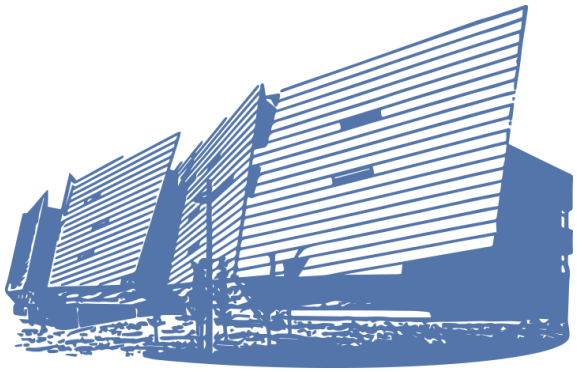

Galway Mayo Institute of Technology, Dublin Rd Campus

BSc (Honours) in Software Development

Gesture based UI Voice Recognition Media Project

Tomás O'Malley(G00361128)

Module Lecturer : Dr Damien Costello
Department of Computer Science

Github Repo : https://github.com/OmalleyTomas98/GBUI-UnityMediaPlayerProject

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Contents

Chapter 1

Introduction

For my gesture based user interface project I settled on developing a Gesture Recognition Media Player . A natural user interface is referred to "effectively invisible, and remains invisible as the user continuously learns increasingly complex" - Wikipedia.I created the project using the C library and the Unity Engine.Examples of user interfaces windows 10,Xbox menu systems and Play-stations Menu System XMD.

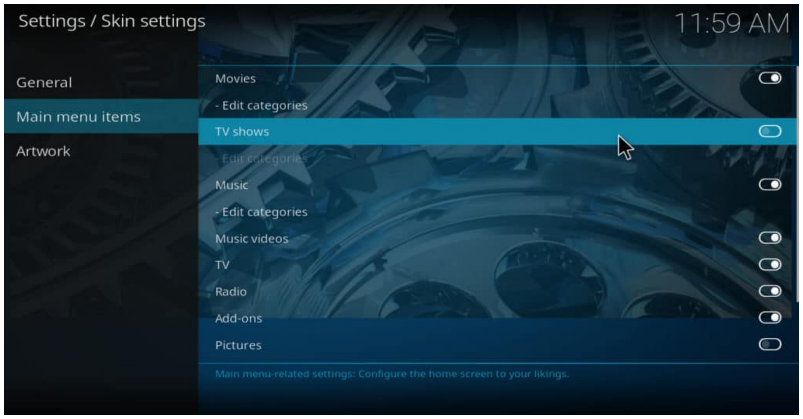

Figure 1.1: Kodi Media Player

Figure 1.2: PlayStation XMD Interface

Chapter 2

Project Hardware/Software

All computers use hardware such as keyboards , mice , touchscreens for the user experience. The hardware used for my application are as follows:

- **Microphone:** Used for voice recognition to allow user to interact with menu systems.The specific hardware used is a simple USB interface webcam with a built in microphone which allowed for voice connection.
- **Unity:** I implemented my gesture-based interface using the unity environment as outlined in the project specification.
- **C:** All scripts were developed using the C library.
- **Git:** I used the version control tool Git to handle the projet workflow.All work can be found in my repo : https://github.com/OmalleyTomas98/GBUI-UnityMediaPlayerProject
- **Mouse/Keyboard:** As part of the natural user interface the user can use the keyboard and mouse to control the application as expected.

Chapter 3

My Application

I created a scene for each component of my implementation of a media player.The components are as follows:

- **Welcome Menu:** In the welcome menu the user is welcome and prompted to start , options and Quit to exit the player.

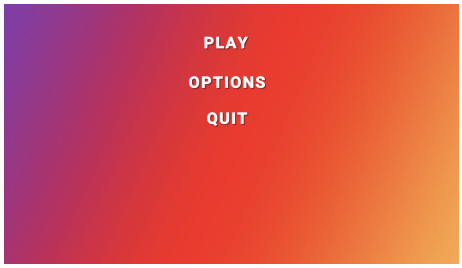

Figure 3.1: Main Menu

- **AudioPlayer:** In the audioPlayer the user has the option to select a track , stop , play , next , previous track.

Figure 3.2: Audio Player

- **VideoPlayer:** In the media player the user has the option of play , pause , quit , scrollbar and volume bar.

Figure 3.3: Video Player

Chapter 4

User Experience

Gestures

- Movement Controls : I had issues with my programming at run-time and couldn't get all controls in my XML file to run unfortunately.
- Volume Controls : I had issues with my programming at run-time and couldn't get all controls in my XML file to run unfortunately.

Chapter 5

Obstacles/Issues

Here are a list of some of the obstacles and issues of my application :

- **File Paths :** I used hard-coded movie-clips and audio-clips to demonstrate my media player.Ideally the user should be able to choose their media from their Music/Movies folder on their desktop but due to the nature of the gesture system I couldn't add the feature as file explorer is controlled completely via mouse and keyboard.
- **Voice Recognition :** I had major issues getting my voice recogniser to be implemented in my video and audio scenes.
- **Hardware choices :** To allow a smoother interface using a Kinect 2.0 sensor would of allowed for a smoother user interface.I couldn't get hold of the hardware unfortunately .

Chapter 6

Conclusion

- Being a huge film and music fan I had intentions to create an application I would personally use for my home media consumption.Overall I had lots of difficulties creating my application and couldn't fix or add more features due to my own time management towards other assessments.Thank you for your time.