sprites/Tilemap/
- added tower1 prefab to /Assets/Towers/TowerTypes/

UDPATE
- added OnMouseExit function to PlaceTower.cs

  - **Justin Do**

2020-09-26

- group planned on working on the project on the 26th, but I came late.
- Everyone was so far ahead so I deceided to work on a main menu.
- I completed a main menu, but there was one created already.

- **Ashkii Kadenehii**

[2020-09-30](#)

Created README's for documentation folder

- **Austin Nguyen**

- worked on creating a single creep and creep movement
- created a simple tilemap sprite for testing

- **Thao Calvin Ngo**

I took the notes for the meeting and helped fill out homework 4.

- **Elizabeth Hernandez Reynoso**

Prior to 2020-09-30*

I assisted other people with their implementations.
I partook in nearly every feature implementation by providing assistance.

- **Austin Nguyen**

* The contributions listed here are not meant to conform with the timeline

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2020-10-02

- added documentation to PlaceTower.cs
- pushed changes to master branch because only comments were added

    -    **Justin Do**

2020-10-04

Gave minor assistance to Alejandro and Elizabeth working on Tower Targeting.

Looked over there work when they finished, taking note of errors possible improvements which I will suggest for iteration 2.

- **Austin Nguyen**

I worked with Alejandro to add a line renderer component to the towers. The work was applied to the Map with Towers scene.

Most of the time was spent looking through many tutorials.

- **Elizabeth Hernandez Reynoso**

Members present: Elizabeth and Alejandro

- The TowerMovement script was modified to include code for a line renderer.
- A line renderer component was added to the towers so that the towers would indicate visually that they are locking onto targets and following them until they go out of range.

These changes were applied to the scene Map with Towers.

- **Group work** involving **Elizabeth Hernandez Reynoso** and **Alejandro Harrison**

2020-10-05

-Worked on tower targeting with Elizabeth.
-Created Line Rendering to mimic lasers that lock on.
-Worked with the scene "Map with towers"

- **Alejandro Harrison**

Created folder for class meetings.
 - Created entries for the past 3 meeting
 - Created a README
 - Will ask others for feedback

Updated main README to explain folders in root directory
Renamed folder: 'Documentation' -> 'Work Logs' after consulting with other group members
Create some class diagrams in preperation for iteration 2
Assited Elizabeth, Alejandro, and Justin with a LineRenderer issue

- **Austin Nguyen**

Main Menu implemented with play and quit functionalities. Main-menu branch has been merged onto the master branch and is in working condition.

- **Cody Thompson**

I worked on fixes to the line renderer:
- fixed errors detected by Unity
- added a material to the line to fix issues with layering

I added documentation to:
- the Map with Towers scene
- the TowerMovement script

- **Elizabeth Hernandez Reynoso**

2020-10-06

Minimal addition to Justin's tower placement code.
 - allowed a button to toggle tower building.

- **Thao Calvin Ngo**

- added documentation to TowerPlacement scene

- **Justin Do**

[2020-10-07](#)

Reorganized project folder/files
Deleted unused assets
Updated some scenes that had obsolete components

- **Austin Nguyen**

- created folder /Assets/Scenes/Iteration1/
- created scene /Assets/Scenes/Iteration1/Menu
- created scene /Assets/Scenes/Iteration1/Stage1
- created folder /Assets/Enemy/EnemyTypes/
- created prefab /Assets/Enemy/EnemyTypes/enemy1
- set "Scenes in Build" in File>Build Settings to Menu and Stage1 from Iteration1 folder
- duplicated /Assets/Scripts/UI/PlaceTower.cs
  - old script renamed PlaceTowerOLD.cs
  - new script named PlaceTower.cs
  - fixed higlight issue when hovering over placed tower

- **Justin Do**

07-10-2020 Notes - Iteration 1 Presentation

3:34 PM - Broken into groups and preparing to demonstrate the project to the professor.

3:35 PM - We'll have to clarify the exact format for submission before midnight tonight - should be straightforward.

3:36 PM - <u>Plans for iteration 2</u>.
- Alejandro initiated this conversation, Austin has some plans.
- Refactoring is a big goal in iteration 2.
- Austin's made a great diagram that lays out his ideas about where we should be heading.
- We'll probably be looking to introduce 'managers' for the creeps and the towers, which will dictate the elements of their functioning that are more meta to the game on the whole (ex. Rate of creep spawn as opposed to individual creep stats.)

4:01 PM - Professor Le came by - straightforward chat. He's fine with us submitting the project as a link to GitHub, where we have all of our work centralized. He wondered about the scoring mechanism in the game - looking for some way to win.

4:02 PM - Austin says to keep 'error-pause' set to enabled in Unity. Could cause issues if it's disabled.

4:12 PM - For iteration 2 - (to *re*iterate) we'll probably start with refactoring. Austin has laid down a solid model for how we should go about cleaning up the code.

GOAL: Calvin is suggesting that we try to have one or both of the *Managers* completed by this time next week.
GOAL: By the end of the *second iteration*, we should have a completely working game, if a very simple one.

4:18 PM - Austin is suggesting looking into and researching C# *events* for anyone not particularly familiar with them.

- **Group work** compiled by **Jon Dorman**

2020-10-08

Create example UIManager

Folder: Assets/Examples/UIManager
Scripts: ButtonUIManager.cs
Scripts: ButtonUITester.cs
Scripts: UIManager.cs
Scene: UI Example Scene

Documentation included

- **Austin Nguyen**