**Hong Kong Institute of Vocational Education**

**Department of Information Technology**

**Higher Diploma in Software Engineering**

**ITE3902 Smartphone Apps Fundamentals**

Mini Games

Proposal

|  |  |  |
| --- | --- | --- |
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# Introduction

The Mini Games are designed for player to have a short relax time after busy day. We design Four mini game.

## Game

The Following table will show the game:

|  |  |
| --- | --- |
| No. | Game |
| 1 | AB Number Guessing |
| 2 | Breakout |
| 3 | Tic-Tac-Toe |
| 4 | Whac-A-Mole |

## Game Rules Instructions

### AB Number Guessing

The answer is non-repetitive four digits, guess four numbers, the number in front of A is the correct number of positions and numbers, the number in front of B is the number of correct but incorrect positions.

### Breakout

Breakout begins with eight rows of bricks, with each two rows a different colour. The colour order from the bottom up is yellow, green, orange and red. Using a single ball, the player must knock down as many bricks as possible by using the walls and/or the paddle below to ricochet the ball against the bricks and eliminate them. If the player's paddle misses the ball's rebound, he or she will lose a turn. The player has three turns to try to clear two screens of bricks. Yellow bricks earn one point each, green bricks earn three points, orange bricks earn five points and the top-level red bricks score seven points each.

### Tic-Tac-Toe

Tic-tac-toe is a game for two players, X and O, who take turns marking the spaces in a 3×3 grid. The player who succeeds in placing three of their marks in a horizontal, vertical, or diagonal row wins the game.

### Whac-A-Mole

A typical Whac-A-Mole machine consists of a large, waist-level cabinet with many holes in its top and a large, soft, black mallet. Each hole contains a single plastic mole and the machinery necessary to move it up and down. Once the game starts, the moles will begin to pop up from their holes at random. The object of the game is to force the individual moles back into their holes by hitting them directly on the head with the mallet, thereby adding to the player's score. The quicker this is done the higher the final score will be.

# User Interface

# Functions

## Score Ranking Function

## Menu Function

## Reset Function

## Go back Function

## Set Player Name Function

## Setting Function

# Technology

## App inventor

App Inventor for Android is an open-source web application originally provided by Google, and now maintained by the Massachusettis Institute of Technology(MIT).

It allows newcomers to computer programming to create software applications for the Android operating system (OS). It uses a graphical interface, very similar to Scratch and the StarLogo TNGuser interface, which allows users to drag-and-drop visual objects to create an application that can run on Android devices. In creating App Inventor, Google drew upon significant prior research in educational computing, as well as work done within Google on online development environments.

This Mini Games application will be developed by using App Inventor.

## Firebase

Firebase is a mobile and web application development platform developed by Firebase, Inc. in 2011, then acquired by Google in 2014.

Firebase provides a real-time database and backend as a service. The service provides application developers an API that allows application data to be synchronized across clients and stored on Firebase's cloud.

This Database of Mini Games application will be developed by using Firebase.

## Accelerometer Sensor

An accelerometer is a device that measures proper acceleration.[[1]](https://en.wikipedia.org/wiki/Accelerometer#cite_note-Tinder-1) Proper acceleration, being the acceleration ) of a body in its own instantaneous rest frame,[[2]](https://en.wikipedia.org/wiki/Accelerometer#cite_note-Rindler-2) is not the same as coordinate acceleration, being the acceleration in a fixed coordinate system.

Some games of this application will use the accelerometer sensor of the device the control the objects of the game.

# Project Management

## Member Responsibility

|  |  |
| --- | --- |
| Participant | Role |
| TAM Chi Ho | * Project Management * Documentation * System Design * Program Implementation * Testing and Debugging * User Interface Design |
| CHU King Yin Ken | * Project Management * Documentation * Application Design * Program Implementation * Testing and Debugging * User Interface Design |
| WONG Lok Man | * Project Management * Documentation * System Design * Program Implementation * Testing and Debugging * User Interface Design |
| CHEUNG Shing Hong | * Project Management * Documentation * System Design * Program Implementation * Testing and Debugging * User Interface Design |

## Project Schedule

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| CASL Online Education and Approval Qualification System | | | | | |
| Phases | Activities | | Start Week | End Week | Duration(Week) |
| Planning | Feasibility Study | | 1 | 5 | 5 |
| Prepare work plan | | 1 | 5 |
|  | | | | | |
| Analysis | Identify Functions | | 1 | 5 | 5 |
|  | | | | | |
| Design | Design database | 6 | | 8 | 3 |
| Application design and UI design | 6 | | 10 | 5 |
|  | | | | | |
| Implementation | Application Implementation | 7 | | 12 | 6 |
| System Testing | 7 | | 12 | 6 |
| Debugging programs | 7 | | 12 | 6 |
| Produce documentations | 4 | | 12 | 9 |
| Prepare for demonstration | 11 | | 13 | 3 |
| Total: 13 weeks | | | | | |

## Gantt Chat

