

COSC2196

Introduction to Information Technology

Assessment 3: Our IT Project

Zombie Girl Game Development Project



Project Lead

Stephanie Kelloway

Team Lead/ Developer Support

Shane Rogers

Lead Developer

Peter Luong

Media Specialists

Jerard Ogoy & Guangchen (Jensen) Deng



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Our IT Project

Team Profile

Team Name

As a group, we decided to name ourselves ProjectX, this name pays homage to the unknown nature of our project at the beginning of the creative process. We believe the name ProjectX also illustrates the dynamic nature of our team, and the fact that we've been able to pivot and alter our approach when required right throughout this process.

Please see appendix one for further detail on the ProjectX brand.

Meet the Team



Project Lead

Stephanie Kelloway

Student Number: s3824207

Steph lives in Brisbane with her husband and 7-year-old gold sable East German working line German Shepherd named Aris. She collects brooches, loves both reading and musical theatre, is a massive country music fan and openly admits to being an "Elvis Presley tragic". To round things off she is also very interested in both domestic and international politics. Her interest in IT as a long-term career has become increasingly apparent while helping to improve the IT systems in her workplace. Steph has had various roles including Corporate Receptionist, Engineering Team Administrator and Management Assistant. She is currently working as a Land Systems & Process Advisor but her real interest lies in the areas of cloud computing, web design, communication and ethics.



Team Lead/ Developer Support

Shane Rogers

Student Number: s3292697

Living in Sydney with his 3 daughters, Shane enjoys finding unconventional solutions to challenging IT problems. Along with developing his knowledge of modern computer languages he also volunteers as an AUSLAN interpreter for the deaf. His interest in IT lead him through a career spanning about 20 years where he worked for local government, the private sector and for about 10 years at Cisco

Systems. Life circumstances required him to walk away from IT, but he is now working towards his Bachelor of Information Technology in the hopes of being "qualified" to return to the workforce and take on a senior IT role.



Lead Developer

Peter Luong

Student Number: s2183689

Peter lives in Darwin with his wife and children. After a career in the Australian Defence Force Peter worked in the public service sector throughout the Northern Territory. He has held a position as a senior officer in justice and public safety. When not working, he enjoys practicing for marathons, going on hikes, and planning family adventures. Peter's interest in IT began with computer games and has expanded to include cybersecurity, artificial intelligence and programming. He is hoping to increase his knowledge and skills through hands-on experience while studying for his Bachelor of Information Technology at RMIT.



Media Specialist

Guangchen (Jensen) Deng

Student Number: 3578418

Jensen grew up in the southern region of China and now lives in Melbourne. He loves playing badminton and computer games. He is impressed with people's ability to make websites and is hoping to learn enough to be able to make his own. As a boy he was shown computer games that one of his relatives made. He says that he prefers playing computer games but thinks that maybe after completing his studies at RMIT he will be interested in how to make a game.



Media Specialist

Jerard Ogoy

Student Number: s3824196

Jerard has worked for the past 6 years as a full time Assistant in nursing. He clearly loves the work and people who know him say that he has the patience of a saint. His work can be stressful though and so he enjoys playing computer games to relieve the stress and just to pass the time. The people he works with tell him that he should get into IT because he has a natural ability to solve problems like Printing and connection issues. Jerard is studying at RMIT where he expects to develop the skills that will be relevant to a future career in IT.

Summary

Having worked together previously has allowed us to understand each team members strengths and areas for development and play to those strengths throughout this project. As in our previous work, Stephanie stepped into the role of Project Lead immediately, while Peter and Shane took the lead on the technical aspects of this project – this proactivity has allowed us to hit the ground running. Peter is



our lead developer with support from Shane while Jerard & Jensen worked primarily on our promotional video.

Shane also created our website, GitHub repository and our draft Google Document, which allowed us to allocate tasks and start work on the project immediately. As in our previous work, Stephanie has taken on overseeing the project more broadly, including making decisions, allocating work, challenging team members on their contributions when required and proof reading, editing & submitting the final project submission on behalf of the team.

Team Processes

As a group, we all found assignment 2 quite challenging due to the limited time remaining to complete the task once our team was formed. Despite this, we did an amazing job of pulling together a polished submission which was quite well received.

Due to our previous success in working together, our process is largely the same this time around, though there is always room for improvement. On this basis, there are two areas we thought would benefit from an altered approach.

The last project we completed saw several team members working late on the day of submission to ensure we submitted a complete document. To help ensure this didn't happen with this project, as a team, we made the decision that each of us should aim to have their assigned written sections completed at least one week ahead of the actual submission date. By doing this, we allowed ourselves enough time for editing and proof reading of our written project report so that we won't have people working late on the day of submission. We felt this was particularly important on this project given that we have multiple submissions due on the same day.

This also ensured that Shane had enough time to update our website with the requisite information and allowed us to have Jerard & Jensen dedicated to finalizing the production of our video presentation in the week prior to submission, as they took the lead on this due to their skills in video and audio production.

We are fortunate that we have such a wide variety of skills among our team members as this made allocating roles across our project report and video presentation a relatively straight forward process.

By approaching the two tasks in this manner, it meant we were able to complete both submissions to an appropriately professional standard.

As in our previous work, we found it difficult to get started, so to help us combat this this, we decided to create the prototype of our game before looking at the rest of the project. Once we had this prototype and basic concept, we were able to work back from there. The first roadblock we faced was selecting the software for developing our game; through Peters investigations, we decided that Buildbox was the most appropriate tool for our project. Buildbox is extremely user friendly, and using it allowed us to create a prototype of our game relatively quickly. Once we had the prototype of our game and had fully identified our current requirements and those for future phases of work, we re-evaluated our chosen software. Through this process, we discovered that everything within our current scope of work was possible using this version of Buildbox. The only game feature included in future scopes of work, not available using the current version of Buildbox, is the ability to include a multiplayer mode, however this is slated for release in the next version of Buildbox.

Career Plans

Below, each group member has detailed their career plans, specifically, how they will achieve professional fulfilment and ultimately work toward moving into their ideal job.

Stephanie Kelloway – Modern Workplace Consultant

In my efforts to work toward my goal of becoming a Modern Workplace Consultant, I will continue to work toward completing my Undergraduate Degree in Information Technology, focusing on cloud-based computing solutions, and project management.

In Addition to getting my degree, there are many skills that I will gain through my current role at work. Currently I am running a data migration project that will help me begin to gain experience in the area of project management. Once I see this project through to completion, I believe that will have me better placed to take on larger projects.

Through my current role, I am heavily involved in rolling out the Microsoft Collaboration suite for my team; this includes building complex workflows in SharePoint Online, along with SharePoint Online more broadly, the rollout and use of Microsoft Teams, Azure & Office 365. I will also continue to work toward building the bot I described in Assignment One as it will create efficiencies for my team and allow me to understand how to create a bot on a practical level.

My ideal role also requires exceptional stakeholder management skills, I believe that my skills are extremely well developed in this regard through my time spent as a Team Administrator and Executive Assistant – I'm very adept at managing expectations and prioritisation as well as communicating with stakeholders, both within and outside of my organisation

All the above skills are required for my ideal role as a Modern Workplace Consultant, specialising in the Microsoft Collaboration Suite so I'm comfortable that I'm well on my way to gaining the necessary skills to achieve my goal.

I will also look for appropriate development opportunities at work where possible, including work-based courses & appropriate work experience within the relevant teams within Shell where possible.

This strategy coupled with the research & work I complete in my own time I believe, will allow me to be best placed to take on this role upon completion of my university degree.

Shane Rogers – IT Entrepreneur

To become an IT Entrepreneur has been an evolving process over the past 20 years. I have made several attempts to "go out on my own" but each time I realised that there were still skills I needed to learn to be successful. Being a solo parent of five children for the past 10 years has refined my management skills and shown me that I have what it takes to push through the challenges and manage a small team. Attempting to return to the IT world it became evident that to get my foot in the door I need to have an IT degree so that I can pass the basic criteria for IT candidates.

My plan is to complete the Bachelor of IT through open universities by the middle of 2021 and take on a senior role in a large IT organisation.

After about two years I anticipate that I will have been able to establish enough industry connections to again attempt to work either alone or with a small number of employees.

While researching the suitability of Buildbox for this project I re-discovered my interest in software development. I now have 3 apps in development using Buildbox. I have been using them to learn the capabilities of the software. The simplicity of the interface is impressive and the way that it can be extended with custom JavaScript opens a whole new world of possibilities for the developer.

I am looking forward to spending time developing games and utility apps while studying and this could lead me into an app development company sooner than completing the IT degree.

In summary my goal is to have the freedom to work on projects that take my interest and are financially viable. The exact path I take is only set in sand and will be adapted to the opportunities that come my way.

Peter Luong – Security Engineer

I am currently studying for a Bachelor of Information Technology and I will continue in this endeavor, as I work to gain relevant industry experience.

In terms of relevant industry experience, currently, I work for the Northern Territory Police, a job I intend to remain in while I study. I also intend to work toward applying for a role in the Northern Territory Police Computer Crimes unit.

To further my skills in the area of Cybersecurity, I intend to take additional courses so that I can learn how to code in Python, C and C++.

I will also work toward obtaining the following additional qualifications -

- CompTIA Security+
- GSEC: GIAC Security Essentials Certification
- SSCP: Systems Security Certified Practitioner

To build on the skills I will gain as noted above, I will also create an open-source project, participate in Cybersecurity contests and training games, e.g. Wargames. I will also look for vulnerabilities on open source projects and sites with bug bounties, & document the work I complete and my findings. Once I have completed my Undergraduate Degree in Information Technology, I will work to attain a Masters Degree in Cybersecurity.

Jerard Ogoy – Software Engineer

To support my goal of moving into a Software Engineer role, I will continue working toward earning an Undergraduate Degree in Computer Science.

To achieve my goal of working as a Software Engineer upon graduating from my Undergraduate Degree in Computer Science, relevant work experience will provide me with greater opportunities in this regard. To bolster this, I intend to apply for intern roles in the area of programming.

In my own time, I will continue to build on my current programming skills by practicing programming using Python, Ruby, JavaScript, C#, Java & C++. Further to this, I will also work toward gaining formal certifications in Adobe & App Builder, as well as becoming a Microsoft Certified Solutions Developer.

I will also study to better understand data structures & algorithms, by building software that allows me to develop my skills in this regard.

Upon gaining my undergraduate Degree in Computer Science, I will endeavor to complete a Masters Degree in Computer Science.

Guangchen (Jensen) Deng – Web Developer

To allow me to achieve my goal of becoming a Web Developer, I will continue to work toward completing my undergraduate Degree.

I will need to further develop my skills in the more technical aspects of this job, including, understanding and learning how to code in HTML/CSS, JavaScript, jQuery, Version Control/GIT, Testing/Debugging, Graphic Design, Sound Design & Responsive/Mobile Design.

Further to the technical skills I will need, I also need to better understand the web development more broadly, including in the areas of marketing, customer engagement and project management.

Beyond the skills I've stated above, in my own time, I would like to learn how to use Unity and Maya should I decide to go down the path of game development, as opposed to web development, as this is an area of interest for me as well. I am also proficient in the use of Photoshop which is a key skill for a Web Developer.

In order to achieve my goal, I chose IT as my elective course, and in my free time, I will work toward developing my skills in the areas noted above through online courses and other avenues. I will work to engage contacts in the IT industry with the goal of gaining work experience in Web Development or a similar area.

Commentary

While all the roles listed above have certain similarities, Stephanie and Shane's roles are outliers when compared to Peter, Jerard & Jensen's roles.

Stephanie's role has a significant focus on stakeholder management and project management and while the other roles may have elements of these, they aren't as focused on these areas. Stephanie's role is also heavily focused on the Microsoft Collaboration Suite, while the other four roles have a much broader remit, certainly in terms of operating systems and the requirement to learn programming using Python, Ruby & C++ as in Peter's plan.

Jensen's role, while technical, has a different focus than Peter & Jerard's roles in that it is more around the designing and creation of websites as opposed to the design and creation of systems and software. Jensen's role also requires him to understand areas and concepts beyond Web Development to better serve his customers, these areas include marketing, customer engagement and project management.

Also, unlike Peter, Jerard & Jensen's roles, which will require them to seek out work experience to allow them to gain relevant industry experience, Stephanie's plan allows her to incorporate her study into her work, and vice versa.

Although Peter will seek out work experience, his ideal role will ultimately have him staying with his current employer, but with a different team, in a different specialisation.

Peter and Jerard's roles both have a distinct focus on coding and software development and as part of their plans they both intend to work toward their Masters Degrees which is also unique within this group as this isn't in the plan for Stephanie, Jensen or Shane.

Shane's role and plan incorporate a much broader required skillset than Peter and Jerard's roles as he intends to become an IT Entrepreneur which will require him to understand every aspect of his business, including but not limited to the more technical aspects of an IT business, as well as finance, HR and everything else in between.

Tools

The website was a progressive development with contributions from team members added as they became available in our shared Google Document.

The site was designed to include not only the portions of the project that were mandatory but also the other sections of the assignment. The result is a website that is suitable to present to the public and which fully reflects our team and the work contributed by each team member.

We also configured a custom domain name to more professionally present our efforts to potential employers.

The site is hosted on GitHub pages and can be found at <http://projectx.group>.

The GitHub audit trail only reflects the commits that were made by the group member assigned to populate the website and in no way reflects the individual efforts of our group members, though we do have a Google Document and Discord channel that provide a full audit trail of our work.

The repository is at <https://rmit-group21/Assignment-Three/>.

Project Description

Overview

Topic

For our project, we've created a Smartphone game. While our game is quite simple in composition and design, it has will have the added functionality of being enabled for play by someone who is vision impaired; we believe this could make our game one of the standout releases of 2020.

In Australia, "It is estimated that there are over 575,000 people who are currently blind or have vision loss"[1] and every one of them is a potential gamer who has a limited range of options because of their impairment. We understand that not everyone will want to play our game, but we hope our release will open the door for other game developers to create and release more accessible games for people who are vision impaired so that there is more competition in the market.

Motivation

It's easy to look at a program like BuildBox with its "No Code" philosophy [2] and say that making a game has never been easier, so let's make another game. BuildBox even highlights the fact that there are many games at the top of the App Store rankings which were made using BuildBox [3]. At ProjectX though, we have a different vision, perhaps you could say a 20/20 vision. The team here at ProjectX recognise that we're unable to restore a person's sight, so we've decided to focus our attention on creating games that will have a user interface similar to other games currently on the market, but that are equally accessible to people with any degree of visual impairment.

Landscape

When computer games first arrived in the 1980's they were generally limited to text-based games. As games evolved, they became more graphically dominant. Some games are playable using adaptive overlays like screen readers but, when accessibility features are included, they often feel like an afterthought.

A standard model used today allows free gameplay so long as you are willing to put up with on-screen ads or through a paid upfront cost or subscription. Most ads are images splashed onto the screen to entice the player to try out another product or service. To a person who can't see the ad, they only serve as an interruption with zero benefit to the company supplying the ad. We plan on adopting this same model, but we will also introduce an add-free, no-cost, no-graphics (black screen) option called Non-Sense Mode. Don't see the ads, Don't see the game!

References

[1] A Snapshot of Blindness and Low Vision Services in Australia [online]. Available at: <https://www.vision2020australia.org.au/wp-content/uploads/2019/06/A-snapshot-of-blindness-and-low-vision-services-in-Australia-1.pdf> (Accessed: 11 February 2020)

[2] BuildBox website [online]. Available at: <https://www.buildbox.com/> (Accessed: 13 January 2020)

[3] The BuildBox All-Stars [online]. Available at: <https://www.buildbox.com/all-stars/> (Accessed: 20 January 2020)

[4] The current state of game accessibility guidelines [online]. Available at: <https://www.game-accessibility.com/documentation/accessibility-guidelines/> (Accessed: 11 February 2020)

Bibliography

[Buildbox | Game Maker | Video Game Software](#)

[Buildbox](#)

[All-Stars - Buildbox | Game Maker | Video Game Software](#)

Buildbox All-Stars are the games that have either been featured by Apple or broken the Top 100 of the app store. These are the best of the best.

[Game accessibility](#)

<https://www.game-accessibility.com/documentation/accessibility-guidelines/>

The current state of game accessibility guidelines, how to implement the various guidelines and links to all the guidelines currently existing.



[Buildbox | Game Maker | Video Game Software](#)

[Buildbox](#)

[Buildbox | Game Maker | Video Game Software](#)

Buildbox is a new video game maker that is extremely easy to use. Using this video game software, anyone can design amazing games for mobile, console, and PC.

Detailed Description

Aims for Phase 1

The project aims we've listed here provide an insight into the most important parts of our project while illustrating our rationale for making some of the decisions we've made by providing our justifications.

For the ProjectX team, our single most important aim is to bring to market, a game that both sighted and vision impaired users can enjoy, taking care to run our project in the most economical way possible while still providing the best possible user experience. Here at ProjectX, our end user experience should always take priority; therefore, if an idea is going to require additional funds to make it happen, we'll seek those funds to ensure that our customers have access to the best products on the market.

Aim: Here at ProjectX, our aim is to make a Smartphone game that is appealing to a broad age range regardless of their ability to see.

Justification: So many games on App Stores require the player to see what is happening, we want to present an option with the same visual appeal for sighted users, while incorporating features that make it equally appealing to those who are vision impaired. To that end, as part of a future phase, we'll be including a Non-Sense functionality which will be a version of our game that has no advertisements & no graphics. The Non-Sense version of the game will be available at no cost to the end user and will work entirely using sound and haptic feedback. This will allow a vision impaired user to play the game without missing out on the visual element of the game. Don't see the ads, Don't see the game!

Aim: As a team, we'll be assigning tasks and roles within the group, though this will be a straightforward process given that each person has a skillset that means they'll logically take on roles within the project.

Justification: By assigning roles to each team member for the duration of the project, this will assist with allocation of work and accountability for completion of that work.

Aim: As part of our planning process we'll be developing a schedule to ensure that we meet our target dates for all aspects of the project.

Justification: By creating a schedule at the beginning of the planning phase of the project, we'll be able to track our progress and ensure that any areas of concern are flagged early which will allow us to divert resources accordingly.

Aim: One of the most important aims for our project is for each of us to learn and understand how to use Buildbox, so that any one of us can step in and help should someone be unavailable.

Justification: Initial prototyping has shown that BuildBox is a suitable tool for creating a game with the features we require. The ability to produce a game for both IOS and Android from the same development environment means BuildBox is an ideal solution for our project. The fact that anyone can login and work on the project at any given time is also an attractive feature of BuildBox, this means that if someone is unavailable, there won't be any schedule delays.

Aim: For this project, we'll be including more information than necessary on our ProjectX website, this is based on previous feedback.

Justification: By including more information than is necessary on our website, we'll ensure that we're incorporating previous feedback into our ways of working, while providing any potential clients, investors or end users with ample information about our team, our company and our philosophy.

Aims for Phase 2

Aim: The first update to be rolled out as part of phase 2 will include a Non-Sense functionality which will be a version of our game that has no advertisements & no graphics. The Non-Sense version of the game will be available at no cost to the end user and will work entirely using sound and haptic feedback.

Justification: The rollout of Non-Sense version of our game will allow us to fulfill our promise of bringing more inclusive games to market. Our Non-Sense functionality will allow a vision impaired user to play the game without missing out on the visual element of the game. Don't see the ads, Don't see the game.

Aim: As part of our Phase 2 rollout, we'll be designing audio and vibration patterns for each specific enemy.

Justification: With unique audio and vibration feedback, a vision impaired player can learn to recognise and respond to the approaching obstacles just as efficiently as a sighted person. As a fundamental design element, this will make a black screen version playable.

Aim: Also, as part of our Phase 2 suite of updates, we'll be designing additional levels and rewards for completing those levels that will be incorporated into the game over a period of several weeks.

Justification: Levels will be designed to include challenges which will increase in difficulty as the player progresses through each level of the game. Along with the challenges presented within each level, rewards given at the completion of certain sections of each level will provide additional incentive for players to continue playing to the end.

Aim: Along with the additional levels and challenges noted above, as part of that rollout, we'll be adding a reward system of in-game credits so that users can 'buy' additional lives or other items.

Justification: A way to keep a player in the game can be to reward them with in-game items or currency. These can be exchanged in an in-game store for other items that may improve the player's ability to complete a level but may also be purely cosmetic, making the game more visually appealing. For Non-Sense players this could include bonus information about targets for example a height ability could inform them of the height of an enemy, so they know they need to multi-jump to clear it.

Aims for Future Phases

Please note that these elements are still in development and therefore, subject to change.

Aim: To provide additional playing options for our users and enhance the end their overall experience, we'll be including a multiplayer functionality.

Justification: While there is enjoyment in reaching a certain level or beating your personal best time or score, when that is measured against another player, the achievement can produce a far stronger emotional attachment to the game; this will encourage users to continue playing the game. Alternatively, the multiplayer function will open the door for cooperative game play which will allow players to complete tasks or levels that they would struggle to complete on their own.

Aim: Along with the multiplayer functionality, our leaderboard will be rolled out at the same time within the game.

Justification: The ability to play against friends or random players, plays on people's desire to be the best. With our leaderboard people will know how well they are tracking against other players, while providing them their personal best score to date. This will encourage players to continue playing to achieve their goal, whether it be being the world's best, or the best among their friends and family.

Aim: In the future we also intend to monetise the game; this will provide ProjectX with an income stream as well as giving us additional funds to put into future developments. Our monetisation strategy will include rolling out a paid version of the game, the ability to make in-game purchases for items like additional characters or possibly access to exclusive levels within the game. We will also be incorporating advertisements into the game to supplement purchases of the paid game and in-game purchases.

Justification: While the ProjectX team all love to work on this and other projects, ultimately, we need to be paid for the time that we put into developing our games. Advertisements have the potential become a significant income stream given that ProjectX would receive an amount each time the ad is shown within the game, alternatively a player will be able to opt out of seeing ads by paying for a version of the game that is free of ads.

Plans & Progress

Throughout this section, we've done our best to detail the step by step process we followed for creating our game, including our current progress to date and why we've made the decisions we've made.

STEP 1 – Identifying our project Aims

Before commencing more in-depth concept selection discussions, we decided to identify our aims for this project. This involved the whole team discussing ideas for their vision of what our game could be. We then teased out more detailed aims over the course of several conversations. By establishing our project aims early, and in detail, we were able to create a relatively well-defined roadmap for our project, which is detailed throughout this section of this document. The aims for our project are detailed in the aims section of this document.

STEP 2 – Brainstorming Concepts & Ideas

So that we could start to put pen to paper, we conducted a brainstorming session to further define our project scope. No idea is a bad idea during the early planning and brainstorming stages of a project, we were able to capture a lot of random ideas.

As a team, we created a mind map to help make sense of the ideas we'd generated & identify the relationship between these different ideas and any other information we felt was important. This process also gave everyone the freedom to think outside the square, so to speak, which allowed a steady flow of ideas that wasn't hampered or blocked by linear thinking.

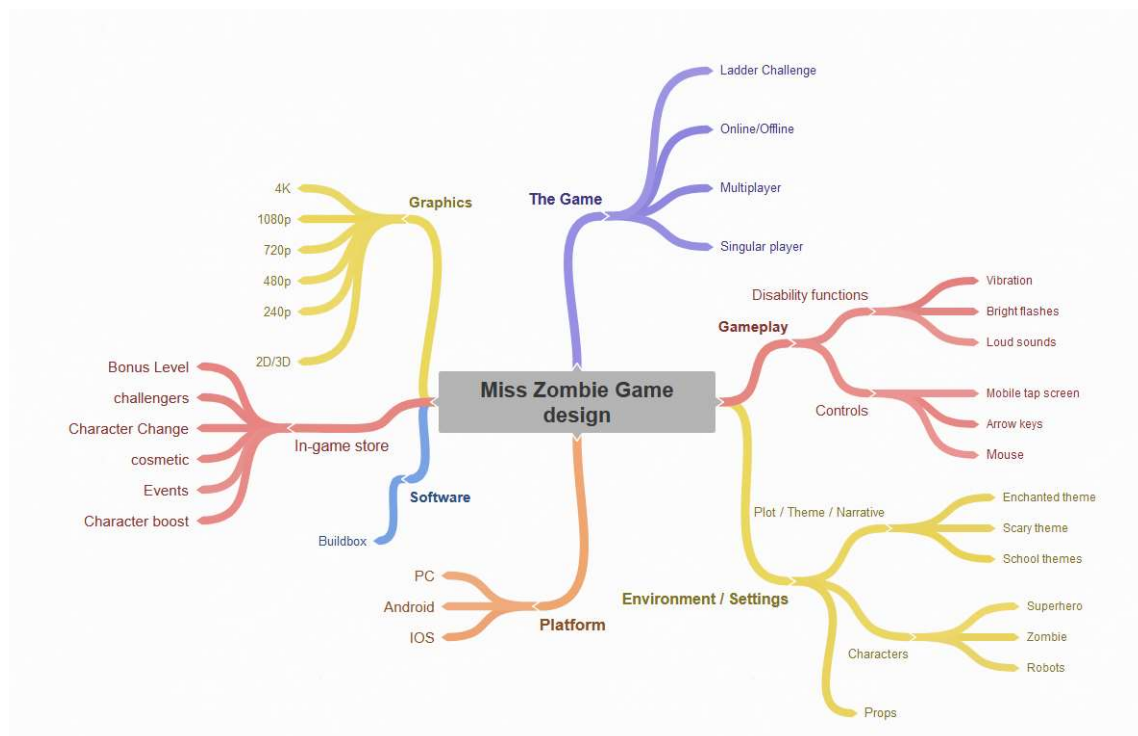


FIGURE 1: MISS ZOMBIE GAME DESIGN MIND MAP

STEP 3 – Concept Design and Selection

Once we'd completed our brainstorming process, we were able to decide on the basic concept for our game and then more fully develop that concept. Developing the concept of a game is, in large part, about deciding on the basic outline of the game and how it might look. Throughout this process, we learned that at this early stage, nothing is set in stone, however, we attempted to be accurate as possible when deciding what sort of game, we wanted and how it should be presented.

Below is a list we put together outlining some basic elements of the game which allowed us to get started on more detailed development.

Game Identity: Miss Zombie is a quirky platformer game in which you control a zombie to find your way through a difficult landscape. There will be lots of big gaps and obstacles that you need to jump over and avoid, with the goal of making it safely through each level. There will be lots of situations where you need to be able to plan your moves to complete the level successfully.

Design Pillars: We wanted our game to be Simple, Fast & Action packed – think of it as Miss Zombie Game mayhem. We also wanted to ensure that any additional updates could be rolled out as simply and quickly as possible.

Genre/Story/Mechanics Summary: We decided to develop our game in a 2-dimensional retro-style, with the landscape changing as the character moves across the screen. The game will feature multiple levels which will become progressively harder as the player progresses with the player utilising a one-tap control button to control Miss Zombie to help keeps things simple.

Features: Initial features of our game will be quite simple with one-character progressing through one level of the game; however, we will be rolling out our Non-Sense version of the game fairly quickly after our initial launch. Our Non-Sense functionality will be a free version of the game that includes no advertisements and works entirely using sound and haptic feedback for our vision impaired users. Don't see the ads, Don't see the game!

Additional features will be rolled out in due course and may include the following –

- Multiplayer function
- Rewards for completion of levels
- Additional choice of characters
- In-game store
- Additional levels
- Additional functionality for our vision impaired players

User Interface: Our users will play our game on their smartphone or other internet enabled mobile device and will incorporate the use of the devices touch screen, along with sound and haptic feedback.

Artistic Elements: There are many websites offering free mobile game assets and resource; we'll be utilising some of these which can be found [here](https://www.buildbox.com/top-20-sites-for-free-game-art/). (<https://www.buildbox.com/top-20-sites-for-free-game-art/>)

STEP 4 – Role Allocation

Developing a project team can be difficult and finding the right people to fill specific roles can prove even more challenging. Initially we did find it somewhat taxing to fulfil certain roles for this project given the very specific skills and backgrounds of each team member. However, strengths and areas for development for each person were identified and compared, and the following role assignments were finalised.

Project Lead – Stephanie Kelloway

As in our previous project, Stephanie took the lead early in the project. Stephanie stepping into this role early, meant that she was able to steer the project successfully with the full support of the whole ProjectX team.

Team Lead/ Developer Support – Shane Rogers

Shane was assigned the role of team lead and developer support, meaning Shane was very much integral to the overall success of this project, providing valuable support to both Stephanie and Peter and the ProjectX team more broadly.

Lead Developer/Programmer – Peter Luong

Peter was assigned the role of Lead Developer due to his interest in creating a game, and the fact that the initial game idea was his concept. Peter's interest in this area meant he'd already started research on potential platforms for building the game which had him well placed for developing the concept further.

Media Specialists – Jerard Chris Rei Sarinas Ogoy & Guangchen (Jensen) Deng

Jerard & Jensen both have an interest in design and media and so they were both assigned to the role of Media Specialist. As a result, they were both able to take the lead on the creation of our promotional video.

We all carried out the role of tester and were each able to have friends and family test the game as well, providing us with valuable feedback for the Testing element of this document.

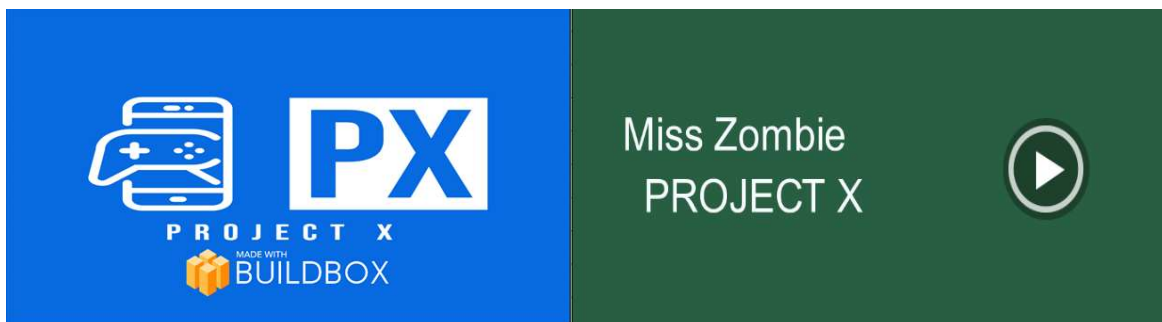
STEP 5 – Project Build Phase for Miss Zombie V1.0 & V1.1

Having laid the foundation for our game by agreeing on a concept early in this project, we were able to move forward with creating the game with confidence, knowing that everyone understood what the game was going to be and what would be involved with building the game.

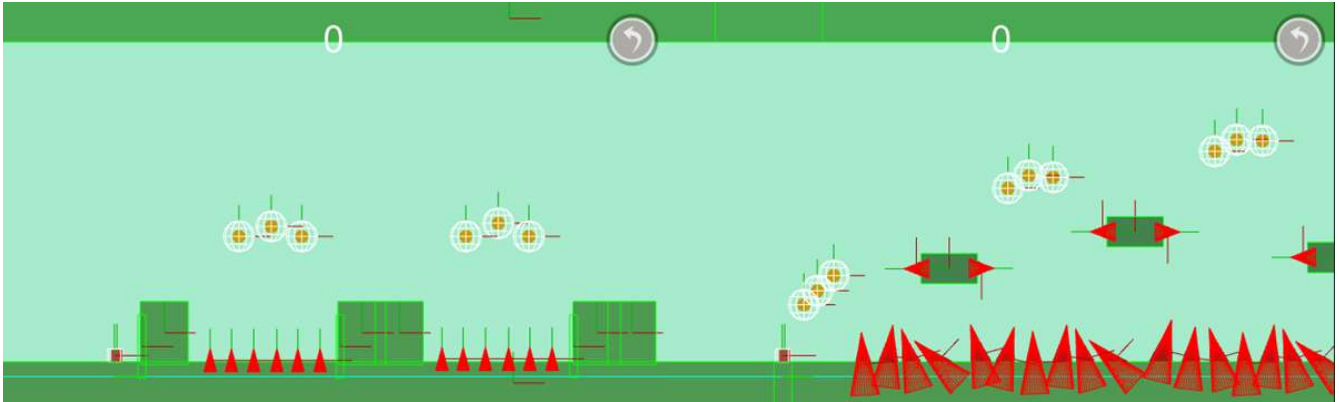
After thorough investigations, we decided to move forward and utilise the Buildbox framework as a platform to create the game. Buildbox is a great framework for us to start with as it is designed with inexperienced programmers in mind and doesn't require extensive coding knowledge. Even though the framework is designed for use by inexperienced programmers, a lot of preparation and learning about the framework was still required to successfully build the prototype of our game.

Learning to master the basics of BuildBox required our Programmer to spend approximately 15 hours working with the program to better understand it so that we could move forward with creating the prototype. For this process, we utilised tutorials and guides provided by Buildbox and other specialised Buildbox YouTube channels to assist in developing the game.

To build our game, our Programmer started off by building a skeleton copy of the game to ensure that it was possible to create a working game. Physics and AI were implemented utilising the tools that were provided in the BuildBox framework. A basic user interface was created, and the appropriate code implemented to allow the use of touch screen functionality on a smartphone or other mobile device.



During this time, our Level Designer was creating levels, challenges and missions specifically designed for the game, some of the results of this work can be seen below; eleven obstacles were created and tested prior to implementation. Once we'd reached this point, we were happy that Miss Zombie V1.0 prototype was complete, from there, we moved onto Miss Zombie V1.1.



Once the team was satisfied with the early V1.0 prototype of the game, our art team implemented concept art, sprites, texture, environment backdrop with the guidance of our Project Lead, Team Lead and Lead Developer. Due to the lack of time, our media team compiled a collection of assets for V1.1 Miss Zombie from the collection of free assets available [here](https://www.buildbox.com/top-20-sites-for-free-game-art/). (<https://www.buildbox.com/top-20-sites-for-free-game-art/>) Our programmer was able to implement the art provided by our Media team to complete V1.1 of Miss Zombie. See below for images of this version of the game.



STEP 7 – Testing & Rollout Phase

Testing phase: Initial testing of the game was completed internally by the ProjectX team; once we were happy with the game, we asked friends and family to carry out further testing and provide us with their feedback via an online survey. It is our intention to incorporate features into the game, based on the feedback we receive through this process.

The survey completed by our testers is available [here](https://www.surveymonkey.com/r/66395HX).

(<https://www.surveymonkey.com/r/66395HX>)

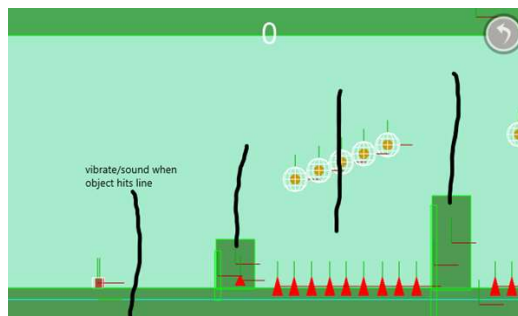
Rollout of Miss Zombie V1.1: At this time, Miss Zombie V1.1 is available only on android SmartPhone & Tablet Devices.

Miss Zombie is available for download [here](https://www.dropbox.com/s/23o7svc8prc8ry6/MissZombieAndroid.apk?dl=o).

(<https://www.dropbox.com/s/23o7svc8prc8ry6/MissZombieAndroid.apk?dl=o>)

STEP 7 – Phase 2 Update Rollout

Non-Sense Functionality: Making entertainment accessible to as many people as possible can be challenging, especially in the realm of smartphone games as these rely heavily on visual elements. The concept of creating a smartphone game for the visually impaired might seem unusual, however here at ProjectX, we will be attempting to use our current game, Miss Zombie V1.1 as the basis for our game for the visually impaired. This version of the game will be called Non-Sense as it will use the sounds of the game, and haptic feedback, to help visually impaired players navigate their way through the game and maneuver around obstacles. Part of this functionality will be incorporating signals into the soundtrack that will alert a player, and let them know when to jump or flip, for example. While we're yet to test this functionality, we're confident that we'll be able to include it in our Phase 2 collection of updates.



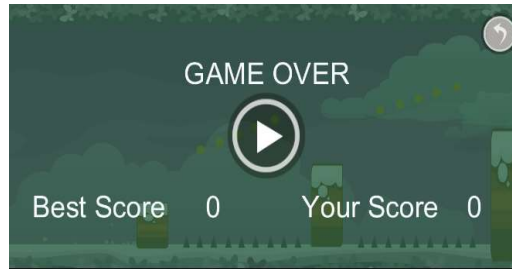
Project Challenges

We utilised the Free version of BuildBox framework to build our game and overall this was appropriate for our current requirements. However, at times, it became frustrating for our developer and programmer as it limits what we can do with the game. Due to this limited functionality, we are investigating purchasing the full version of BuildBox so that we can better develop Miss Zombie and other games going forward. The full version of BuildBox allows unlimited worlds & scenes within a game, the ability to export to both mobile and desktop platforms and makes the games splashscreen fully customizable; this version of BuildBox also allows the opportunity for monetisation.

Deciding if a feature is valid or appropriate can be a problematic process when working in a team as team members will have differing opinions, and ProjectX was no exception in this regard. Right throughout the process of creating our prototype, we had robust discussions around the pros and cons of including or not including various elements of our game. As a result of these discussions, we

made the decision to include the Non-Sense functionality in Phase 2, rather than rush it and release it as part of Phase 1. This has allowed us additional time to complete testing which work out any bugs, which will hopefully ensure its success ultimately.

Overall, the team worked well together. Having a good management team to oversee every aspect of the development process made a huge difference for us and allowed us to complete the first ever version of the game Miss Zombie. While we are still quite a way from finishing Miss Zombie, this process has shown us what we can do, and with time, there is no doubt that the ProjectX team can finish Miss Zombie successfully.



Roles



Stephanie Kelloway – Project Lead

Stephanie Kelloway has previous experience in managing projects, gained through her current role as Systems and Process Advisor. Stephanie is a very detail driven person and is highly organised, these traits make her the ideal Project Lead for the ProjectX Miss Zombie Project.

As the Project Lead Stephanie's role includes managing team members, running meetings and ensuring actions are communicated to team members where necessary. Stephanie will also provide direction to team members where required to ensure that the project stays on schedule. Stephanie will be working closely with every member of the project team to ensure

that everyone is completing their assigned tasks and provide help where required.



Shane Rogers – Team Lead/Developer Support

Peter Luong – Lead Developer

Peter Luong and Shane Rogers have both previously been part of an app development team which has them well placed to take on their roles as Team Lead/Developer Support and Lead Developer. Their skills in programming language skills such as basic JavaScript and writing Objective-C in XCode IDE will be integral to the success of this project.

As senior members of the Development & Programming Team, both Peter and Shane have a good understanding of the BuildBox framework which will allow them to develop codebase tools for the game. Shane and Peter will take on the responsibility for making changes to the game when required along with performing debugging and beta testing which will ensure the game is polished and presented to a professional standard.





Guangchen (Jensen) Deng – Media Specialist

Jerard Ogoy – Media Specialist

Guangchen (Jensen) Deng has always had an interest in game developing with a focus on the graphic and sound aspects of game development. Jensen's skills include the ability to use Photoshop and edit video and sound media. Jensen is also skilled in 3D drawing.

Jerard Ogoy is currently working towards a computer science degree. On this project, Jerard will be provide technical advice regarding level design and animation. For this project Jerard Ogoy and Guangchen (Jensen) Deng will be part of the Media team where they will focus on the creation of our promotional video, and level & sound design for our game, in conjunction with our Developing & Programming team.



Scope & Limits

For this first phase of the Project X Zombie Girl venture we intend to create a game that is challenging and appeals to a broad demographic, with users involved in testing this game ranging in age from 10 years to 35 years. The game will be developed in a 2-dimensional retro style with the game following the main character, Zombie Girl through multiple levels, facing various challenges and roadblocks along the way.

Phase 1 of Zombie Girl will also include functionality which will enable both sighted and visually impaired or those who are blind, to play the game.

Feedback from our end users will inform future phases of development for this game but so far the feedback provided has confirmed our plan to include the following functionalities;

Multi-player function which will allow end users to play the game against their friends and family or other anonymous users selected automatically by the game.

As users progress through the levels of the game, new characters will be introduced as further incentive to continue playing. Another future development will be the ability for our end users to change their avatar within the game, this could prove fun if our users are playing against each other.

Also included within future updates will be the ability to progress through many different levels, beyond what is currently available in our prototype application.

Also included in future updates will be an in-game store that will allow users to spend coins collected while playing the game. Within the integrated store, users will be able to buy additional lives, access to levels & avatars they haven't yet unlocked.

As part of a future phase, we also intend to incorporate into the game, In-app purchases which is one of the key components of our monetisation strategy. Further to this, ads will also be a prominent feature of our monetisation strategy in the future, with ads appearing in between levels of the game; there will be a paid version of the game launched in the future, which will eliminate ads entirely.

Tools & Technologies

Buildbox v3.1.3: The team utilised the free version of BuildBox for the development of Miss Zombie V1.0 and V1.1 which gave allowed us to use the basic assets available within BuildBox. We will likely purchase the full version of BuildBox which will provide us with additional functionality, including access to the full collection of assets within the framework, among other things. To supplement their knowledge of BuildBox, our Development & Programming Team utilised BuildBox video Tutorials and other specialised YouTube channels.

Android studio: This application will allow us to export projects and publish the game on android platform. Peter has previous experience with working as part of a small app development team which has utilised the Android Studio application as part of the testing and debugging process.

XCode: This application will allow us to export our game and publish on the IOS platform. Shane has moderate experience with writing Objective-C in the XCode IDE.

IOS Developer Account: To generate a standalone app for the iOS app store, we first need to purchase an IOS developer account which will cost approximately \$99 per year. The account will allow access to beta software, advanced app capabilities, extensive beta testing tools and app analytics.

MacinCloud: This application will allow users to access Mac applications via the cloud. This will enable us to develop Miss Zombie for Apple devices as MacinCloud provides access to developer applications and the ability to perform task that require a Mac Computer.

Google Docs: As in our last project, Google Docs has allowed us to effectively collaborate on the same document right throughout the project.

Microsoft Office Suite of Products: Right throughout this project, all members of the ProjectX Team have used several Microsoft Office products including, Word for compiling our project report, Excel for creating and managing our project schedule & PowerPoint for the creation of our branding guidelines document which is included in Appendix one of this report.

VideoScribe: Once we decided on the format of our promotional video, we identified VideoScribe as the whiteboard video maker which could help us make our vision come to life. VideoScribe is a relatively quick and inexpensive way to create a great animated video. Shane, Jenson and Jerard will use this to help make our promotional video as they each have previous experience in this regard.

Testing

There are two separate markets and user groups for this game, with the first being users interested in the game for its graphic design and gameplay. The second group are our visually impaired users who rely on sound and vibration patterns to be able to play the game effectively.

Initial testing has taken place regarding the graphics and visual elements, testers were chosen from a closed group of friends and family & each was given a copy of the prototype and a link to the online survey. (<https://www.surveymonkey.com/r/66395HX>).

It is clear from the feedback received that the game is best suited to the teenage market, although many of the testers liked the game there was an overwhelming majority (62%) who thought the game was best aimed at a younger audience. The results received are presented below.

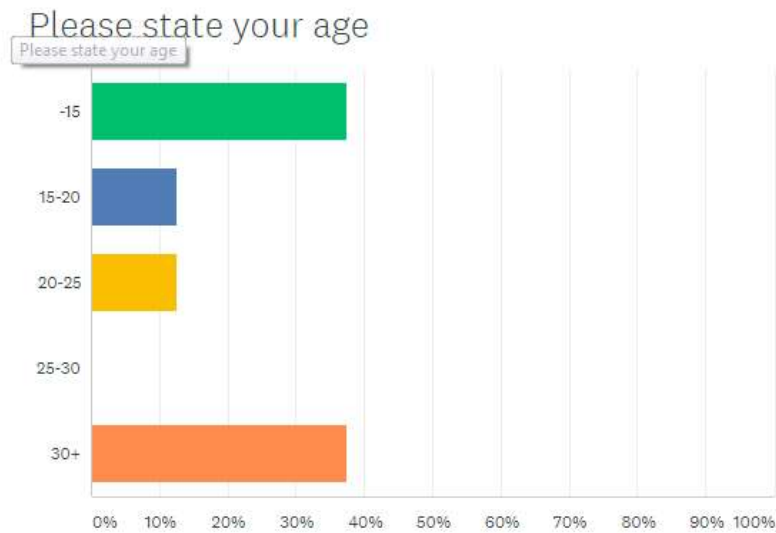


FIGURE 2: MISS ZOMBIE USER AGES

Feedback has shown that the game is well received and is playable, though there is obviously work to be done on the graphics and the addition of new levels and other functionality. A few suggestions for improvements have been discussed and may be included in the initial release. No plans have been finalised and with consideration for the scope they may be held back and released in future phases. The next phase of testing for this audience will be after the full set of proposed levels have been completed. At that time, we will be looking for around 50 testers from the under 15 age group to give feedback on the difficulty of the levels and the user experience while progressing through the levels.

Testing for the visually impaired requires that we identify potential users who fit the target demographic in the first instance. We then need to create unique sound and vibration patterns which will provide enough feedback to inform the user of their progress through the game. We do not have a prototype ready for testing, but we have established a development process for including these updates into the game. This is a fundamental aspect of our game and is not being left until the end, but without appropriate feedback patterns the game would be unplayable therefore the prototyping must be completed prior to initial visually impaired user testing.

Timeframe

The below provides a visual representation of the current phases of our project. This schedule provides a detailed overview of the progress of our project to date, along with listing the individuals tasked with completing particular items. Also noted is the risk associated with completion of each current item, and thus far, we're progressing quite well.

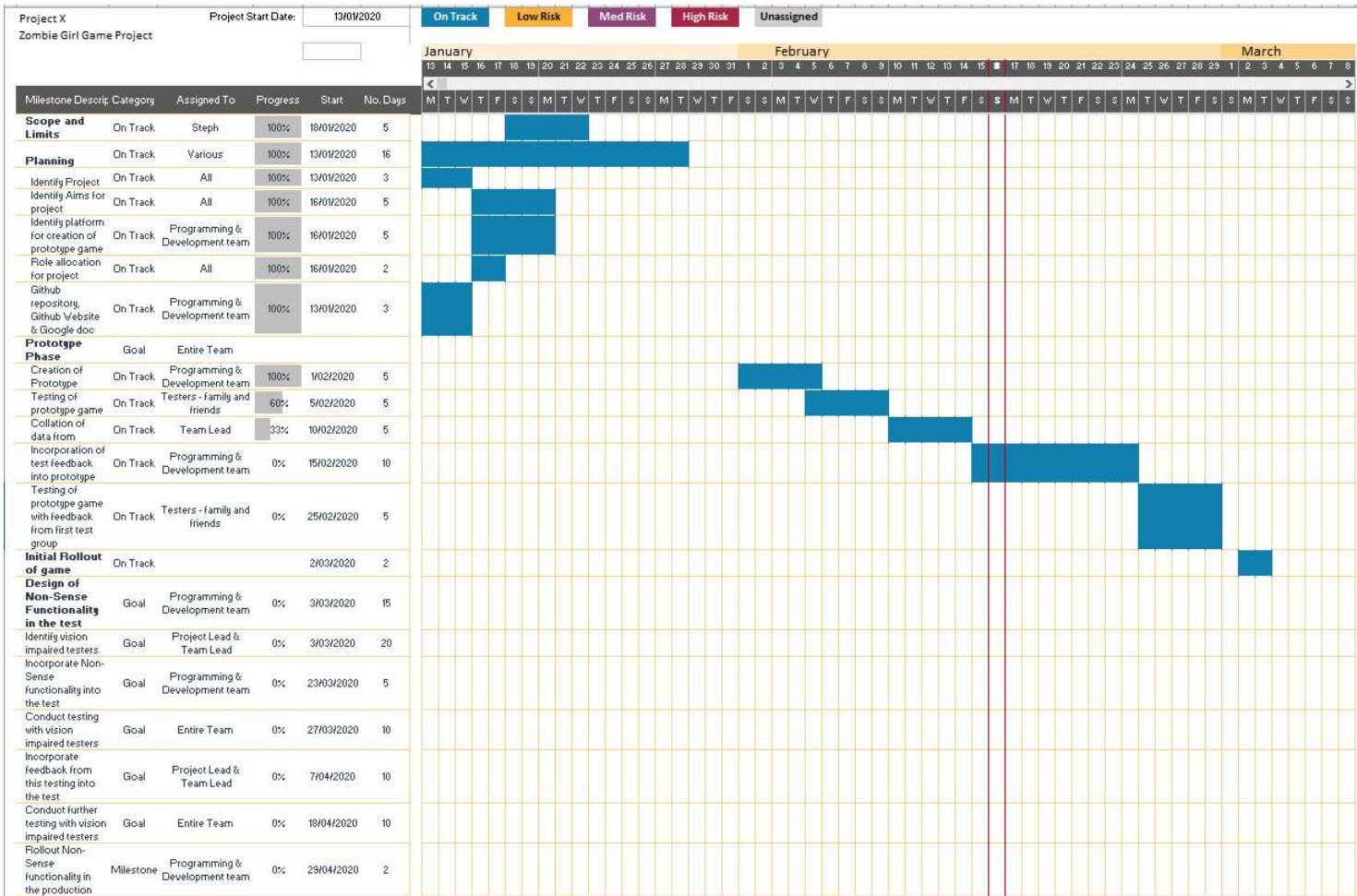


FIGURE 3: INITIAL PROJECT PHASES

Risks

There are risks associated with all projects, and in this regard, the ProjectX Miss Zombie project is no exception. Below we've identified three key risks that are specific to our project, along with the mitigation strategies we intend to implement.

Risk: As we are a startup, there is a risk we may have trouble securing funding from investors to ensure the continuation of our current project and any future projects.

Mitigation: As a group, the ProjectX team will ensure that we always present ourselves and the business in the most professional manner possible. Further to this, we currently working to create promotional material including a video and sales pitch, to assist us when we approach investors to secure funding.

Risk: With so many games on the market, there is a risk we may have trouble retaining users once the game launches.

Mitigation: To mitigate this risk, we will ensure we provide engaging updates and functionality on an ongoing basis in an effort to retain our users.

Risk: We will need to bring onboard additional team members for this project, but the risk here is finding the appropriate personnel with the skills we require. This will be particularly challenging given the state of the job market at present with many applicants for fewer roles.

Mitigation: We will ensure that advertisements for our required roles are targeted and specific to ensure we attract the right sort of applicants. We also intend to leverage existing contacts within the industry to allow us to identify candidates that we may not otherwise be aware of. Further to this, we intend to engage a recruitment company like Greythorn who specialise in recruitment of IT professionals.

Group Processes & Communications

The first two weeks were swallowed up in software evaluation. Buildbox turned out to meet almost all the needs of the project but we missed the point initially by not really considering the need for our app to stand out with a major point of difference. We probably spent too long building our prototype, but we recovered sufficiently and were able to form a solid foundation around the new aim.

It would be fair to say that the communication between team members went generally well when we were all available. The first few weeks, Jensen was in China and essentially uncontactable. Although he could be contacted through email, it only served to keep him informed about decisions rather than providing a way for him to participate. All our team meetings were through voice chat on Discord which worked most of the time except when Jerard lost power in the Melbourne blackouts. All other communication was either via Discord's text messages or through collaborated input on a shared Google Doc.

We would have been in a better position if we had established our aim correctly from the start. In hindsight we realise that if we had set expectations early and established processes outside of Discord then we could have connected with team members were sometimes unresponsive. Regular planned contact from the start would also have helped.

Skills & Jobs

Here at ProjectX, we've been made aware of a group of venture capitalists looking to potentially invest in us which will allow us to continue our work for an additional 6 months. To support us for this additional time, and to assist with additional work scopes, we're looking to recruit for the 4 roles noted below, a Tech Lead, a Lead Programmer, a Graphic Designer and a QA Engineer.

<p>Tech Lead</p> <p>Here at ProjectX we thrive on positivity and the ability to challenge each other, to that end, we're looking for a Tech Lead that will fit in with the existing team.</p> <p>Day to day responsibilities</p> <ul style="list-style-type: none">• You'll Assist in program design, coding, code review, benchmark testing, debugging, and documentation, mentor and guide application developers and junior team members.• You'll coordinate, execute, assess, and troubleshoot software programs and applications.• You'll coordinate configuring, coding, developing, and documenting software specifications throughout the project life cycle.• You'll Oversee system startups in a timely and accurate fashion and provide support to other departments where required. <p>We're looking for an individual with the following skills and experience.</p> <p>Specific technical expertise</p> <ul style="list-style-type: none">• BS/BA degree or equivalent experience• Expertise in mobile framework and application design and architecture disciplines <p>Non-technical attributes</p> <ul style="list-style-type: none">• The ability to work well within a team of professional individuals.• Previous experience in a leadership role and the ability to manage a team• The ability to think outside the box and problem solve.	<p>Lead Programmer</p> <p>Here at ProjectX we thrive on positivity and the ability to challenge each other, to that end, we're looking for a Lead Programmer to assist our Programming and Development team with current and future projects.</p> <p>Day to day responsibilities</p> <ul style="list-style-type: none">• You'll make mobile games: we're a small team, so your focus is implementation.• You'll collaborate with a growing team to add new features and game mechanics to existing titles.• You'll bring new game concepts from prototype to polished final product.• You'll leverage and add to our shared library underlying all our games.• You'll fix bugs and do refactors to maintain a clean codebase that stands the test of time.• You'll contribute to other parts of the game development/maintenance process like build automation, monitoring, scrum-mastering, etc. <p>Specific technical expertise</p> <ul style="list-style-type: none">• BS/BA degree or equivalent experience• Expertise in mobile framework and application design and architecture disciplines• Development Tools (XCode, Android Studio)• Computer Science and Object-oriented Programming• 3+ years of Mobile application design and development in iOS and Android using Swift, Objective-C, Java, Kotlin. <p>Non-technical attributes</p> <ul style="list-style-type: none">• The ability to work within and lead a team of professional programmers• Previous experience in a leadership role and the ability to manage a team

Graphic Designer

Here at ProjectX we thrive on positivity and creativity, to that end, we're looking for a Graphic Designer to join our team to assist with current and future projects.

Day to day responsibilities

- Create high quality digital art and assets for web-based games from concept to final completion
- Produce sketches, storyboards and mockups to communicate ideas and explore design options
- Work independently and as a team with game designers, animators and software developers to ensure digital art assets are mobile and network performance friendly
- Create compelling conceptual art and sketches to convey vision of a concept prior to further development
- Responsible for producing supporting graphics and art for marketing purposes
- Help establish and sustain a pipeline for maintaining the mobile digital art assets
- Responsible for following and maintaining established templates, standards and processes

Specific technical expertise

- Previous experience developing digital art for web-based games
- Proficient in Adobe CC Suite (Specifically Photoshop & Illustrator)
- Experience with After Effects CC, AE particle effects plug-ins and 3D software would be highly advantageous
- Knowledge of art and files preparation, layout procedures and processes, type design and manipulation

QA engineer

Here at ProjectX Quality Assurance is important to us, and to support us in that regard, we're looking for an experienced QA Engineer to join our team to assist with current and future projects.

Day to day responsibilities

- Develop comprehensive test plans and detailed test cases from documented game requirements
- Create detailed tracking reports to track errors and resolutions
- Oversee a group of QA Testers
- Communicate frequently with production and development to ensure smooth workflow

Specific technical expertise

- 1+ years of game QA experience
- 2+ years of Mobile experience
- Technical understanding of development process and key components to facilitate defect detection and reporting
- Knowledge of and experience with full-cycle software development and testing methodology
- Experience in Client/Server Software Quality Assurance


Feedback

This has been completed by each team member in Spark Plus.

Group Reflection

Peter Luong

This assignment is probably one of the toughest group projects I have done to date. As time was a factor, organisation was key if we were to complete the relevant task in time considering we had other commitments that we needed to complete as well.



I found working with everyone quite pleasant as they all seem quite motivated in completing the assessment. With limited time everyone contributed to the group discussion and worked together to achieve their allocated tasks.

One thing that could be improved for next time is having a better understanding of everyone's skill set when choosing a project. After seeing everyone's skill set, consideration could be made in choosing a project which reflects the majority's skill sets.

I have learnt that not all people in the group will have the same skill set as you and as a result it was tough at times. However, all in all we did well in creating a working game and in a short period of time.

Stephanie Kelloway

Upon commencing this course, I was quite concerned about the large group work component. Despite my initial reservations, I can see how the large group work element has assisted in teaching all of us to work with a broad range of people from different backgrounds, and who have different skills to help deliver a project.

Peter and Shane's technical skills have proven invaluable to all our team assignments, I've learned a lot from both. I also think Peter, Shane and I have been ready and willing to step up and help if someone else needed assistance.

In terms of challenges, I think the time frame associated with this assignment proved particularly challenging, especially given people's commitments outside of this course.

Throughout this course I've learned not only that working in a team can be incredibly rewarding, but that I can step up and take the lead, and that people respond well to me. Peter & Shane have been fabulous to work with and I'm really proud of what we've created together as the Project X team.

Shane Rogers

My reflection in assignment 2 indicated that I had learned that group work can produce a positive result. I unfortunately didn't find that to be the case this time around. I have no specific complaints about any of our team members, I would just like to express my concern regarding the weight of this assignment towards our overall course result.

As the due date drew closer, I found myself doing quite a lot of reading about what makes group work function well. I learned that the approach we took is considered one of the least effective. We divided up the tasks and each went off to do our bit. While this is efficient and can get a good result, it is fraught with problems. The main purpose of group projects is to get us working together not in isolation. I work best in isolation so I quite liked this approach but if we had discussed the overall team direction more at the beginning and then reviewed it along the way we would have all been on the same page and would have eliminated the differences of understanding which are evident when you read our finished report from start to end. We didn't produce a report that was better than the sum of all the parts. We would have benefitted from bouncing ideas off each other before jumping into the writing phase.

In conclusion, I am not completely satisfied with our end result, but the lessons learned will be of great value in our future assignments and in the workplace.

Jerard Ogoy

I have discovered that working together can be an advantage. Good teamwork is the key to success in design activities when time and resources are limited. Everyone had their own point of view, many different ideas could be produced, and group contribution is the most important thing while doing a group project.

Working together can bring the simplest ideas into reality if we put enough thought and creativity and effort into working on them. With the programming design we came up with a game that is simple in terms of skills that we have right now. I have learned that working together can bring out the weaknesses and strength and limitation that I have. It is challenging to work with people that have the experience in working with the skills that they have which I don't.

Jensen Deng

Assessment 4 this time was a huge challenge for the entire group. There were many tasks to complete and problems to solve, which required a lot of communication between group members. We conducted our weekly discussions normally on Sunday evenings each week with supplementary discussions in between when required. In those weekly meetings, we allocated tasks and provided feedback on each other's contributions where required.

Over the course of the project, we were constantly revising our plan, this allowed us to be dynamic and respond to challenges when they arose.

In my opinion, I put additional strain on the group as I feel that I don't work efficiently enough, and my expertise is not appropriate. I am very grateful to our entire group for their help with this Assessment! I feel very lucky, and I regret not being able to cooperate with them as I should have. In this assignment, my ability has been greatly improved. Thanks to each of our team members!

Summary

After completing assignment 2, we quickly moved on to organising assignment 3 and 4, as we knew time was a factor. The group continued to work well together and were able to allocate tasks and roles that were needed to complete this project.

Stephanie was quick to step into her role as the project leader. She ensured that the group was working together and ensured that the project was on schedule and that the team knew what they were doing. Her time management and organisation were huge factors for the group while completing this assignment.

Peter and Shane provided the technical skills as programmers and to be able to work together and develop a working game in a short time is short of amazing. Without their expertise, the game would probably never come to life.

Guangchen (Jensen) Deng and Jerard Ogoy provided the artistic/level designer/sound engineer skills. Even though they lacked the technical skill, their imagination and willingness to learn took a lot of pressure off our programmers. They were creating levels, challengers and mission and worked well with the programmers to implement what they had created.

Having a regular meeting with the whole group is something that we could have done better. One at the beginning and small meeting to touch base with to check with individual progress and goals throughout the whole process would have been something that we could have considered.

Working together can have its advantage; however, sometimes working on a project which requires certain skill made some aspect of the task difficult. It brought out strengths, weaknesses and limitations of individuals in the group, which we had to quickly adapt to considering the range of experience of each member in the group. The strengths and weaknesses of each person were consolidated, and the roles were created to fit into their expertise.

Unfortunately, we did not utilise Github to its best advantage, this is definitely an area for improvement next time.

Overall, the team worked well together, considering the different skill set we had as a group. Having a good management team that oversees every aspect of the development process made a huge difference for us to complete our first ever version of the game. We are far from complete, however with time, there is no doubt the team can finish the game we want.

