
Assignment 1

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

8-Bits Studio

by

Luke Edgar, 3562275,
Dean Tesoriero, 3413353,
Subrata Barua, 3574018,
Fabryel Debay, 3562731,
Jake McKemmish, 3551628

14/09/2016

1. What

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

Your Locale : Queensland, Australia

Background & Passion in IT :

I've been using computers since before I could walk and that passion continues today as I try to keep up with all the major developments in the IT world.

What are you good at / What you're interested in ?

As a long time gamer I've been interested in the video game industry most of my life. This gives me extensive knowledge into the video game design and development process.

What are your weak-point in the context of the project ?

When it comes to programing I'm not used to working as a team so my ability to work in a team is my weak-point in the project.

What role do you see yourself mainly playing in the team ?

With my experience in programing and video game development I see myself playing the role of the project manager of the group and a designer/programer.

Fabryel Debay

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

Your Locale : Sydney, NSW, Australia, Earth

Background & Passion in IT :

Basic knowledge of many different programming and scripting languages mostly learned as a hobby. Have a job as a junior .net programmer and work a lot with databases. Have a passion to learn new programming concepts and apply them to real world scenarios.

What are you good at / What you're interested in ?

A jack of all trades but a master of none. I'd love to do some game programming again, I wrote a 2D game engine in x86 assembly many many years ago that ran in ms-dos and would like to try make something more modern.

What are your weak-point in the context of the project ?

I have never worked in a group before for a software project. I think it is something I will have to work on and it will be challenging.

What role do you see yourself mainly playing in the team ?

Helping manage the project with the project manager and keeping the project on track. Also I will try and take on the role of implementing sounds and music into the game.

Subrata Barua

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

Your Locale : Melbourne, Australia

Background & Passion in IT :

I love programming Database driven application

What are you good at / What you're interested in ?

My Interest are in Programming and database design.

What are your weak-point in the context of the project ?

My weak points will be never made a game before.

What role do you see yourself mainly playing in the team ?

Programming mainly.

Dean Tesoriero

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

Your Locale : Sydney, Australia

Background & Passion in IT :

Been working in IT for the past 6 years. Currently a Java developer at a bank. Have always had a keen interest in computers the moment i had access to one.

What are you good at / What you're interested in ?

I've been developing software for a few years so that would be one of my strong points. I'm also an avid gamer and i've played all types of games over the years

What are your weak-point in the context of the project ?

I don't have any experience developing games and i'm also a backend developer so my design skills are horrible of course. My available hours are pretty erratic so it might be an issue.

What role do you see yourself mainly playing in the team ?

Im hoping to help with development and teach everyone else some agile methodologies.

Jake McKemmish

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

Your Locale : Brisbane, Australia

Background & Passion in IT :

While I've been interested in computers since I was young, I have only been in the IT industry for a little over a year. I'm currently interning at a software development company working primarily on test automation and QA. I am also really passionate about videogames.

What are you good at / What you're interested in ?

I've done a lot of work doing QA in a team environment and have a little bit of experience working within an agile(ish) framework. While I'm not very experienced, I would like to try my hand at doing some design work if possible.

What are your weak-point in the context of the project ?

I've never developed a game before and I am not an experienced programmer.

What role do you see yourself mainly playing in the team ?
Programmer and designer.

1.4. Demonstrable Outcomes

1.4.1. Minimum Viable Product

1.4.1.1. 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?

1.4.1.2. 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?

1.4.1.3. 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?

1.5. Project Motivation

As a group we chose to develop a 2D Platformer game as our project because it's a subject we all know something about and it's a project we were all very interested to work on.

The idea behind Alien Incursion is also something the group is interested in as we all enjoy sci-fi styled games. This will also make creating the game more enjoyable. As the content is based on science fiction, we will have more freedom in creating the levels, enemies, weapons and power-ups.

Each member has played plenty of platformers before, so we have an understanding of the structure and components needed to create one.

1.6. Project Justification

1.6.1. Justified Workload

Tasks have been created from an overall perspective of the project. The workload of the all the task keeps in line with the 200 hours needed to be done for this project.

As we have not created a video game and lack the knowledge on how to use the tools needed, the workload is just an estimate.

As large tasks are split to form weekly tasks, the workloads and estimated times might increase depending on our ability to complete them.

1.6.2. Beyond Current Capabilities

Most of the group has never worked on a video game before and none of us have previously worked as a group to create a video game from the ground up.

Learning how to use the tools required to complete this project will be a steep learning curve to all members

1.7. Project Risks

1.7.1. Risk :

Loss of data due to hardware failure. Any of the team members have a possibility of their computer hardware failing and causing a loss of data for the task they were working on.

Mitigation :

Making backup copies of work created, also continually updating our GitHub repo with any changes we have made to the project. Keeping a copy of all files on our shared google drive will also provide redundancy incase GitHub is not available.

1.7.2. Risk :

Not completing the Weekly Tasks due to lack of abilities or scope of task is too large.

Mitigation :

If a weekly task is taking too long, we will discuss with the group how to better split it into smaller tasks. If the task is not accomplishable due to lack of abilities, as a group we will reconsider the scope of our project and create alternate tasks that will be similar but more suited to our abilities.

How

1.8. Resources & Tools

Unity : Video game development suite.

URL : <https://unity3d.com/>

Why : Unity is the choice for independent developers because of its flexibility.

Cost : Free - <https://unity3d.com/legal/terms-of-service> - Personal Use.

Alternatives : Unreal Engine - <https://www.unrealengine.com/>

Slack : Communications platform.

URL : <https://slack.com/>

Why : Slack provides a universal communications platform that works in any browser or smart device.

Cost : Free - <https://slack.com/pricing>

Alternatives : Google Hangouts

GitHub : Git repository service

URL : <https://github.com/>

Why : GitHub provides a location to share all the files required for the project.

Cost : Free

Alternatives : Google Drive

GIMP : Graphics Editor

URL: <http://www.gimp.org/>

Why: Free, easily accessible opensource graphics editor.

Cost : Free - <https://www.gimp.org/about/COPYING>

Alternatives: Microsoft Paint

Audacity : Multi-track Audio Editor

URL: <http://www.audacityteam.org/>

Why : Simple to use free audio editor.

Cost : Free - <http://www.audacityteam.org/copyright/>

Alternatives : FL Studio - <http://www.image-line.com/flstudio/>

Famitracker : 8bit Music maker

URL : <http://www.famitracker.com/>

Why : Creates authentic sounding 8bit video game music.

Cost : Free - GNU General Public License

Alternatives : FL Studio - <http://www.image-line.com/flstudio/>

1.9. Collaborative Workspaces

GitHub : Where all our Project Files are located.

URL : <https://github.com/Luke-Edgar/8-Bits-Studio>

Google Drive : Location for documentation and as a backup

URL : <https://drive.google.com/open?id=0B5eiFyeipqgoN1VWZWWhEcjhkWG8> :

Trello : Organisation and allocation of workloads for the project

URL : <https://trello.com/b/qUar52Lj/8-bits-studio>

1.10. Communication Expectations

Slack

Used for : Chatting and tracking project documents

Expected Response Time : within 3 hours between 9am - 10pm, daily

Comments : Using this for group chat

Google Hangouts Group Chat

Used for : Used as backup chat when people unavailable on slack

Expected Response Time : within 3 hours between 9am - 10pm, daily.

Comments : Used as backup

Missing in Action Protocol

Triggers :

If no prior notice to absence has been given via Trello/Email, and

(1) No Communication on our Slack or Google Hangouts Group Chat for 2 days consecutively, and/or

(2) No Activity on Trello for more than 72 hours consecutively, and/or

(3) No response to 3 group emails consecutively over the period of 3 days.

Action :

An email is sent to the person that is MIA, copying in all the group members, the mentor, and the instructor in the email, notifying that he/she is deemed MIA. If no response is received in 24 hours, discussion with mentor regarding the MIA will take place which may result in expulsion from the team.

1.11. Decision Making Processes

Decision Process

1. Proposer (proposed the motion and provides the rationale)
2. Team discussion on the matter via Trello and/or Slack
3. Simple majority accepted
4. Decision recorded on card, and actioned to a member of the team who is accountable for the carrying out of the decision.

Dispute Resolution

1. Various viewpoints contributed to a document
2. One person will present the points, and take votes.
3. Viewpoint with most votes will be adopted. If a tie happens, flip a coin.

2. When

Title	Planned Start	Planned Due	Lead by
Playable level with Win/Loss State	26/9/2016	23/10/2016	Luke Edgar
Avatar Controller	26/9/2016	23/10/2016	Dean Tesoriero
Player Health System	26/9/2016	23/10/2016	Subrata Barua
User Interface	26/9/2016	23/10/2016	Fabryel Debay
Collectibles	26/9/2016	23/10/2016	Jake McKemmish
Enemy Creatures	24/10/2016	20/11/2016	Luke Edgar
Movement Enhancement System	24/10/2016	20/11/2016	Dean Tesoriero
Checkpoint and Lives Systems	24/10/2016	20/11/2016	Subrata Barua
Background Music and Sound Effects	24/10/2016	20/11/2016	Fabryel Debay
Upgrades and Equipment Systems	24/10/2016	20/11/2016	Jake McKemmish