Prototype Submission

Roles

David DaCosta - Scrum Master / UI / Graphics Designer
Robert Cucchiara - Product Owner / Lead Developer

Ceremonies & Artifacts

Initial group meeting

For our initial group meeting, we had elected to meet right after Software Engineering on Tuesday, February 28th at 6pm in Olsen Hall 3rd floor CS 308 lab. We discussed the elements of the feasibility study like what we wanted to ultimately deliver in terms of requirements for our final deliverable and determined the following Product Backlog:

1. The project should be set up as a Unity project. 1 hour
2. The project should require researching vector graphics. 2 hour
3. The project should require researching & gathering sprite reference material. 2 hour
4. The project should require research on Unity network functionality. 1 hour
5. Multiplayer should be set up using Unity Network multiplayer. 2 hour
6. There should be a Unity scene where the gameplay takes place. 1 hour
7. The gameplay level should be based on a floor plan. 2 hours
8. There should be a splash screen. 1 hour
9. There should be a well designed menu screen. 1 hour
10. There should be a Unity scene that displays an interactive main menu interface. 2 hours
11. There should be meaningful collision detection. 1 hour
12. Users should only be able to view the room they're in. 1 hour
13. The user should have a responsive minimap. 2 hours
14. The power ups should be well designed animated icons that players can collect. 2 hours
15. Players should be able to collect power ups by collision. 1 hour
16. The user should have a well designed Power Up Bar. 2 hour
17. All players should have a glowing aura if they have power ups so other players can tell where in the level other players are, if they pose a threat. 1 hour
18. Power ups should spawn randomly. 1 hour
19. Power ups should spawn less frequently after players on

screen start to die. 2 hour

20. Power ups should priority spawn in rooms unoccupied by any player before spawning in rooms that are occupied. 1 hour
21. Power up use should be mapped to hotkeys. 1 hour
22. There should be a power up that makes the user move faster than the opposing enemies on screen. 2 hour
23. There should be a power up that allows the user to empty an opponent's power up bar. 2 hours
24. There should be an power up that sets the animal's targeting to another opponent. 4 hours
25. There should be an power up that will nullify another player's power up from taking effect when the player calls on their respective power up to be used. 4 hours
26. There should be an power up that lets you know where the cat is for a brief moment during the match. 3 hour
27. The user should be able to pause a game & interact with a pause menu interface. 3 hours
28. The user should be able to choose how many total players there are in a match. 1 hour
29. There must be a win/lose condition for the user so the game will end. 1 hour
30. The user must be able to use WSAD input to control the movement of their character. 1 hour
31. The rabid animal should be randomly generated between cat and dog. 1 hour
32. The user should be able to choose their avatar. 1 Hour
33. The player should be able to choose a level size, between 3 options; small, medium, & large. 4 hours
34. The user should have their own animated & distinguishable sprite. 2 hours
35. The other AI or multiplayer players should also have their own animated & distinguishable sprites. 2 hours
36. The user should have an option of 3 sprites. 4 hours
37. The opposing animal should be able to randomly spawn as a well designed & animated Cat Sprite. 2 hours
38. The opposing animal should also be able to spawn as a well designed & animated dog sprite. 2 hours
39. The opposing animal should also be able to spawn as a well designed & animated rabbit sprite. 2 hours
40. The opposing animal object should have functional AI & 2D pathfinding. 3 hour

Total: 74 hours

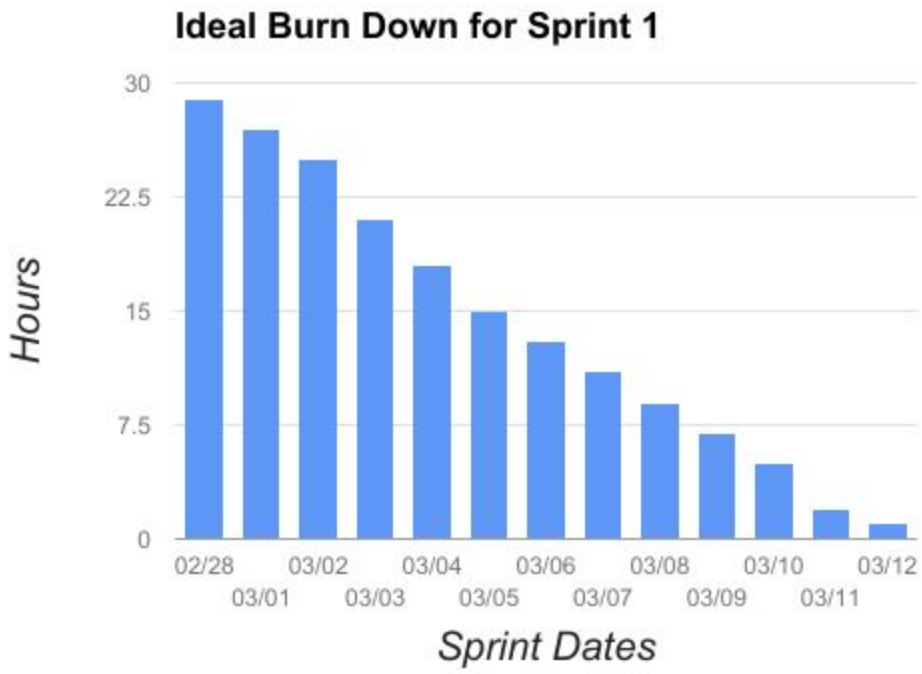
Sprint Planning Meeting

We held this meeting right after our initial group meeting on the same day at Tuesday, February 28th at 8pm in Olsen Hall 3rd floor CS 308 lab. For this meeting we decided to flesh out our roles for the project going forward. We only had two weeks to build a prototype and we only had two members. We had already determined prior that Dave would be the Graphics director along with UI director & Rob would be doing most of the Unity scripting. We started promptly picking elements of the Product Backlog that we'd just created in respect to our roles. We had to design an outline of what we needed to work on before moving forward in the future. We decided that it would be beneficial for Rob to have some gameplay specific sprites to work with before working on things like aesthetics & UI. Therefore, Dave would focus on Character and Animal sprites initially & UI stuff after. We condensed these from the product backlog & built our Sprint Backlog. We decided that our Sprint goal was going to be to deliver a launchable prototype where objects on screen can load and move. We aren't going to have a win condition or any complex interaction. We decided we would ensure the sprint goal by checking up on each other's progress during the scrum meetings. Our Sprint Backlog is as follows:

1. The project should be set up as a Unity project. 1 hour
2. The project should require researching vector graphics. 2 hour
3. The project should require researching & gathering sprite reference material. 2 hour
4. The project should require research on Unity network functionality. 1 hour
5. Multiplayer should be set up using Unity Network multiplayer. 2 hour
6. There should be a Unity scene where the gameplay takes place. 1 hour
7. The gameplay level should be based on a floor plan. 2 hours
8. There should be a splash screen. 1 hour
9. There should be a well designed menu screen. 1 hour
10. There should be a Unity scene that displays an interactive main menu interface. 2 hours
11. The power ups should be well designed animated icons that players can collect. 2 hours
12. The user should have a well designed Power Up Bar. 2 hour
13. The user must be able to use WSAD input to control the movement of their character. 1 hour
14. The user should have their own animated & distinguishable sprite. 2 hours
15. The other AI or multiplayer players should also have their own animated & distinguishable sprites. 2 hours
16. The opposing animal should be able to randomly spawn as a well designed & animated Cat Sprite. 2 hours
17. The opposing animal object should have functional AI & 2D pathfinding. 3 hour

Total: 29 Hours

We've drawn up an ideal Sprint Burndown Chart where we're essentially chipping off 2 hours a day symmetrically, which implies an hour of work a day per team member besides weekends, where we chip off 3 hours a day Friday through Sunday.



Scrum Meetings

Tue 28 / Thur 2 / Sat 4 / Mon 6 / Wed 8 / Fri 10 / Sun 12

Today, we had just had our initial group after our Software Engineering class. The meeting where we had established the product backlog for the project. We continued at once and had our sprint planning meeting right away so we could start our scrum meetings immediately. Finally we had our first daily scrum meeting directly after so that we would fit in the 7 meetings before the due date.

Rob to **Dave**:

What did you do yesterday?

Yesterday I had to study for a Computer Architecture Exam, unfortunately. But I took a look at some vector graphics tutorials & established some references for the character sprites & animal sprites that we'll be using in our game.

What will you do today?

Today I'm gonna look at making a sprite for the cat object that will pose as the main threat in the game.

Is anything in your way?

Just other assignments. We have an OPL problem set in Haskell due this sunday. It's proving to be difficult to pick up Haskell & on top of that there is an Architecture Homework due after that on tuesday that I've started.

Dave to **Rob**:

What did you do yesterday?

Browsed Unity game engine tutorials. Watched several videos and played around with a few tools in the Unity client.

What will you do today?

I plan on getting player movement working in the Unity environment.

Is anything in your way?

I have the same issues; the OPL problem set. I also have an assignments due tomorrow in Probability and Statistics and Thursday I have an assignment due in Discrete II.

Tue 28 / **Thur 2** / Sat 4 / Mon 6 / Wed 8 / Fri 10 / Sun 12

Rob & Dave have Computer Architecture on Tuesdays & Thursdays. Afterwards Rob has a class but Dave doesn't so Dave will go and wait in the IEEE room for Rob. He usually shows up at noon. So, at noon we met up at the IEEE room in Ball Hall & discussed our progress & goals.

Rob to Dave:

What did you do yesterday?

I've since started some terrible prototypes for the cat & player sprites for the game. They're not great, or even animated, but they'll do for placeholders.

What will you do today?

I'm gonna try to re-work the sprites of the characters and cat that I have saved in tjhe Gravit visual editing web app & try to make them more appealing aesthetically.

Is anything in your way?

Nothing new. Just school work. Vector graphics are strange but I think with the base models I have right now, I can learn a bit more and spruce them up to be meaningful. I just have to get a better grip on the discipline.

Dave to Rob:

What did you do yesterday?

Fixed bugs in the player movement script that I had worked on the day before.

What will you do today?

Watch tutorials and begin working on unity network with the intention of implementing multiplayer functionality.

Is anything in your way?

The lack of any real knowledge about networking & learning Unity on the go. Hoping to get comfortable with it soon.

Tue 28 / Thur 2 / **Sat 4** / Mon 6 / Wed 8 / Fri 10 / Sun 12

Today, since it's the weekend, we elected to get breakfast at Top Donut in Lowell at 10 am & discuss the project's leanings.

Rob to Dave:

What did you do yesterday?

Yesterday I had to work at the office after class but I plan on getting some stuff done this weekend.

What will you do today?

I'm going to look at level design & potential reference floor plans that we'll be basing our levels after. I'm only planning on implementing one level this sprint, and it might not even get aesthetically complete, but in future sprints I want there to be a minimum of 3 playable levels.

Is anything in your way?

I have to work on OPL's exploration for the final project along with the problem set due tomorrow but otherwise nothing else really. OPL's actually not too in the way, it was just work yesterday.

Dave to Rob:

What did you do yesterday?

I completed a rudimentary implementation of Unity network components.

What will you do today?

I will not being working on this assignment today, I have to go to work soon and then when I get home have to work on OPL assignment due Sunday night.

Is anything in your way?

OPL & work kind of have me trapped right now.

Tue 28 / Thur 2 / Sat 4 / **Mon 6** / Wed 8 / Fri 10 / Sun 12

Normally Rob & Dave will meet on Monday's Wednesday's and Friday's after OPL however, Rob had to go home right after OPL to deal with a family issues that became apparent during class. We canceled this meeting & were unable to discuss any progress today.

Tue 28 / Thur 2 / Sat 4 / Mon 6 / **Wed 8** / Fri 10 / Sun 12

As today is Wednesday, Rob & Dave had OPL together. therefore, as expected we met up after OPL in the 3rd floor quiet side of the Olsen Hall CS labs.

Rob to **Dave**:

What did you do yesterday?

Yesterday, I was mostly concerned with a Haskell problem set, but I managed to look up some reference materials for floor plans that I'll use to create a level layout. We need there to be an n amount of rooms for n players. So for the sake of this prototype I think we'll stick with 5 or 6 & I've got some reference floor plans for those numbers. For future iterations we'll look at less & more number room levels. We'll also need to test whatever levels we create for balancing, since some rooms may have an advantage, given that space management is an integral element of the game. I've thought about illustrating just the floor designs & have the walls of the level be a separate layer that can then be generated as a solid for collision purposes. I actually have a set of walls right now, but I'm trying to arrange the rooms so that gameplay will be balanced before I start painting floor aesthetics.

What will you do today?

I'm gonna keep working on building the floor plan wall frames based on the reference material, such that they'll be the solid invisible frames for the sake of collision detection & balanced gameplay wise. Then, I'll work on the visible part that will go underneath that will look like the actual level.

Is anything in your way?

Nothing bothering me today out of the ordinary. I had work earlier but it wasn't a hindrance.

Dave to **Rob**:

What did you do yesterday?

I worked on camera controls in the network settings so that each player has the camera following their character on their client.

What will you do today?

I'm just going to keep exploring camera options right now. I have a ball rolling & I don't want to switch to something else.

Is anything in your way?

Several assignments are due for me before vacation starts.

Tue 28 / Thur 2 / Sat 4 / Mon 6 / Wed 8 / **Fri 10** / Sun 12

Before leaving for break we elected to meet up after our OPL class as customary. Since our class was at the fifth floor of Olsen hall at noon we just walked down to the computer lab at CS308 of Olsen right after at 1pm as usual.

Rob to Dave:

What did you do yesterday?

Yesterday I spruced up the generic splash screen I ended up starting on Wednesday after floor plan stuff. It's going to come up after the Unity Engine splash for about 4 seconds before the main menu screen comes on.

What will you do today?

Today & tomorrow I'm working on the main menu & buttons along with other UI stuff like the power up bar & the power up icons. By the way, we should name those soon. Something generic like "power up" isn't going to cut it.

Is anything in your way?

No. I've actually been focusing on these images the last few days since turning in the Architecture assignment. I am probably gonna shift back to OPL mode this weekend before getting back to this class before the deadline.

Dave to **Rob:**

What did you do yesterday?

I implemented the map that Dave worked on earlier this week in unity and put box colliders in for the walls.

What will you do today?

For the next few days I am going to look into pathfinding and AI for the Cat object that will chase the players around the game world.

Is anything in your way?

There are still several assignments due this weekend for break for me.

Tue 28 / Thur 2 / Sat 4 / Mon 6 / Wed 8 / Fri 10 / **Sun 12**

Rob lives in Chelmsford & Dave's spending Spring Break in Salem, MA. So we opted to skype & write down what we answered to each others questions here in a shared google doc.

Rob to **Dave**:

What did you do yesterday?

Our menu screen is live & so is the Quick Match button. Well, it's up on display in Unity at least. I couldn't figure out how to set up the UI script for changeEvent() to get the quick match

to switch scenes to the gameplay scene. I'm going to implement buttons like choose character & choose level as those options become relevant. They'll be the same button outline & font since I feel like it captures the aesthetic of the game really well.

What will you do today?

I'm going to get back to animating our base sprites. I'm not very good at it & I have to take apart the pieces of my sprites & port them all seperately & aligned vertically to Spriter. I didn't know I'd need to port every limb separately otherwise I would have just saved the sprites as pieces in a folder with their name. Anyway, it's going to be a pain & I don't think we're going to have animation for this sprint prototype unfortunately.

Is anything in your way?

Just vacation stuff really. I need to help around the house & help my dad at the office so I only get a few hours a night to do work & I have other assignments due.

Dave to **Rob**:

What did you do yesterday?

Attempted but failed at getting the cat the chase a player around the map. I'm going to have to put this goal onto the next sprint. At least I got a few hours knocked down though.

What will you do today?

Try another solution at pathfinding and target acquisition for the cat. I might switch our Unity interface from 2d to 3d & just display our scenes horizontally so that the camera's layout makes it look 3d. I've read that pathfinding becomes easier in 3d.

Is anything in your way?

Vacation and other assignments that other professors assigned for over the break have been a hindrance.

Burndown

During implementation we utilized the daily Burndown Chart system. Our Burndown Chart is as follows: