

VIRTUAL CONGKAK

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VIRTUAL CONGKAK

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ABSTRAK

Virtual Congkak adalah permainan mudah alih yang mengimplementasikan teknologi Realiti Berperanta (AR). Congkak adalah permainan tradisional yang telah dimainkan sejak zaman dahulu lagi. Papan Congkak dan beberapa batu Congkak yang biasanya menggunakan guli diperlukan sebagai alat untuk bermain. AR adalah keupayaan untuk memaparkan paparan yang dihasilkan komputer untuk meningkatkan pengalaman dunia sebenar pengguna. Pengguna hanya memerlukan telefon pintar, aplikasi dan penanda AR untuk memainkan permainan Virtual Congkak. Congkak akan dipaparkan apabila pengguna menunjuk ke Penanda AR dengan menggunakan kamera telefon bimbit mereka sebagai sambungan. Objek bagi projek ini dibangunkan dengan menggunakan perisian 3D Builder oleh Windows dan pergerakan permainan dibangunkan dengan menggunakan Perisian Unity untuk mengkompilasi semua Objek 3D menjadi satu aplikasi yang berfungsi dengan mengimplimentasikan kod yang merupakan kod C #. Sistem ini dibangunkan dengan menggunakan metodologi Rapid Application Development (RAD). Metodologi ini dipilih kerana ia sesuai bagi pembangunan sistem yang mempunyai masa yang terhad. Sebelum sistem ini dibangunkan, maklumat tentang peraturan bermain Congkak dicari dan dikembangkan menjadi satu set pseudokod. Virtual Congkak bertujuan untuk memberi pengguna nilai-nilai estetika yang terdapat dalam permainan Tradisional.

ABSTRACT

Virtual Congkak is a mobile game that implement the technology of Augmented Reality (AR). AR is the ability to display the computer generated display to enhance user's real world experience. Congkak is a traditional game which been played since a long time ago. A Congkak board and some Congkak stone which usually using marbles are needed as the game equipment. In this days of advance mobile game technology, there are modern games that use violence theme. This will make people forget about traditional games that actually gives more aesthetic and good value. There are some existing Congkak game but there is not yet a traditional game that implies the Augmented Reality Technology. In the real world of a player, Congkak games needs a wooden board to play so it cannot be access anywhere. Since Virtual Congkak is a mobile based game, it is portable and can be played anywhere at any time. User only needs a smartphone, the Virtual Congkak application and marker to play the game. The Virtual Congkak will display when user points to the AR Marker by using their mobile phone's camera as the extension. The Object model of This application is developed by using 3D Builder software by Windows and the gameplay is developed by using the Unity Software to compile all the 3D Objects into one running application by implementing the code which is the C# code. Before this system were develop, information about the rules of playing the Congkak is searched and developed into a set of pseudocode. The Virtual Congkak is aimed to gives user the aesthetic values of Traditional games.

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LIST OF ABBREVIATIONS

AR	Augmented Reality
RAD	Rapid Application Development

CHAPTER 1

INTRODUCTION

1.1 BACKGROUND

Congkak is a traditional game which been played since a long time ago. A Congkak board and some Congkak stone which usually using marbles are needed as the game equipment. The Congkak board is a wooden board carve with 6 holes for the village hole for each right and left side and 2 big holes for the house hole located on each end of the board. If the village hole is 6 then each village hole must be added with 6 marbles while the house hole will remain empty. The game starts by distributing the marble one by one in each holes according to the rules. The target of this games is to collect as many marble into each house hole.

The virtual Congkak is a mobile game that implements Augmented Reality (AR) technology which is the latest technology that implemented in mobile games. AR is the ability to display the computer generated display to enhance user's real world experience. User only needs a smartphone, the Virtual Congkak application and a marker to play the game. The Virtual Congkak will display when user points to the AR Marker by using their mobile phone's camera as the extension. Since it is a mobile based game, it is portable and can be played anywhere at any time. The concept of this game which is Congkak is chosen because Congkak itself is a traditional game that promotes thinking and strategy skills with some set of algorithm. Thus, player could have fun while generating their thinking and strategy skills.

1.2 PROBLEM STATEMENT

In this days of advance technology, there were many mobile game that offers latest technology that could promise user satisfaction. However, the themes were mostly modern and sometimes violence theme. This will make people forget about traditional games that actually gives more aesthetic and good value. Thus, Virtual Congkak were created to introduce the aesthetic value traditional games could offer.

There is some mobile game that offers Congkak game but there are still no traditional games on mobile phone that implemented the AR Technology in Malaysia. Thus, Virtual Congkak offers user to play Congkak using AR Technology to get the real feeling of playing it.

Congkak game in reality needs a Congkak board and a lot of Congkak stone but, not all people on this era actually owned a Congkak Board. Thus, Virtual Congkak were made to support the portability of Congkak. It is easy to bring anywhere without needed the real Congkak board which will be quite heavy to bring it anywhere.

1.3 OBJECTIVES

- To design, develop and implement the Augmented Reality Technology function and features in Virtual Congkak development
- To evaluate the Virtual Congkak by using validation and verification

1.4 SCOPE

Table 1.1 Virtual Congkak Scope

User	The targeted user for this games are from 9 years old and above from any races and ethnics
Technology	Augmented Reality (AR)
Tools	<ul style="list-style-type: none">● Microsoft Words 2016● Unity 2018.2.14f1● 3D Builder● Medibang 2.1.10
Feature	<ul style="list-style-type: none">● To increase the revenue of the company● To introduce traditional game Congkak to many people● To increase awareness in maintaining the traditional games as a must-play game

Table 1.1 shows the Virtual Congkak scope which is the targeted user, the technology used, tools used on developing this application, and the feature of this application.

1.5 SIGNIFICANT

- Virtual Congkak will promotes the value of Congkak to the user
- Virtual Congkak will gives user a real experience on playing Congkak
- Virtual Congkak is portable and easy to play anywhere
- Virtual Congkak is the first Congkak game that implemented AR technology

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