**AngryBird Report**

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1. 簡介

憤怒鳥。

共四種鳥：第一種（紅鳥）無特殊功能，第二種（綠鳥）能瞬間加重，第三種（藍鳥）能瞬間加速，第四種（白鳥）能分身成三隻鳥。

三種障礙物：石頭、木頭、冰塊（以其密度由大到小排列為：石頭>木頭>冰塊）。

兩種敵人：綠色的（打到或掉到地上加100分）跟黃色的（位置較難打到，因此打到加200分）。

擊中敵人時會掉羽毛（不同的鳥有不同的羽毛）。

有瞄準線。

鳥落地後六秒消失；最後一隻鳥落地後六秒或超過遊戲視窗，結束遊戲。

1. How to play

以滑鼠一按一放間的移動距離為其飛行的方向與速度，按z鍵發動鳥的特殊效果。

1. UML class diagram

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| **Bird** |
| +count:Integer  +fixturedef:b2FixtureDef  +fixture:b2Fixture |
| +<<constructor>>Bird(x:float,y:float,radius:float,timer:QTimer\*,pixmap:QPixmap,world:b2World\*,scene:QGraphicsScene\*)  +setLinearVelocity(velocity:b2Vec2):void  +<<slots>>collide():void  +<<signals>>endgame(); |

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| **GameItem** |
| +g\_pixmap:QGraphicsScenePixmapItem  +mappedPoint:QPointF  #g\_body:b2Body\*  #g\_world:b2World\*  #g\_size:QSizeF  #g\_worldsize:QsizeF  #g\_windowsize:QSizeF |
| +<<constructor>>GameItem(world:b2World\*)  +<<distructor>>~GameItem()  +setGlobalsize(worldsize:QSizeF,windowSize:QsizeF):void  +<<slots>>paint():void  +<<slots>>collide():void |

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| **Land** |
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| +<<constructor>>Land( x:float, y:float, w:float, h:float, pixmap:QPixmap, world:b2World \*, scene :QGraphicsScene \*); |

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| **MainWindow** |
| +x:Integer  +x1:Integer  +x2:Integer  +y:Integer  +y1:Integer  +y2:Integer  +x3:Integer  +y3:Integer  +xb:Integer  +yb:Integer  +xt1:Integer  +xt2:Integer  +xt3:Integer  +xt4:Integer  +yt1:Integer  +yt2:Integer  +yt3:Integer  +yt4:Integer  + checkMouse:Integer  + birdMode:Integer  +land1:Land \*  +land2:Land \*  +bird:Bird  +bird2:Bird  +bird3:Bird  +score:Score\*  +target1:Target\*  +target2:Target\*  +target3:Target\*  +target4:Target\*  +rock[16]:Rock\*  + birdNumber:Integer  + ScreenMode:Integer  + btn\_w:Integer  + btn\_h:Integer  + check:Integer  + playtimes:Integer  + checkBird23:Integer  +vx:float  +vy:float  +birtmp:QPixmap birtmp;  +birdtmp:QGraphicsPixmapItem \*  +tool:QGraphicsPixmapItem \*  +restart:QGraphicsPixmapItem \*  +exit:QGraphicsPixmapItem\*  -ui:MainWindow\*  -scene:QGraphiscScene\*  -world:b2World  -itemList:QList<GameItem\*>  -timer:QTimer |
| +<<explicit>>MainWindow☹parent:QWidget\*=0)  +<<distructor>>~MainWindow()  +showEvent(QShowEvent \*):void  +eventFilter(QObject \*, event :QEvent \*):bool  +closeEvent(QCloseEvent \*):void  +createobticle():void  +<<signals>>quitGame();  -<<slots>>tick():void  -<<slots>>QUITSLOT():void  -<<slots>>birdHit():void  -<<slots>>endPage():void |

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| **Rock** |
| +hit:Integer |
| +<<constructor>>Rock(m:int,x:float,y:float,w:float,h:float,timer:QTimer \*,pixmap:QPixmap,world:b2World \*,scene:QGraphicsScene \*)  +<<slots>>paint():void  +<<slots>>collide():void |

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| **score** |
| -score:Integer |
| +<<constructor>>Score()  +<<slots>>increate(); |

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| Target |
| +hit:Integer |
| +<<constructor>>Target( x:float, y:float, w:float, radius:float,timer:QTimer\*, pixmap:QPixmap, world:b2World \*, scene :QGraphicsScene \*); |

1. Program architecture

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| **MainWindow** |

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| **GameItem** |  | **Score** |

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| **Bird** |  | **Land** |  | **Rock** |  | **Target** |