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CTEC3451 Development Project

**“Creating a Control Mapping Program for Game Accessibility”**

Final Deliverable

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# Acknowledgements

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# Abstract

There are millions of video games available worldwide, but how many are actually accessible and well represented? The answer is less than you might expect, which is why this project was created to demonstrate that it is possible to do so and that it can be used and altered for future usage.

This report details the development of a control mapping program for game accessibility, as well as the two prototype games created to test the control mapping program, including the system design of the project, the development cycle, the functionalities, user interfaces and the testing of the project. Finally, providing a critical analysis of the project to conclude the Development Project.

# Introduction

## Background

The main product of this project is a Control Mapping Program for Game Accessibility, it maps the control settings from one game and loads it to another. Included with the project, are two Prototype Games in which I created to test and use the mapping program between; “Wheelchair Basketball”, a 2D basketball shooter, and “Bye-Bye Thoughts”, a 3D first person shooter.

The main functions of this project, is by loading one of the prototype games, navigate through its’ menu and to the ‘game settings’ scene where it allows the player to select and change their key bindings and what type of input device they are using, whether it be keyboard and mouse or a controller, and then save these changes which saves to a json file in an accessible file for both prototype games. Then, the player can load the other prototype game, go into its game settings after navigating through the menu and press load and it loads the changes in key bindings to this second prototype game. Unfortunately, the keyboard and its key bindings are the only input device that can be currently mapped and saved, but the use of a controller input in both prototypes is still possible.

*Figure 1:*

*Figure 2:*

## The need for the project

Such a program and its prototypes are needed because both of these games include representation of disabilities within them to deliver the importance and the ability to include these in video games, as the Games Industry lacks this with only a handful of games that include appropriate representation. The same goes for accessibility in games, it is usually an after-thought in the development in video games, which is why a program such as this is necessary, so that the developers can include it into their games with ease, which allows them to improve on the accessibility their game provides and may even give them further incentives to include more accessibility options and disability representation. It was also a chance to develop personal skills and become more familiar and confident in creating games using Unity 3D.

## Objectives

The aim of this project is to create a program that will map the specific control settings and its key bindings, off a prototype game and transfer them onto a different prototype game, to allow for accessible gaming. And to develop two prototype games and to include disability representation within them to ensure the possibilities and ability to do. As well as being accessible with the ability to set key bindings and save the changes in the settings using json and load the saved changes. The software that is created will be well constructed and work as intended. Furthermore, another objective is User Testing by gaining primary data from a group of individuals in testing the two prototype games and mapping their selected input decisions and key bindings and output it. Finally, to document the process in the form of a project development report.

# Main Body

## Development Cycle

The development lifecycle of this project, started with planning on what the project would be

## Basic Functionality

## System Design

Wheelchair:

There are 2 levels included the first being a simple throw and shoot, the second the basketball hoop moves adding some difficulty, as these games are prototypes, only 2 levels were included. The wheelchair aspect, comes from

## Underlying Data Structures & Algorithms

## User Interface

## Known Issues

## Testing

# Critical Evaluation

## Project Evaluation

-How much does it do, how good is it?

-Are there any bits you are particularly proud of?

-What isn’t implemented? How would you extend it given more time?

Can use first person active voice for this section

## Evaluation of your approach

-In terms of project management approach and in terms of development methods or research methods used

-How successful was the approach you adopted?

-What techniques did you use that worked well? Why?

-What did you learn by doing the project? – did you meet your academic objectives

-How would you do it better if you did the project again?

## Evaluation of tools used:

-What languages, libraries, environments etc did you use for the development? Or, what libraries, methods, techniques did you use for the research?

-Were they suitable? What were their main plus and negative points?

## Final paragraph

-end on a positive note

# References

https://www.piskelapp.com/