UNIVERSITI TEKNOLOGI MARA

SIGNIT- MOBILE APPLICATION FOR LEARNING SIGN LANGUAGE IN AUGMENTED REALITY

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ABSTRACT

Sign language is a type of communication used to convey through hand gestures, body language, and facial expressions. It's primarily used for the deaf and those that can hear but can't talk. Learning sign language should start at an early age because it is not easy to learn sign language especially for children. Despite want to encourage children to learn sign language there is some problem in learning sign language application such as limited shortage of learning applications for the deaf, especially based on local material and most of the sign language mobile applications on the market is focusing on American Sign Language (ASL) . So, to overcome all these problems, this project aims to promote learning Malaysian Sign Language using Augmented Reality technology named as SignIt. The objectives of this project are to identify the requirement of the SignIt application, to design the SignIt application, and to develop the SignIt augmented reality application. Literature review have been made in order to obtain finding from trusted sources and to strongly support the information as well as the problem statement. To develop the application, Rapid Application Development (RAD) methodology has been used throughout the process of the develop and build the application until the testing phase. This augmented reality technology use marker-based augmented reality which will focus on the object and will focus on the object and it will produce more information after the recognition. This project will benefit towards children in learning sign language in Augmented Reality. In the future, this project is recommended to include word along with the 3D animation and the model should focus on hands and face as it is the most important parts of the body for sign language.

Keywords: sign language, learning sign language, Marker-based Augmented Reality, Rapid Application Development (RAD)

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CHAPTER 1

INTRODUCTION

Chapter Overview

This chapter provide the background and rationale for the study. It also gives details about the problem statement of this project, objectives, scope and project significance.

1.1 Project Background

Communication is important for humans to maintain relationships with others. There are many various forms of communication such as oral, non-verbal communication, written correspondence, and visualization. Each person communicates with others using language. Sign language is essentially used by hearing disabled people to interact between themselves, which have been created by deaf societies. Sign language is an important vehicle of communication within deaf communities, as well as in educational and other programs serving deaf people. Gallaudet University has lists 271 different sign languages used around the world. Different sign language is used in different countries or regions (Joseph et al, 2017). For example, American Sign Language (ASL) used in America and Malaysian Sign Language (MSL) used in Malaysia. Malaysian Sign Language is the native language for the deaf people in Malaysia. The Sign Language (SL) involves hand movement and hand gestures. The key approach uses is a conventional personal learning approach for the learning of the Malaysian sign language.

The root of MSL began in 1954. Originally, it is based on American Sign Language (ASL), but these two are considered different languages. The use of MSL makes it easier for teachers to teach the Malay language to deaf students. Sign language involves hand movement and hand gestures. Languages of signs express much of their prosody via non-