BCDE213 Assessment 2 Final Report

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## Introduction

In this report I will detail the process I went through in the development of my project to create a simple Windows App game. The aim of this project was to create a game for my client that fits his needs by utilising research I have done into different development tools like Visual Studio, programming languages like Visual basic, design methodology like design thinking and media manipulation like Pivot Animation Studio. I have documented the process of developing this project by creating a portfolio of different types of content which I will show and explain in this report such as Navigation Maps, Timeline plans and Risk Assessments which were used to create forms of functional and usability testing which gave me client feedback to help me progress from a low fidelity sketch of the game to a medium fidelity group of detailed screen layout plans and then finally a high fidelity functioning Windows app.

## Design Thinking

Empathise

To gain understanding of a problem you are trying to solve by observing and engaging with people to understand their experiences with the issue so you can gain different insights to solve the problem.

I sat down with my client to ask him if there were any problem, he had that he thinks I could help him resolve using my project or if there was anything he would like me to make for him. His response was A game.

Some sort of video game either window app or android app. Based on some old games we use to play when we were little as he has been bored of new games lately and would like some nostalgia.

Define

Analyse the observations gained in the empathise stage in order to define a core problem that needs to be solved. This will give you a human-centred problem statement. The problem statement should be defined in a broad sense avoiding being defined by the developers own wish or needs. This helps to form ideas during the ideate stage by asking “How might we…”

We thought about what we would want in the game we remembered that we use to make gif of big Star Wars fights using a animation software called Pivot Studio which gives you stick figures you can move different parts of their body per frame to create animation and thought that it would be cool to use in a game. We though back to the old flash games we use to play online and remembered that they were mostly simple stick figures doing action hero type things so that would be perfect.

Ideate

With the understanding you have gained about your users needs it is now time to start generating ideas to come up with solutions to the problem statement using ideation techniques like brainstorms. This stage is all about getting as many ideas as possible that can then be investigated and tested to find the best way to move forward.

We brainstormed the idea and came to the conclusion that is should be a pass the bomb type game where the bomb would exploded on a random turn between 1 and 6 so you would have to choose the right time to throw it way as you could only throw twice. I decided I would create it in visual basic because it is an easy langue to use and the backend to the game is very simple it only needs two random number generators and buttons to play the gifs.

Prototype

In this stage scaled down versions of the product are produced so that the solution can be investigated, shared, and tested within the team. The goal is to experiment to find the best possible version of the solution by improving and reimagining the designs until they are either accepted or rejected.

Diagram

Description automatically generated

[Assessment 2\Prototyping\low](https://tewaka-my.sharepoint.com/personal/djw0393_arastudent_ac_nz/Documents/Interactive%20Media%20Development/Assessment%202/Prototyping/Low)

Test

During this final stage the created solution is tested to make sure it meets the original problem statement, and the user’s needs. The results generated are used to refine the solution and the problems that are caused when users use the solution under working conditions are used to gain more insights into the way users think for better understanding in the future. I will create unit tests to make sure all functions work and find bugs and create a series of tasks for each iteration of the prototype that will be given to a group of tests subjects to see of they can complete them they will then give me feedback and a rating out of five which I will use to develop the next iteration.

Graphical user interface, text, application, email

Description automatically generated

[Assessment 2\Testing\Functional](https://tewaka-my.sharepoint.com/personal/djw0393_arastudent_ac_nz/Documents/Interactive%20Media%20Development/Assessment%202/Testing/Functional)

## Goal

Build a game in visual basic using gifs to create animation for stick men character using Pivot Studio. Based on gifs I use to make as a kid using Pivot Studio an amination software, of stick figures fighting in crazy action scenes I wanted to use some of those gifs to create a simple game. I was inspired by old flash games I use to play online which were usually stick figures doing crazy things you would play for a few minutes before going on to the next one so I came up with the idea of an pass the bomb game where a bad guy shoots a bomb the good guy catches it so they have to pass it between them until it explodes.

This idea was inspired by old flash games I use to play back in the day. They were very basic games that used stick figures for quick violent gameplay that you would play for a few minutes then move onto the next one as most of these website would have thousands of games on the them.

Games like:

Graphical user interface

Description automatically generated

Stick RPG (2008)

Graphical user interface, application

Description automatically generated

Penalty Chamber (2006)

## Target User Personas

My target audience are games who are nostalgic for the old flash games of the mid 2000’s or mobile games of today who want something quick they can jump into play for a little bit them move on. These persons were created by interviewing my client and his nephew the client does not just want the game for himself but to be able to give it to his nephew to occupy him well the client does other things. This created a good basis for the personas and the relationship between he two helped me to flesh the out as I think it would be the kind of relationship that would be common between older and younger games these days.

Nostalgic Gamer

Based on:

My client Ryan (age 25) who helped come up with the idea and requested I create it for him

Goals:

Find a game similar to the ones they use to play online when they were young because they remember those times fondly.

Have a game that can get young people into gaming

Frustrations:

Games these days take up too much time and want you to spend money constantly

It’s hard to find time to get into big modern games when young family members are around wanting to play the game as well.

Motivations:

Find a game that is simple and fun that they can play for a short time and feel satisfied

Get a game that can be given to a young family member on a phone to distract them well he plays other games or does soothing else.

Young Gamer / Mobile Gamer

Based on:

Client’s nephew Devon (age 8) who wants to get into gaming

Goals:

Find a game that is fun that can be played on pc or mobile with short rounds that can be picked up or put down at any time

Frustrations:

Has a short attention span so does not want long games with lots of story and characters

Motivations:

Feel involved when older family members are playing games

Show school friends new game specially made for him

## Objectives

1. Ask people if they want to be my client
2. Work through possible project ideas
3. Narrow down to one idea
4. Decide what I could make the idea in
5. created the problem statement
6. Prototype layout
7. Research text media
8. Test text media
9. Text media write up
10. Research audio media
11. Test audio media
12. Audio media write up
13. Research image media
14. Test image media
15. Image media write up
16. Research video media
17. Test video media
18. Video media write up
19. Research Prototyping
20. Test Prototyping
21. Prototyping write up
22. Research testing
23. Create testing doc
24. Testing write up
25. Prototype system functionality
26. Prototype system layout
27. Test prototypes on uses
28. Build basic layout
29. Add buttons
30. Create gifs
31. Add gifs to form and get them to run on click
32. Create random number generator and win/loss states
33. Create counters for throw, guesses wins and loses
34. Add music
35. Add sound effects
36. Create video tutorial
37. Add video
38. Create unit tests
39. Make sure everything is working correctly
40. Finish off app
41. Test prototypes on uses
42. App functionality testing
43. App useability testing
44. Make changes to app
45. Create final release app exe file
46. Client training and review

## Platform

A Windows app created in visual studio written in programming language Visual Basic at the moment but in future it could be ported into a version that would be able to run on mobile phones written in either C# or Java.

Text

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Diagram

Description automatically generated

## Media assets

Animation

5 gifs created using Pivot studio that run after certain button clicks depending on the numbers being compared in the background. Left at medium quality as per my findings in assessment 1 as picture quality is not much of an issue when dealing with black and white stick figures so keeping file size down is the most important thing.

Graphical user interface, text, application

Description automatically generated

[Assessment 2\Media Assets\Animation](https://tewaka-my.sharepoint.com/personal/djw0393_arastudent_ac_nz/Documents/Interactive%20Media%20Development/Assessment%202/Media%20Assets/Animation)

Images

6 images that are still frames from the animations created using Pivot studio that are put on the game screen when no gif is playing. Was planning on using high quality JPG images as per my finding in assessment 1 that they were best balance between quality and size but the game create bug when trying to switch from a JPG to a GIF so the images are in GIF format so that the game functions correctly.

Graphical user interface, text, application

Description automatically generated

[Assessment 2\Media Assets\Image](https://tewaka-my.sharepoint.com/personal/djw0393_arastudent_ac_nz/Documents/Interactive%20Media%20Development/Assessment%202/Media%20Assets/Image)

Audio

1 song and 2 sound effects all in wav format as Visual Studio has compatibility issues with mp3 so a medium quality wav was the best choice the files are a bit bigger than mp3 but they are good quality and work correctly with the game. The song is Hot Potato by the Wiggles which plays when on the home page but may be turned off because it gets very annoying, it is replaced with the sound of an air raid siren when the game is playing and an explosion when it ends.

Graphical user interface, application

Description automatically generated

[Assessment 2\Media Assets\Audio](https://tewaka-my.sharepoint.com/personal/djw0393_arastudent_ac_nz/Documents/Interactive%20Media%20Development/Assessment%202/Media%20Assets/Audio)

Video

An mp4 of me playing the game to serve as the tutorial for new players created using PowerPoint to record my screen. Kept at medium default quality so that the file size is kept small but you can still read the text boxes as they pop up with instructions.

Graphical user interface, text, application, email

Description automatically generated

[Assessment 2\Media Assets\Video](https://tewaka-my.sharepoint.com/personal/djw0393_arastudent_ac_nz/Documents/Interactive%20Media%20Development/Assessment%202/Media%20Assets/Video)

## Ethical / Legal Issues and CC Licence

I think CC BY-SA would be the best licence for the game because I think it is in the spirt of the old online flash games to be able to share the game with other people and give them the chance to take it and mod it if they want to. To come up with different version or even sequels that can then be shared online maybe restart the genre of websites full of simple games that you can try out for free.

CC BY-SA: This license allows refusers to distribute, remix, adapt, and build upon the material in any medium or format, so long as attribution is given to the creator. The license allows for commercial use. If you remix, adapt, or build upon the material, you must license the modified material under identical terms.

CC BY-SA includes the following elements:

Credit must be given to the creator

Adaptations must be shared under the same terms

## Time Estimates

Application, table

Description automatically generated

[Assessment 2\Timeline](https://tewaka-my.sharepoint.com/personal/djw0393_arastudent_ac_nz/Documents/Interactive%20Media%20Development/Assessment%202/Timeline)

## Navigation Map

Initial

Diagram

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Final

Diagram

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[Assessment 2\Navigation Map](https://tewaka-my.sharepoint.com/personal/djw0393_arastudent_ac_nz/Documents/Interactive%20Media%20Development/Assessment%202/Navigation%20Map)

## Prototyping

Low

Diagram

Description automatically generated

[Assessment 2\Prototyping\low](https://tewaka-my.sharepoint.com/personal/djw0393_arastudent_ac_nz/Documents/Interactive%20Media%20Development/Assessment%202/Prototyping/Low)

Mid

A picture containing diagram

Description automatically generated



[Assessment 2\Prototyping\mid](https://tewaka-my.sharepoint.com/personal/djw0393_arastudent_ac_nz/Documents/Interactive%20Media%20Development/Assessment%202/Prototyping/Mid)

Final

V1

Basic game working without sound effects or tutorial video

Diagram, engineering drawing

Description automatically generated

[Assessment 2\Prototyping\High](https://tewaka-my.sharepoint.com/personal/djw0393_arastudent_ac_nz/Documents/Interactive%20Media%20Development/Assessment%202/Prototyping/High)

V2

Tutorial video and sounds effects added

Diagram, engineering drawing

Description automatically generated

V3

Tester advised nav was confusing with all the different buttons so version 3 renames the “Play Again” button to “New Game” and also locks and unlocks each button as you click so you can only click the buttons in the right order.

Diagram, engineering drawing

Description automatically generated

[Assessment 2\Final App exe](https://tewaka-my.sharepoint.com/personal/djw0393_arastudent_ac_nz/Documents/Interactive%20Media%20Development/Assessment%202/Final%20App%20exe)

## Risk Assessment

Table

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[Assessment 2\Risk Assessment](https://tewaka-my.sharepoint.com/personal/djw0393_arastudent_ac_nz/Documents/Interactive%20Media%20Development/Assessment%202/Risk%20Assessment)

## Testing

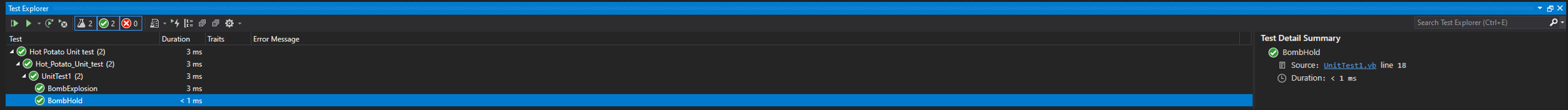
Functional

Graphical user interface, text, application, email

Description automatically generated

Text

Description automatically generated



[Assessment 2\Testing\Functional](https://tewaka-my.sharepoint.com/personal/djw0393_arastudent_ac_nz/Documents/Interactive%20Media%20Development/Assessment%202/Testing/Functional)

Usability

Plan

Graphical user interface, application, table

Description automatically generated

Graphical user interface, text, application, email

Description automatically generated

Graphical user interface, application, table

Description automatically generated

Results

Graphical user interface, application

Description automatically generated with medium confidence

Graphical user interface, text, application

Description automatically generated

Graphical user interface, text, application, email

Description automatically generated

[Assessment 2\Testing\Usability](https://tewaka-my.sharepoint.com/personal/djw0393_arastudent_ac_nz/Documents/Interactive%20Media%20Development/Assessment%202/Testing/Usability)

## Evaluation

Pros

The clients were both very happy with the finished product it fit their needs well.

It’s been a few years since I programmed in VB so was happily surprised how much I could remember and found that what I have learnt recently in other languages helped me to do things in VB I could not do before or as well like getting the media assets to work.

I was very happy with the way the app came together I was able to easily get the animations to run, the code was very simple with only a few lines to create a random number generator and a turn counter then use if statements to compare the numbers each turn and do an action. Adding the video and sound was also surprisingly easy I have had a lot of problems with adding them to apps in the past but this time it was fine once I figured out it would only run windows media player files.

Most of the documents went well I was able to stay on a good timeline especially considering the lockdown we had and avoided most of the risks that presented themselves.

Cons

There is a bug in the game that resets the wins and losses counters at the start of each new game when it should only do it to the guesses counter, I have tried everything I can think of to fix it but have not had any luck.

Testing was the biggest problem out of the documents I struggled to come up with code for the functionality tests and tasks for the uses to try and do on each prototype meaning I did not get as much info from the uses as I probably could have and could not write unit tests that would solve annoying bugs like the counters resetting. If I could do the project over, I would put more time into better testing methods.

## Conclusion

To summarise in this report, I have detailed the process I went through in the development of my project to create a simple Windows App game. Using examples of my portfolio content like Navigation Maps, Timeline plans and Risk Assessments and the tools I used to create my media assets like Visual Studio, Pivot Animation Studio and PowerPoint I have shown the design thinking process I went through with my clients to create personas based on them that helped me to iterate through five different versions of the game till I ended up with a working product that fit both of their needs.