UNIVERSITI TEKNOLOGI MARA

JOM DEKO AUGMENTED REALITY INTERIOR DESIGN APPLICATION

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ABSTRACT

Interior design is a multifaceted profession which achieves built interior environments and performs through creative and technical solutions. This project is developed an application to help interior designers and households to decorate and design room in interactive way rather than traditional way. **Jom Deko** is an interior design application that using marker-less augmented reality technique to decorate room. Marker-less augmented reality use sensors in device to accurately detect the real-world environment, such as the locations of walls and points of interaction and allowing users to place virtual objects into a real context without needing to read an image. This project needs to accomplish three objective; to identify users, requirements, to design and develop **Jom Deko** Application**. Jom Deko** application provides interaction features like drag and drop furniture using Augmented Reality technology and can save their design in the smartphone. The application developed limited to furniture in living room and for Android platform only. This project use Handled Displays technology which is handy small computing devices (smartphone) with display. More than that, **Jom Deko** application can help interior designers and households to generate many ideas and improves decision making in decorating room. It also helps them to avoid buying inappropriate furniture for their room and reduce use of paper and pencil to sketch initial decoration. This application also helps interior designers to improve design quality, produce various of room design and promote it to the society and increase customers' satisfaction and trust. This project use Design Thinking process as it methodology which has Empathise, Define, Ideate, Prototype and Testing phase. In conclusion, this project will act as a strong enabling force for wider deployment of Augmented Reality in the future in Interior Design Application in order to heighten user's experience in decorating house.

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CHAPTER 1

INTRODUCTION OF PROJECT

This chapter provides the overview of the project and discuss about the problem statement of this project, objectives, scope and project significant.

1.0   Project Background

Interior design is not about just what is pretty or become pleasing in the eyes. It is more than just selecting furniture and paint colors. It is a process to provide solutions and interior designers are the problem solvers. They get to the heart of the issues and design spaces that have the function, aesthetic and quality that the client is looking for. According to Xue (2011), the aim of interior design is to create the ideal space environment and build harmony family.

There are many resources about interior design such as magazine, catalogue, website and television show. The famous resources in Malaysia about interior design are IKEA and Karang Kraf. They provide information about interior design.

Hence, there are many approaches to decorate or design home such as using 2-Dimension (2D) and 3-Dimension (3D) application, manual design in paper sheet etc. With today technology advancement, there are various ways to heighten users' experience of searching and browsing information about interior design. Augmented Reality (AR) provides a vivid view of physical world and allows a person to combine real and virtual information and object in a physical, real-world environment (Hui, 2015). For example, AR has been used by IKEA. IKEA has launched their first AR interior design application "Ikea Place" in 2017 but not yet publish in Malaysia. The application works using their catalogue. The users can point their phone or tablet at the catalogue, and the item displayed on the page will spring to life, full-size and 3D. They can walk around the furniture, approach or move away from it, and even rotate it using their device controls.

Furthermore, AR technology has been used in many other field and application such as simulating a surgery process (Botden et al., 2007), maintenance and repair (Tim, 2017), advertising and promotion (Perdue, 2017), education (Kesim & Ozarslan, 2012), game