

# Angry Bird

航太 108 龔俊瑋 F44044066

## 1. Game Showing



## HOW TO PLAY

Simply Press the Bird

Drag for Aiming . . .

Then "SHOOT!"



## **2. Game Features**

### **A. Physic World System**

- To make a game like AngryBird, which needs to display movement similar to real world, it becomes necessary to introduce “physic engine” to help calculating bodies motion in game. Therefore, I use Box2D physic engine as the base-construction of the game.

### **B. Impulse Calculating System**

- I introduce this system to calculate the Impulse while bodies collide. By doing so, I can go beyond to destroy all objects in the game by getting each exerting-impulse data. Thus, The blocks are breakable, and the pigs can be destroyed when they get strongly hit.

### **C. Visual Effect System**

- This system is introduced to show some visual effect of the event in the game, such as scores appear smoothly when the bird hits the block, birds scatter to chips when they stop, and also the great pig-destroying effect pops out when you successfully cancel the pig.

### 3. Program Construction

#### 4 Main classes:

- **Game**
- **GameItem**
- **EnemyItem**
- **VisualEffect**

#### **Game Class: (QGraphicsView)**

methods

- displayMenu()    display the main menu
- CreateWorld()    create b2world and set music
- ShowWorld()    show the basic world
- CreateBirdItem()    create bird on the slingshot
- CreateEnemyItem()    create block and pig
- ActivateWorld()    activate b2world tick
- mouseEvent()    detect the mouse event input by player
- GameOverClean()    release the memory
- GameOver()    display game over window
- MoveBird()    help move bird
- destroyPig()    help destroy pig

slots

- start()    start game
- over()    exit game
- restart()    restart game
- tick()    tick the clock of b2world
- NextTurn()    determine the timing of creating the next bird

#### 4 Major Attributes Categories

- game world attributes
- game data attributes
- game sound and game effect attributes
- game running aid attributes

#### **GameItem Class: (QgraphicsPixmapItem)**

This is the base class of every Bird Items.

Polymorphism spirit.

#### **EnemyItem Class: (QgraphicsPixmapItem)**

This is the base class of every block and pig Items.

#### **VisualEffect Class:**

This class intergrates all the visual effects of the game.