Assignment 2

Building IT Systems (CPT 111 / COSC 2635)
Study Period 3, 2016

8-Bits Studio

by

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23/ 10/ 2016

1. Project Background

1.1. Project Name

Alien Incursion

1.2. Project Description

Alien Incursion is a 2D Action Platformer game set in the near future where the player character is serving in the Australian Defence Force (ADF) during an alien invasion. The player as a member of an elite SASR Unit is tasked with infiltrating one of the alien motherships to gather intel and capture or destroy the mothership. The player will use their training and instincts to navigate through the unfamiliar surroundings inside the alien mothership collecting alien technology and weapons along the way.

1.3. The Team

Luke Edgar

Student Email Address : s3562275@student.rmit.edu.au

What role did you end up playing in the team ?

I took the role of the lead designer designing the game world and sprites.

Fabryel Debay

Student Email Address : s3562731@student.rmit.edu.au

What role did you end up playing in the team ?

I have taking the role of game interface designer and sound and music composer. I have also unwittingly taken the role of project manager trying to keep everything on track.

Subrata Barua

Student Email Address : s3574018@student.rmit.edu.au

What role did you end up playing in the team ?

I will be creating different Checkpoints in the game and will be responsible for the players lives Sytem.

Dean Tesoriero

Student Email Address : s3413353@student.rmit.edu.au

What role did you end up playing in the team ?

I am responsible for the movement system.

Jake McKemmish

Student Email Address : s3551628@student.rmit.edu.au

What role did you end up playing in the team ?

I took the role of creating sprites as well as the pickups and upgrade systems.

14. Demonstrable Outcomes

14.1 Minimum Viable Product

14.11 Avatar Controller, controls the avatar with control input from the player.
Validation Test : Does the player's avatar correctly respond to the commands to walk and/or jump when the control is input?

14.12. Player Health System, health lost upon taking damage.
Validation Test : Does taking damage from the environment or enemies lower the player avatars current HP by the correct amount?

14.13. Collectibles, resource pickups for the player.
Validation Test : Is collecting items including lives, health and ammo pickups registered and then applied to the player's inventory?

1.4.1.4. Enemy Creatures, creatures navigate the level and attack the player on sight.
Validation Test : Do the enemy creatures navigate and interact with the level and player's avatar correctly?

1.4.1.5. User Interface, UI showing all the information the player needs to play the game.
Validation Test : Does the UI accurately show all the relevant information like HP, ammo, equipped upgrades and weapons in an understandable way?

1.4.1.6. Playable level with Win/Loss State
Validation Test : Is the level playable?
Does the player's death result in failing the level?
Is reaching the end of the level recorded as completed?

1.4.2. Extended Features

1.4.2.1. Checkpoint and lives system
Validation Test : Does the player dying reset them to the last checkpoint and remove one of their lives?
If the player dies with no remaining lives is the game registered as over?

1.4.2.2. Movement enhancement system
Validation Test : Do movement enhancing items or skills like sprint or double jump correctly get applied to the player's avatar when learned or collected and then allow the player to use them when the control command is received?

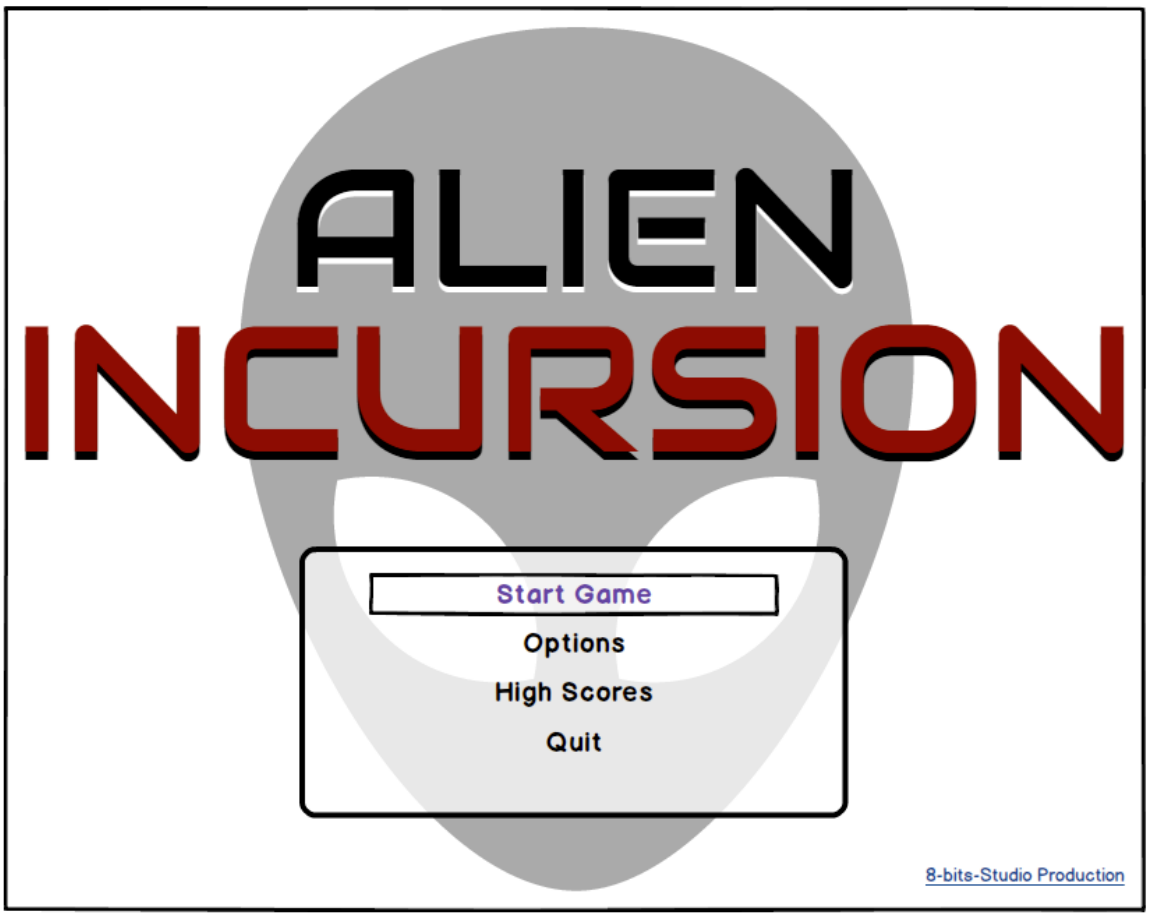
1.4.2.3. Upgrade and equipment system
Validation Test : When an upgrade or new equipment such as weapons or armor is collected does it apply the correct state change to the player's avatar?

1.4.2.4. Background Music and Sound Effects
Validation Test : Does the right background music for the location play?
Does the correct sound effect play for the action or event?

2. Project Design Artefacts

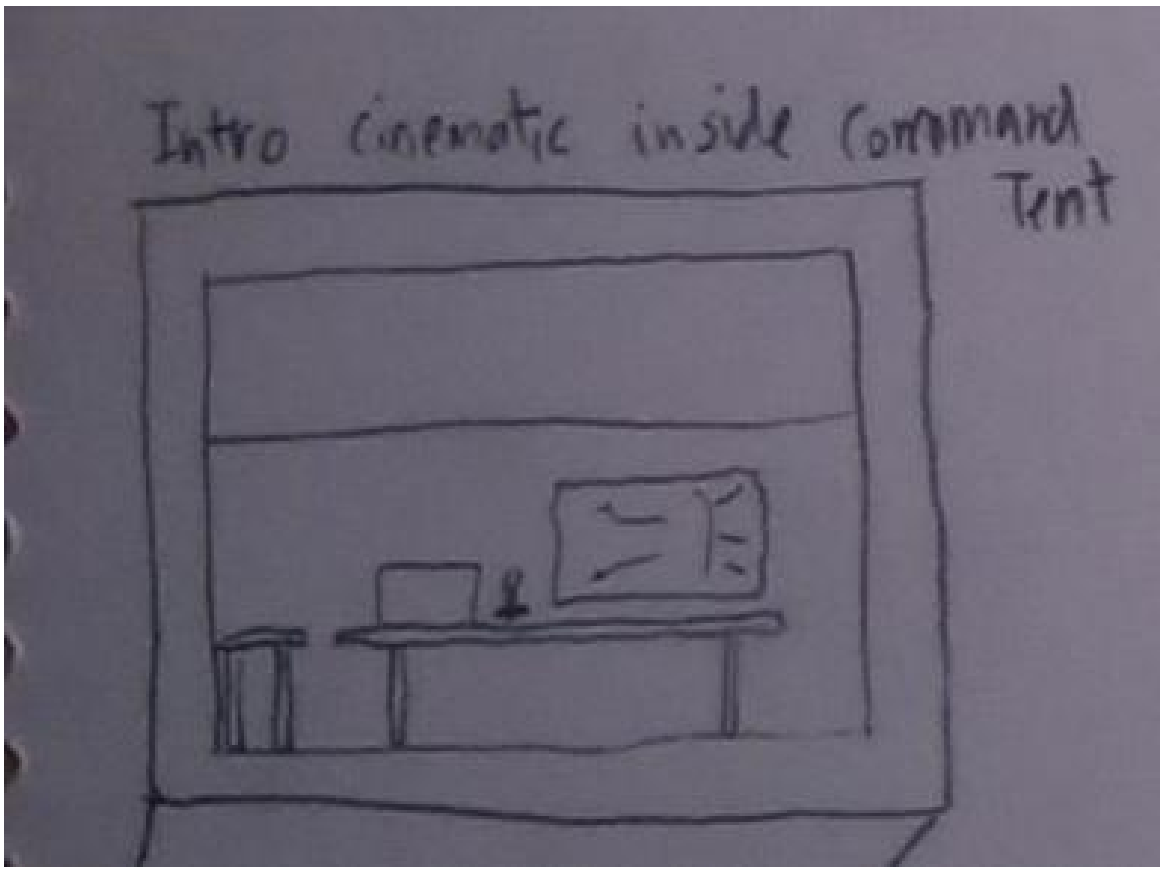
2.1. Storyboard

Scene - Main Menu



Start screen to lead the player into the game.

Scene - Intro cutscene



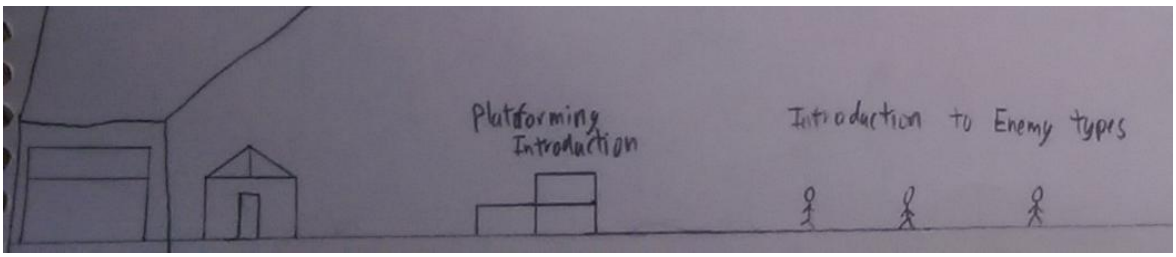
MUSIC: Play creepy music

Fade in to picture of Alien Ship with a city on fire in the distance.

SFX: Play sounds of distant battle

FX: Pan down to the command tent where the player is being informed of the mission by their commanding officer.

Scene - Tutorial



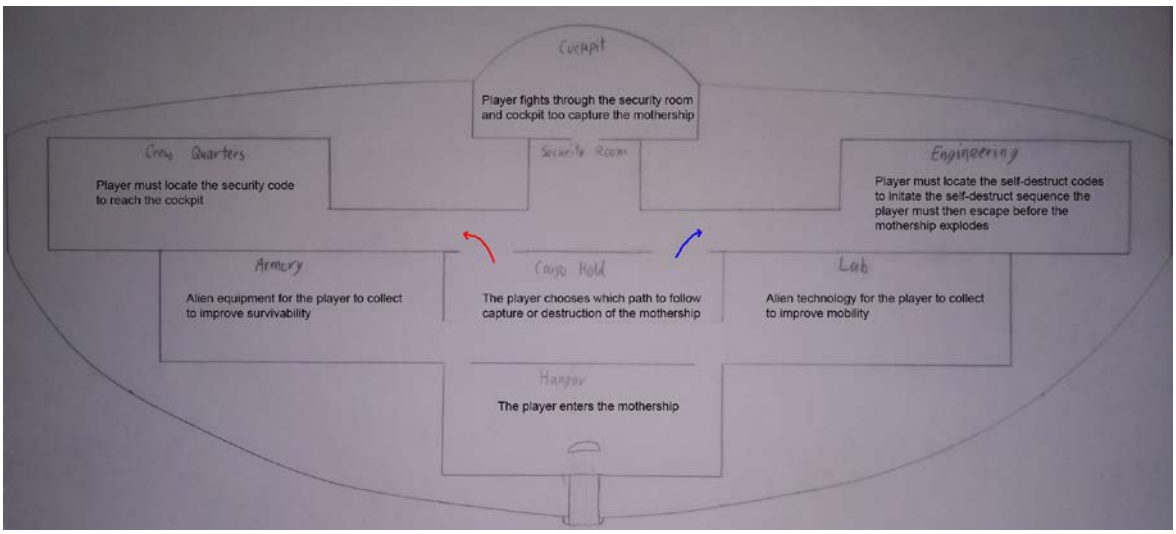
The tutorial starts as the player leaves the command tent and precedes towards the mothership.

The game is paused at intervals to inform the player about important game mechanics during the tutorial.

Scene - Gravity lift onto Mothership

Upon reaching the end of the tutorial the player enters the gravity lift that takes them up into the mothership.

Scene - Aboard the Mothership

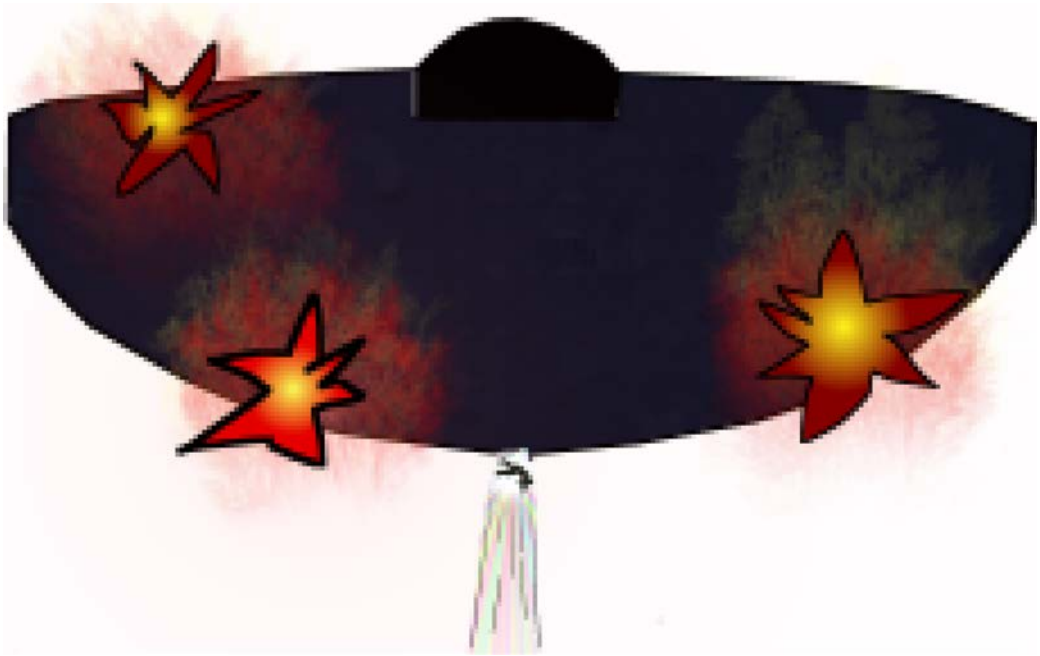


This is the main level with diverging paths.

Player enters the mothership and fight through aliens to progresses through the layers of the mothership.

The path then diverges into two where the player can either capture or destroy the mothership.

Scene - Ending cutscene - Destroyed Mothership

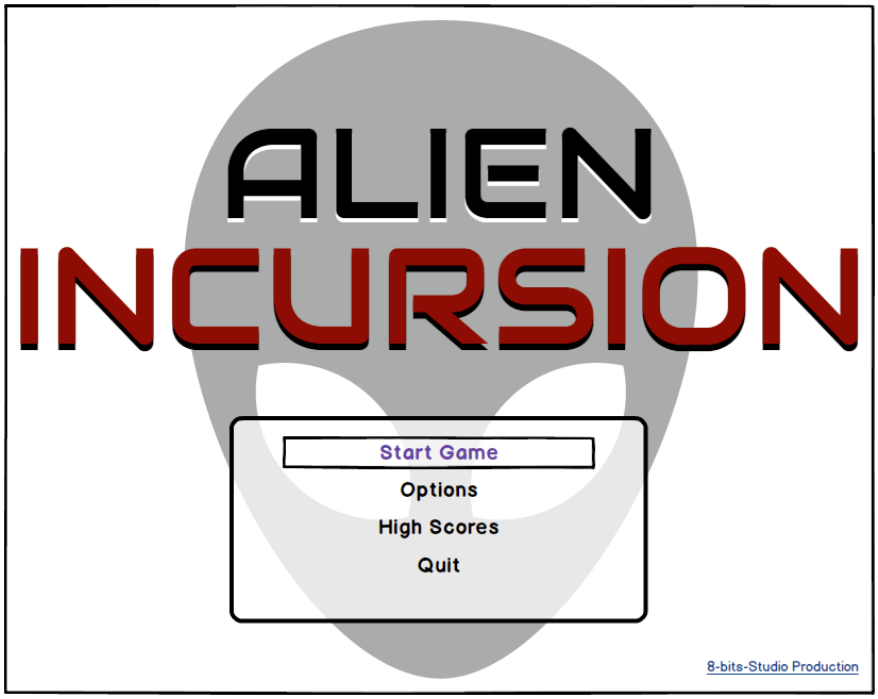


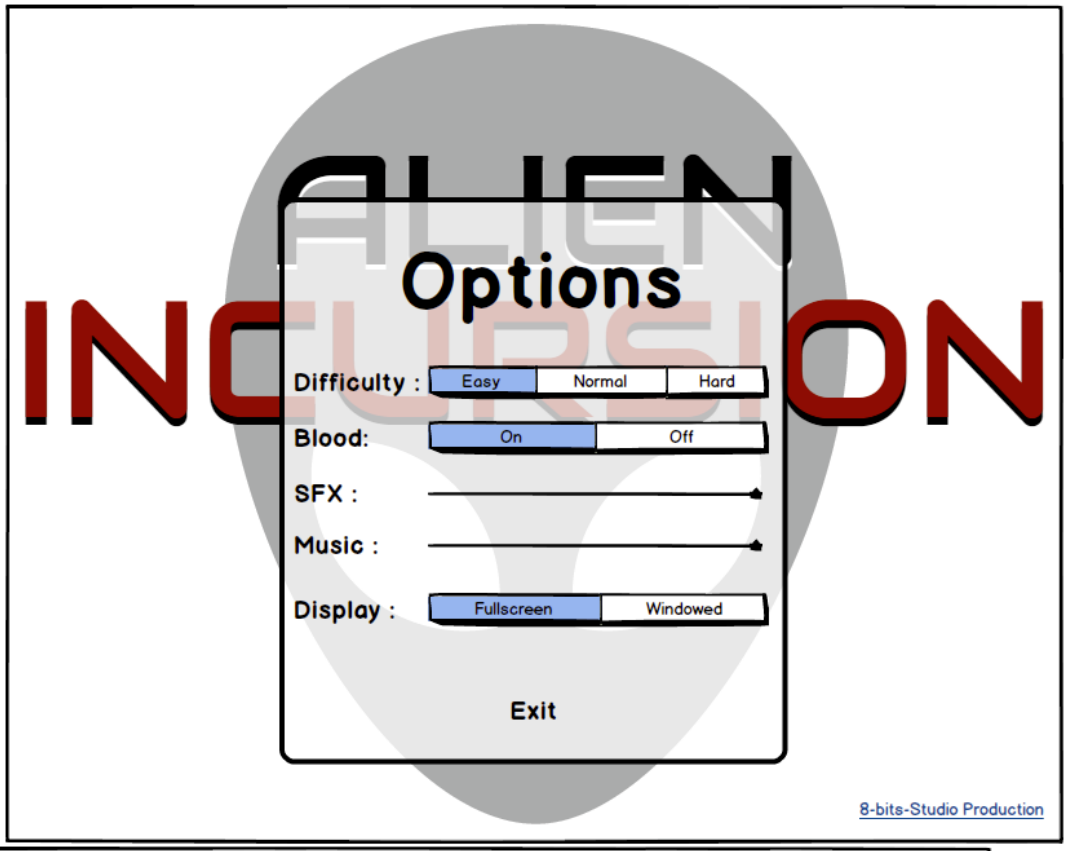
The cutscene shows the player narrowly escaping the Mothership as it starts to explode. This leads to the end of the game and the credits roll.

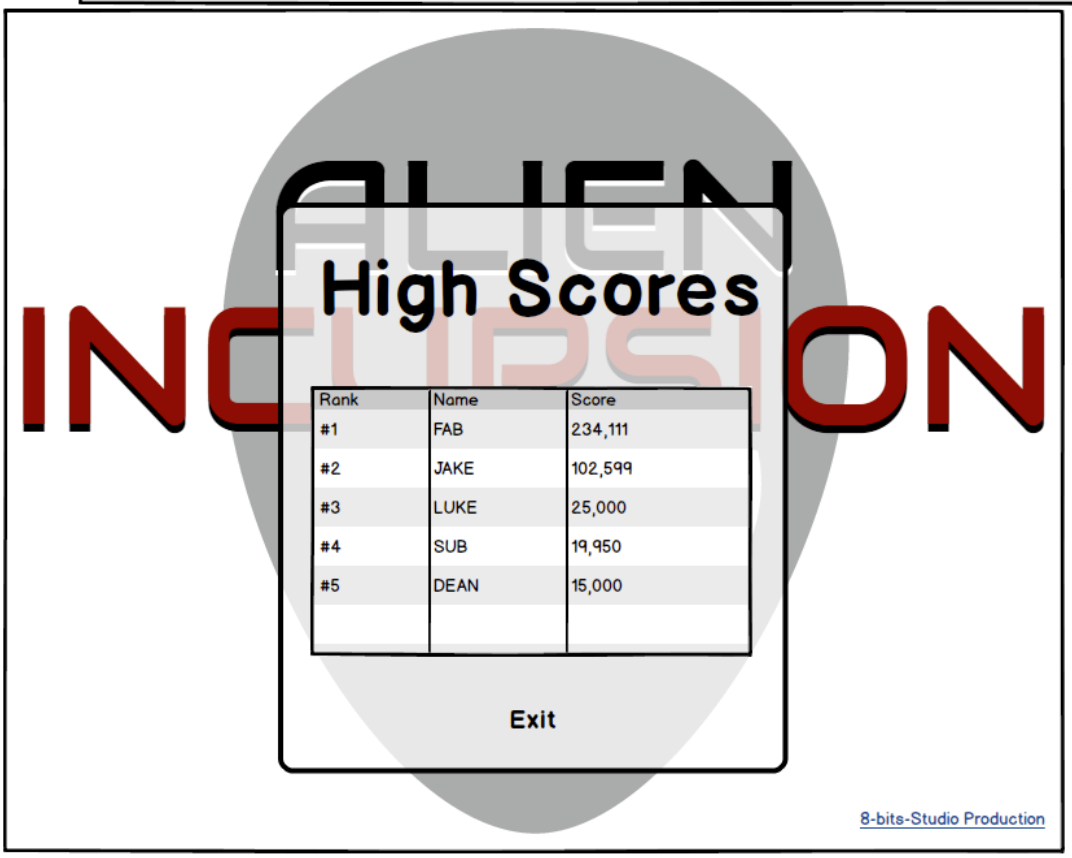
Scene - Ending cutscene - Got control of Mothership

The cutscene shows the player taking control of the ship. This is the end of the game. Credits start to roll.

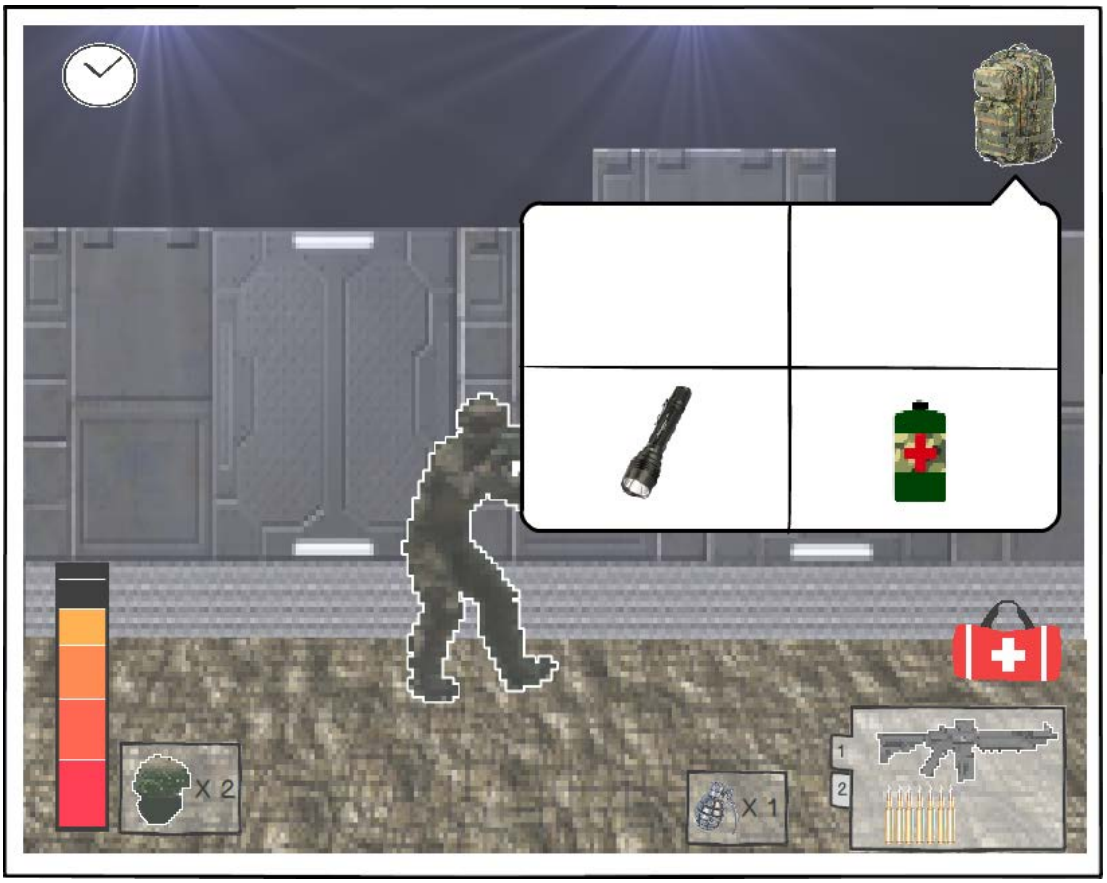
2.2. Game User Interface Screens

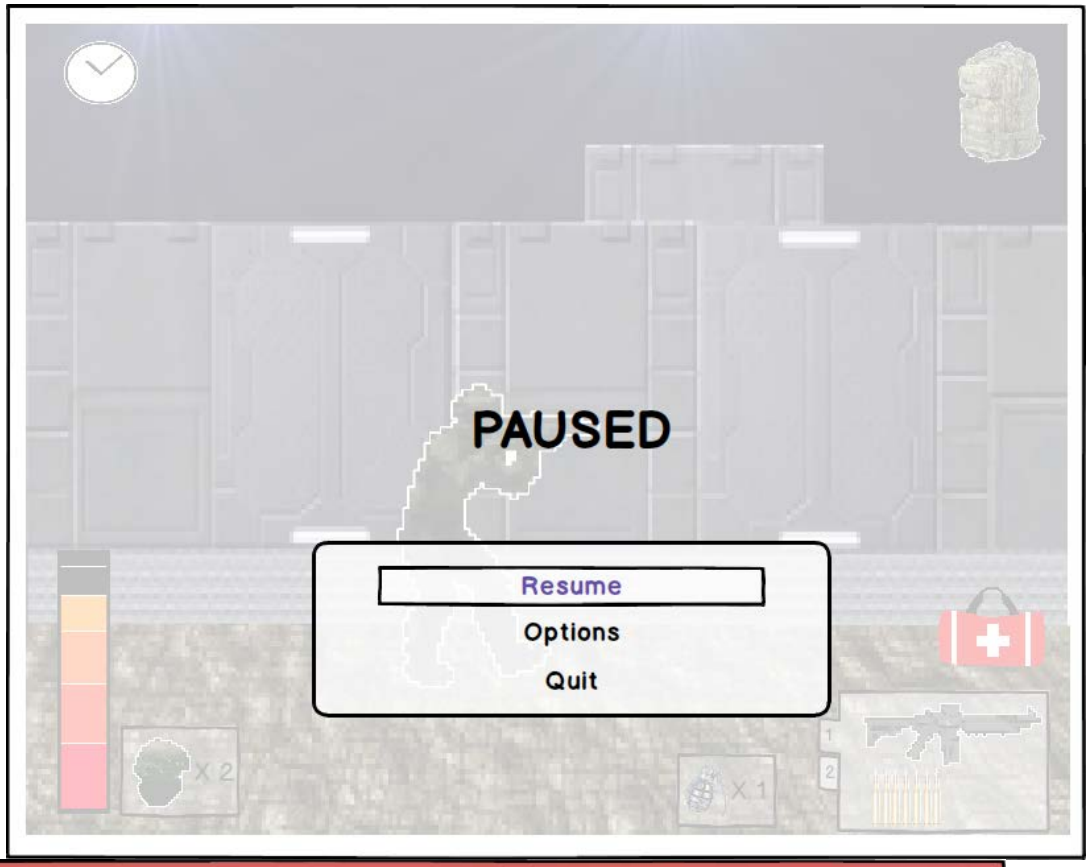



ALIEN
INCLUSION
Options
Difficulty :
Easy
Normal
Hard
Blood:
On
Off
SFX :
Music :
Display :
Fullscreen
Windowed
Exit
8-bits-Studio Production


ALIEN
INCLUSION
High Scores
Rank
Name
Score
#1
FAB
234,111
#2
JAKE
102,599
#3
LUKE
25,000
#4
SUB
19,950
#5
DEAN
15,000
Exit
8-bits-Studio Production

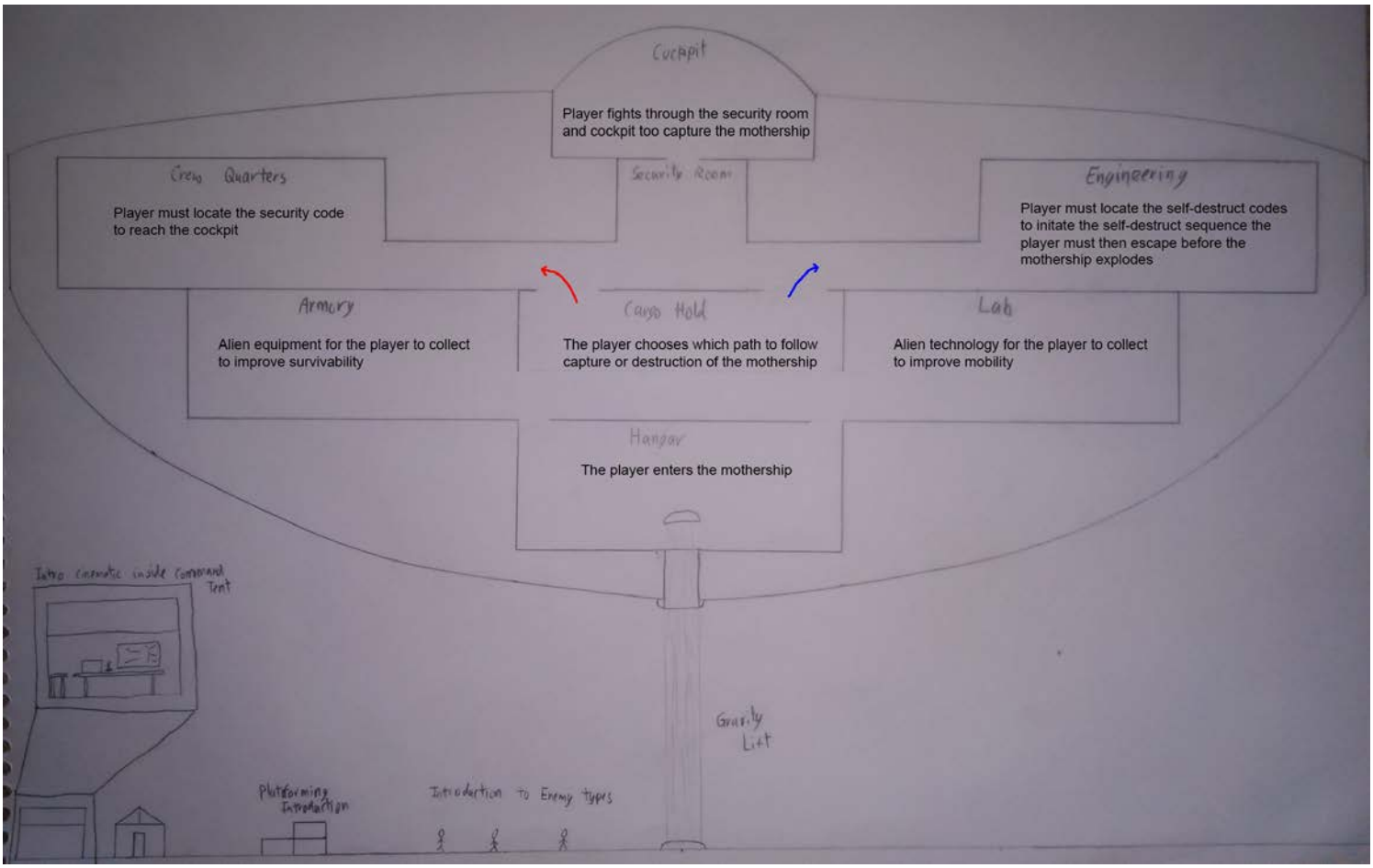
X 2
X 1
1
2


X 2
X 1
1
2


PAUSED
Resume
Options
Quit

GAME OVER
Score: 213,000
Rank : 1ST
ENTER NAME
_ _ _

2.3. Level Map



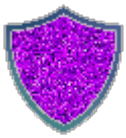
2.4. Sprites & other Media

[Placeholder avatar sprite]

[Collectibles]

Health Pickup Sprites

Armor Pickup Sprites



Menu Music

2.5. Story

Alien Incursion is a 2D Action Platformer game set in the near future where the player character is serving in the Australian Defence Force (ADF) during an alien invasion. The player as a member of an elite SASR Unit is tasked with infiltrating one of the alien motherships to gather intel and capture or destroy the mothership. The player will use their training and instincts to navigate through the unfamiliar surroundings inside the alien mothership collecting alien technology and weapons along the way.

The group decided on this story because it's a similar premise to games we have all played before. The story also leaves itself open for a sequel because at the end of either path the player survives and as there is an invasion going on there is still a war to fight.

3. Project Progress

Luke Edgar (20 Hours)

Title	Planned Start	Planned Due	Completed on
Week #			
Placeholder Avatar Sprite	26/ 9/ 2016	2/ 10/ 2016	30/ 9/ 2016
Basic avatar controller	3/ 10/ 2016	9/ 10/ 2016	5/ 10/ 2016
Word design	10/ 10/ 2016	16/ 10/ 2016	18/ 10/ 2016
Placeholder level for testing	17/ 10/ 2016	23/ 10/ 2016	22/ 10/ 2016

Dean Tesoriero (20 Hours)

Title	Planned Start	Planned Due	Completed on
Week #			
Avatar Controller	26/ 9/ 2016	30/ 10/ 2016	
Movement Enhancement System	24/ 10/ 2016	20/ 11/ 2016	

Subrata Barua (20 Hours)

Title	Planned Start	Planned Due	Completed on
Week #			
Player Health System	26/ 9/ 2016	23/ 10/ 2016	
Checkpoint and Lives Systems	24/ 10/ 2016	20/ 11/ 2016	

Fabryel Debay (20 Hours)

Title	Planned Start	Planned Due	Completed on
Week 5			
Create Game Logo	26/ 9/ 2016	3/ 10/ 2016	16/ 9/ 2016
Menu Music - mock up	26/ 9/ 2016	3/ 10/ 2016	3/ 9/ 2016
Week 6			
In Game - User Interface Mockup	03/ 10/ 2016	23/ 10/ 2016	23/ 10/ 2016
Week 7			
Menu - User Interface Mock up	10/ 10/ 2016	17/ 10/ 2016	16/ 10/ 2016
Week 8			
Refine Menu Music	17/ 10/ 2016	23/ 11/ 2016	23/ 10/ 2016

Jake McKemmish (20 Hours)

Title	Planned Start	Planned Due	Completed on
Week #			
Collectibles	26/ 9/ 2016	23/ 10/ 2016	
Upgrades and Equipment Systems	24/ 10/ 2016	20/ 11/ 2016	

4. Reflection & Learnings

4.1. The Project

4.1.1. The Climb

A. How challenging has it been so far?

Luke:
The main challenge has been team availability with coordinating the group the biggest challenge.

Dean:
Team availability and engagement been the biggest issue for our team. Unity has a learning curve even with programing experience.

Subrata:
To find a suitable time as a group and no prior knowledge of Game Design was challenging for me. No Graphics Designing knowledge was painful as well.

Fabryel:
There are many facets in designing and creating a game, most are challenging to me. It has been mostly challenging finding a time to discuss the project as a group with everyone's input. Working out the details on all aspects of the game is very hard when we are never online at the same time.

Jake:
Overall the main challenge has been making art assets with limited experience in graphics design and drawing in general. Team communication and availability has also been a significant issue.

B. What have you found easy?

Luke:
Creating the game world was relatively easy because the group decided on a clear design for the game world.

Dean:
There are a lot of unity tutorials available on the internet on a range of different topics

Subrata:
Unity has good Tutorials about 2D game making. Youtube and Linda.com was Helpfull.

Fabryel:
All aspects of this project have been equally challenging. The easiest part is using the trello boards and using the cards to progress through project timeline.

Jake:
I found coming up with ideas for collectibles was greatly helped by the overall direction of the project that the group decided upon early on and was the easiest task.

C. What have you found difficult? Was this what you expected?

Luke:
Designing the sprites for the game has also been a the most difficult part for me because I've never created 8-Bit graphics. I wasn't expecting it to be the most difficult because I've done drawing and graphic design before.

Dean:
The most difficult thing for me is learning unity and anything around design and UX. This project has been a learning experience for me.

Subrata:
As a group I wasn't sure where to start and what to do ? I wish my other experienced group members could help me with that problem. I didn't expected that.

Fabryel:
Apart from coming to group decisions, Unity has probably the hardest for me to learn. I did expect Unity to be the biggest hurdle for me.

Jake:

The most difficult thing was designing and creating sprite art as I've not had a lot of exposure to art or design in general. I expected this to be the most difficult task but probably underestimated how difficult I've found it.

D. In what ways have you been technically stretched?

Luke:
Creating 8-Bit graphics and learning Unity has been a technical challenge for me as I've never used it before.

Dean:
Unity knowledge has completely new for me. I also have very weak UX and design skills so that has been technically difficult.

Subrata:
Making Game obstacles and live system was challenging to me .C# is a new programing language for me.

Fabryel:
Understanding the concepts of creating a 2D platformer and at the same time learning how to do that within Unity.

Jake:
Learning how to use Unity and create sprites has been the biggest technical challenge for me.

E. In hindsight, what would you have done differently?

Luke:
Allocate more time to the project and not waste time trying to create more detailed sprites.

Dean:
Invested more time into this project and made myself more available.

Subrata:
I need to put more effort to learn how to work with Unity and Game designing so that I can be more useful to my Team.

Fabryel:
I would have arranged a definite time with the group once or twice a week to work through the project together to keep everything on track.

Jake:
I would have made more time for this project and devoted more time earlier on in getting to grips with Unity and image editing.

4.12. The Roadblocks

A. What obstacles and/ or roadblocks have you faced?

Luke:
Lack of team communication and coordination has been the main roadblock.

Dean:
Team availability has been and getting everyone to sit down and work together has been our biggest obstacle.

Subrata:
Not having Team meeting, Not Helping each other and Not getting time out my work are the roadblocks i encountered.

Fabryel:
Not having a solid direction for the project with fleshed out ideas.

Jake:
Not having a lot of experience working in a group with different schedules has made it quite difficult to organise every to be on the same page.

B. What have you done to approach the obstacles?

Luke:
I've tried to allocate more time to enable better coordination with the team.

Dean:

Trying to make myself more available and find time to spend with team.

Subrata:
The extra time I have for studies I gathered knowledge to overcome those obstacles.

Fabryel:
I have mentioned in mentor chats the group needs to come together and work as a team and use our communication tools like slack and trello more effectively.

Jake:
I've tried to make myself more available for scheduled group meeting and tried to learn how to keep Trello clear and informative.

C. Have these been overcome? If so, how so, else, why not and what have you attempted to overcome the roadblocks?

Luke:
Because of situations outside of my control in recent weeks I haven't been able to allocate the extra time that I would like. These situations have now been dealt with and I will be able to allocate the extra time again.

Dean:
Real life commits have been restricting my availability. I have set aside some time these next few weeks to build and complete the project.

Subrata:
In My opinion those things I didn't overcome. I think we need a Group meeting and then only we can fix those problems.

Fabryel:
As this course progresses the group is getting more engaged and is slowly overcoming the lack of communication as the project needs to get complete.

Jake:
I've reorganised my personal and work commitments to make my schedule more in line with the needs of the group in the last couple of weeks. While this hasn't completely overcome our communication issues, as a group we are improving.

4.1.3. The Destination

A. Has the project's goal changed since assignment 1? If so, how & why? If not, why not?

Luke:
Because we put a lot of time and effort into the original design of the project there hasn't really been any changes to the final goal.

Dean:
The goal hasn't changed much since the first assignment. The design phase of this project was very solid and we have no reason to change it.

Subrata:
Project Goal wasn't changed much since the assignment.From the beginning we had a pretty solid Game designing Idea.

Fabryel:
The goal was set in the first assignment and has not been changed since. The goal is well defined and it's made working on the project much easier.

Jake:
Thankfully the project goal was clearly laid-out from the beginning so there hasn't been any need to revise it.

B. What have you learnt about the project's goals? What is now clearer to you than when you first begun this project?

Luke:
I've learnt that because of the time restrictions of the project making detailed sprites for the project wasn't an option.

Dean:
How a team can work on a project like this and how game design can be split up.

Subrata:

The Project's goal is to create a 2D Game in Unity 3D Game Engine. We created our Github repository to upload scripts like UserMovement.cs, PlayersHealth.cs etc

Fabryel:
I don't feel like the goal has become any clearer, but the realization of the difficulties to complete the goal are now much more clearer.

Jake:
As the goal was so clearly defined and well discussed originally, I don't feel as if I've learned much about the goals. However I've come to the realisation that there is a lot more involved with achieving it than I first thought.

C. If you were asked to repeat the same project again, what improvements/ changes would you make?

Luke:
Creating a more detailed map of the project's design path to make creating the project a lot easier.

Dean:
Learn some design skills to make the game aesthetically pleasing.

Subrata:
I will give more time on Game designing and UX.

Fabryel:
Having a group discussion about the what strengths and weaknesses and interests each individual has. Then assign everyone to a specific task that best matches them. Also organise a consistent time for group meetings.

Jake:
Being stricter with group meeting times and having a better network for supporting the learning process for those who are less experienced would help.

4.1.4. The Journey

A. Has your plans changed since assignment 1? If so, how, else, how can it be improved?

Luke:
My plans on what to do for the project haven't changed much but my allocation of time to the plan needs to be more balanced.

Dean:
The plans haven't changed much and im expecting the workload to ramp up in the next few weeks.

Subrata:
My plans not changed much. I wish i can allocate more time for my team to collaborate.

Fabryel:
My plan was to follow the trello cards assigned to me and complete them on time. I could improve this by working on additional artefacts needed for the project that have not been allocated to anyone yet.

Jake:
There haven't been many changes to my overall plan since assignment 1. I think putting aside more time to consistently and correctly utilise Trello would help keep all group members informed.

B. Have things turned out as you expected?

Luke:
I expected more of the project to be completed but the group has progressed very well in developing the skills that the rest of the project will require.

Dean:
Project seems to progressing well and i think that the product we produce will be of a high standard.

Subrata:
Project wise I think we are doing good. Couple of our team members have great knowledge about Game Development that's a plus point.

Fabryel:
So far what has been completed is consistent with that I have expected. My expectations have been low as this is my first group project, and first time creating a 2D platformer in Unity.

Jake:
We have completed about as much as I'd expected at this point in time.

C. Has your schedule been realistic? Why/ Why not? How can it be improved?

Luke:
My schedule was realistic but situations outside of my control caused unexpected delays. To improve this I will attempt to schedule more time too the project to provide a buffer to avoid the same problems

Dean:
My schedule was realistic and i feel i can allocate more time to this project over the next few weeks.

Subrata:
I think my Schedule was realistic for this project. More Team collaboration and more work load can be given to me.

Fabryel:
Some of the tasks I had scheduled myself have not been realistic as I did not expect them to take as long as they have. I can improve this by breaking my tasks down to smaller more manageable ones.

Jake:
I think my schedule has been realistic, but the amount of ramp-up time on some parts has caused some time pressures. Atomising the tasks assigned to me would help a great deal with more accurately judging how long each task might take.

D. What would you do differently if you had your time over again? Equipped with this knowledge, how will you apply it to your journey between now, and Assignment 3?

Luke:

If I had my time over again I would better divide the tasks as the time between assignment 1 and 2 was meant for more just designing the project than actual creation of the project. The journey between now and assignment 3 is now to focus entirely on creating the final product.

Dean:
Great more granular tasks for me to complete and spend less time doing tutorials.

Subrata:
I would have use trello to divide my work load weekly and I will communicate more with my Team mates.

Fabryel:
If I could redo what has been done until now, I think working as a team would have been the number one priority. I think to complete assignment 3 we will need to come together as a team and get our individual components to seamlessly integrate.

Jake:
I would have spent more time at the beginning laying out each individual task, including things like time frame, due date, required knowledge, and submitting this to Trello so my team mates could be more informed about my progress.

E. Has your role in the team changed from when it was initially conceived ? If so, why ? Is the current role appropriate? If not, should it have changed? Why/ why not?

Luke:
My main roles in the team hasn't changed and are appropriate to my skills. I have taken on the addition role of creating the sprites for the game as it was something extra the group needed

Dean:
My role hasn't changed yet but i don't think my programming experience has been put to use. Im expecting my programming skills to be put to use in the next few weeks.

Subrata:
My Main role is to take care of different checkpoints and players Health and Damage system. I think the role is appropriate for me.

And It didn't changed a lot because of other Team members also busy doing their own role in the project.

Fabryel:
I initially gave myself the role of programmer and sound designer. So far the project has not required the use of programming skills. My role now has changed to user interface design and also I've been managing the group as best I can through slack. I think it has been appropriate to change roles to suit the project and group's needs.

Jake:
My role in the team has not changed due to other team members picking up additional elements more appropriate to their skills which only became apparent later. I believe given my level of experience that it is appropriate.

4.15. The Lessons

A. What have you learned? What do you know now, that you previously didn't know? How will you apply it moving forward?

Luke:
I've learned that when creating a 2D Platformer game there doesn't need to be as much focus on the visuals of the game as the mechanics of the game are the most important. Going forward I will apply this knowledge to creating sprites and assets that have a look and feel of what we are trying to create but that it doesn't have to be overly detailed to show that.

Dean:
My exposure to the Unity game engine has been extremely interesting. I also learned it possible to break a large project down into small tasks that are achievable through teamwork.

Subrata
I didn't know about that there is Unity and other Game Engines to help you making Games so easily. How to work as a Team and the hurdles working as a team. I will apply my experience to design, develop a Game as a Team in my future projects. Working with Trello and Github is a new experience to me.

Fabryel:

I have learnt how valuable teamwork can be and how the lack of it can cause delays in meeting deadlines. I can put this knowledge to good use to complete the next assignment.

Jake:
I've learned that having solid communication is the key to successful group work. While organising a static meeting time might have seemed helpful, it did not suit members' changing schedules therefore in future I would create a more dynamic communication timetable to accommodate all group members.

B. Have you developed any new skills and/or new experiences?

Luke:
I have learn't more about working as a team and the restrictions that can entail and I will continue to better develop my team working skills.

Dean:
I am learning alot about unity and using trello efficiently during this project.

Subrata:
I am learning a total new platform like Unity that's a new experience. C# is a new programing language for me as well. I learned to take advantage of Trello and Github for a team based project.

Fabryel:
I have developed new skills with Unity and game design principles in general. New experiences have been the google hangout chats with our team mentor.

Jake:
I've learned a lot about creating smaller, pixel-art images while conveying clear visual meaning.

C. What things that didn't work out for you/dead-ends have you encountered during your project? What did you learn from it?

Luke:

The main dead end I encountered was trying to create a look to the game that I'm used to in modern AAA games. When I realised that it wasn't going to work I looked back at the original platformer games and realized the visuals of a 2D platformer aren't as important as the feel of the game.

Dean:

I was lost in how i can contribute but i feel i know what im doing now.

Subrata:

I didn't have a clear idea what i was doing and where should i start.

Fabryel:

Creating music in the wrong type of program. Choosing the wrong tools for the job can cause delays.

Jake:

Trying to be too detailed with sprite art leads to a lot of frustration and time-wasting, simpler is usually better for small scale images.

D. What successes have you had during the project? What did you do to achieve it ?

Luke:

Successfully created the draft of the game world. This was achieved by creating the basic idea of the game world as a group and then through a few iterations the draft map of the game world was created.

Dean:

The use of tools like Git and Trello has help produce a successful plan so far.

Subrata:

So far we did the game design and storyboard. Slowly we are getting there. I am responsible for the Checkpoints and LIve system of the player.

Fabryel:

Successfully learning, understanding and using Trello. Trello looked very confusing when I first started this course and now I consider it an invaluable tool for group collaboration.

Jake:
I learned convey an idea with a very small canvas and the benefits of using a collaborative issue tracking system like Trello when working on a group project.

E. What advice would you give to a group about to embark on a similar project?

Luke:
Clearly define the goals of the project map out in as much detail as possible the parts of the project that will come together to make the final product and communicate and coordinated as much as possible with the rest of the team and discuss any issues people are having.

Dean:
Set a consistent time every week to work together. Determine everyones strengths and weaknesses early and plan tasks around them.

Subrata:
Group Meeting as much as possible to assign jobs for every week for each member and helping other members when they are stuck with problems.

Fabryel:
Set your goals at the start project realistically. Organize a weekly routine for group chats. Don't be worried to make mistakes and try alternative tools if you get stuck with one.

Jake:
Make sure early on that each group member is comfortable with the work assigned to them, set a precedent for and encourage those struggling to let the group know.

4.2. The Processes & Collaboration Mechanics

4.2.1. Collaborative Workspaces

A. Tell us what you used to collaborate on your project, and your report.

Our main tools of collaboration were Trello, GitHub and Google Docs.

B. Tell us how you used it.

We have our own team board in Trello. We created different useful cards in our board and would tag the appropriate team members to get reminders and notifications.

Google Docs was used to create our documents needed for the project like our story board and report.

GitHub was used to share our game assets and code with each other.

C. Tell us what are the benefits, and challenges for the said tool.

With Trello we can add cards to Highlight to do things daily/weekly/monthly basis. Trello cards can be sent to members email and vice versa. You can make checklist and put due date and send notification to members email. Add different color coded labels. We can share files through card. These are just few benefits of Trello

Google Docs allows us to work on document editing together at the same time.

GitHub helps us keep track of the most up to date version of our assets and code and allows us to make changes to them at any time.

The challenges for these tools were that they were new to most of our team members but the learning was easy.

D. If you had a do-over, what would you have done differently.

If we had a do-over we would use those collaboration tools more extensively to finish our project.

4.2.2. Communication Expectations

A. Tell us, what channels/mediums you ended up using for your communication, and their expected response times from your team.

We use Slack for our team communication and ideally the response time expected is a day.

B. Tell us, how you typically used that medium/channel in question.

We created a team in Slack and installed the app on our phones and computers to get instant messages from each other. We typically used it to ask each other questions, share ideas and organize ourselves to complete tasks.

C. Tell us what are the benefits, and challenges for the said tool.

Slack allows us to send messages to our whole team, even when they are not online. One of the challenges though was when the team isn't online at the same time, it's difficult to have meaningful conversations without it being fragmented.

D. If you had a do-over, what would you have done differently.

Organize a time in Slack that we should all be available to chat each week.

4.2.3. Decision Making Process

A. Describe to us what your decision making process flow is like.

A suggestion is made in the group slack channel and as a team the idea is discussed. Provided a decision has been made and the team has come to an agreement the corresponding ticket can be created in Trello. At times when everyone is not available members have made an executive decision and proceed on.

B. Has this helped with your decision making and collaboration? If so, why, else why not?

Discussing the task/issue as a team has help bring clarity to idea and identify any gaps. Getting the team's opinion on ideas help us understand the intention of the idea.

C. Tell us, what worked well with your decision making process, and what didn't.

The idea process seemed to work quite well and when we managed to get everyone available we made good progress. The part that didn't work was everyone wasn't available and the idea was stalled until everyone was available.

D. If you had a do-over, what would you have done differently.

As a team we were happy with the process we established.