

**A GUIDELINE FOR BUMBER GAME INTERFACE DEVELOPMENT  
FOR IPAD AND IPHONE (UNIVERSAL APPLICATION)**

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**UNIVERSITI UTARA MALAYSIA**

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APPLICATION)**

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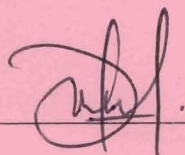
**GUIDELINE FOR A BUMPER GAME INTERFACE DEVELOPMENT FOR IPAD**  
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## **Abstrak**

Pembangunan aplikasi sejagat untuk iPhone dan iPad terutamanya aplikasi permainan boleh menjadi agak mencabar kerana ia memerlukan pemaju mengambilkira perbezaan ciri-ciri fizikal antara dua peranti tersebut dimana ia memerlukan susun atur muka pengguna yang berbeza. Sebuah permainan di dalam iPad kemungkinan tidak sesuai dipaparkan dan tidak konsisten didalam iPhone dan begitu juga sebaliknya. Tujuan kajian ini adalah untuk menghasilkan satu garis panduan yang boleh digunakan oleh pemaju untuk menghasilkan satu aplikasi permainan sejagat yang sesuai dipaparkan dan konsisten dikedua-dua peranti tersebut. Atas tujuan tersebut, sebuah aplikasi permainan sejagat untuk iPhone dan iPad yang dinamakan 'Bumper' telah dibangunkan menggunakan garis panduan pembangunan aplikasi permainan sejagat untuk iPhone dan iPad yang telah diwujudkan seperti diatas. Satu penilaian juga telah dijalankan keatas permainan tersebut untuk menilai kebolegunaannya di mana permainan tersebut telah mendapat nilai purata 78.75 skor SUS. Satu lagi penilaian mengenai sama ada prototaip permainan tersebut sesuai dipaparkan dan konsisten dikedua-dua peranti tersebut juga telah dijalankan dimana hasil kajian tersebut mendapati permainan tersebut adalah sesuai dipaparkan dan konsisten dikedua-dua peranti tersebut.

## **Abstract**

Developing a universal application for iPhone and iPad especially game application can be quite challenging since it requires developers to take into account the different in physical characteristics between these two devices which requires a different user interface layout. An iPad game maybe not properly viewable and not consistence in iPhone and vice versa. This study is aimed to create a guideline that can be used by developers to develop a universal game application that properly viewable and consistence in both devices. For this reason, a universal game application for iPhone and iPad that named 'Bumper' has been developed, which follow the guideline for development of universal game application for iPhone and iPad that have been created above. A test also has been conducted for the game to test it usability where the game has been getting an average 78.75 SUS score. Another test regarding whether the game prototype is properly viewable and consistent in both devices was also been conducted where the result shows that the game is properly viewable and consistent in both devices.

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# CHAPTER ONE

## INTRODUCTION

### 1.1 Background

Apple's App Store is open officially on July 10<sup>th</sup> 2008 as the market place for the software developers to market their iPhone apps (David, 2011). To date, Apple's App Store contains more than 400,000 apps ranging from several categories such as games, books, entertainment, education and lifestyle. About 29 percent of the application is in the game category (Hughes, 2012). In this category, data releases by Distimo in February 2010, shown that the top three grossing game category are action game where it takes about 22 percent of the total grossing for game, arcade game at 12 percent and adventure game with nine percent (Schonfeld, 2010). The late Steve Jobs have announced at 2011 World Wide Developer's Conference, that customers have downloaded over 14 billion apps with over USD2.5 billion paid to iOS developers so far (Richard, 2012).

Based on the number alone, the App Store seems as 'gold rush' for developers and inspired entrepreneurs around the world to download the iOS SDK, learns the Objective-C and begins developing their application (Dave & Michael, 2011). There are about 135,000 registered iOS developers who using iOS SDK (Hughes, 2012). The iOS SDK comes with an IDE called XCode which a full-featured with a range of utilities for testing, analyzing and debugging the code. It

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