project3\_report

UML :

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| MinWindow |
| +birdie[4]:Bird\*  +pigs[3]:Pig\*  +obs[3]:obstacle\*  +pigx[3]:float  +pigy[3]:float  +count:int  +birdnum:int  +shotmode:int  +countv:int  +firstScore:int  +i:int  +pignum:int  +obsnum:int  +countresult:int  +judgeobs[3]:int  +judgepig[3]:int  +ifend:int;  +result: QGraphicsPixmapItem \*  +end: QGraphicsPixmapItem \*  +exit1: QGraphicsPixmapItem \*  +restart1: QGraphicsPixmapItem \*  +shot: QGraphicsPixmapItem \*  +exit: QGraphicsPixmapItem \*  +restart: QGraphicsPixmapItem \*  -scene : QGraphicsScene \*  -world : b2World \*  -itemList : QList<QameItem \*>  -timer :　QTimer  -birdtimer :　QTimer  -pigtimer :　QTimer |
| +<<explicit>>MainWindow(parent:QWidget \*=0): void  +~Maindow()  +showEvent(QShowEvent \*):void  +eventFilter(QObject \*,event:QEvent):bool  +closeEvent(QCloseEvent \*):void  +<<signals>>quitGame():void  -<<slots>>tick():void  -<<slots>>QUITSLOT():void  -<<slots>>tick():void  -<<slots>>judgebirdv():void  -<<slots>>judgepigpos():void  -<<slots>>judgeobsv():void  -<<slots>>judgeresult():void |

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| GameItem |
| +g\_body:b2Body\*  +g\_pixmap:QGraphicsPixmapItem  #g\_size:QsizeF  #g\_world:b2World\*  +g\_worldsize:static QsizeF  +g\_windowsize:static QsizeF |
| +QameItem(world:b2World \*)  +~GameItem()  +setGlobalSize(worldsize:QsizeF,windowsize:QsizeF):static void  +<<slots>>paint():void |

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

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| obstacle |
| +bodydef:b2BodyDef  + bodyshape:b2CircleShape |
| +obsatcle(x:float,y:float,w:float,h:float,timer:QTimer\*,pixmap:QPixmap,world:b2World\*,scene:QGraphicsScene\*)  +setLinearVelocity(velocity:b2Vec2):void |

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| pig |
| +bodydef:b2BodyDef |
| +Pig(x:float,y:float,radius:float,timer:QTimer\*,pixmap:QPixmap,world:b2World\*,scene:QGraphicsScene\*)  +setLinearVelocity(velocity:b2Vec2):void |

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| Bird |
| +bodydef:b2BodyDef  + bodyshape:b2CircleShape  +fixturedef:b2FixtureDef |
| +Bird(x:float,y:float,radius:float,timer:QTimer\*,pixmap:QPixmap,world:b2World\*,scene:QGraphicsScene\*)  +setLinearVelocity(velocity:b2Vec2):void  +*ability():*void |

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| birdgreen |
| +r1:int |
| +birdgreen(x:float,y:float,radius:float,timer:QTimer\*,pixmap:QPixmap,world:b2World\*,scene:QGraphicsScene\*)  +*ability():*void |

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| birdpink |
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| +birdpink(x:float,y:float,radius:float,timer:QTimer\*,pixmap:QPixmap,world:b2World\*,scene:QGraphicsScene\*)  +*ability():*void |

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| birdyellow |
| -countaccel:int |
| +birdyellow(x:float,y:float,radius:float,timer:QTimer\*,pixmap:QPixmap,world:b2World\*,scene:QGraphicsScene\*)  +*ability():*void |

How to play :

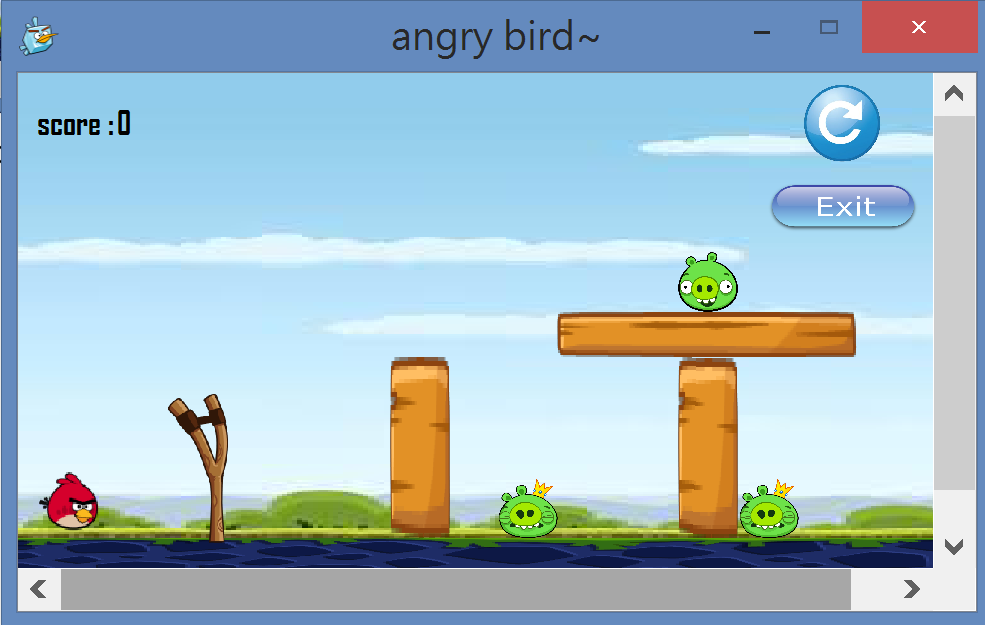
1. This is the beginning view.

There are three obstacles and three pigs, and you get your first red bird at first.

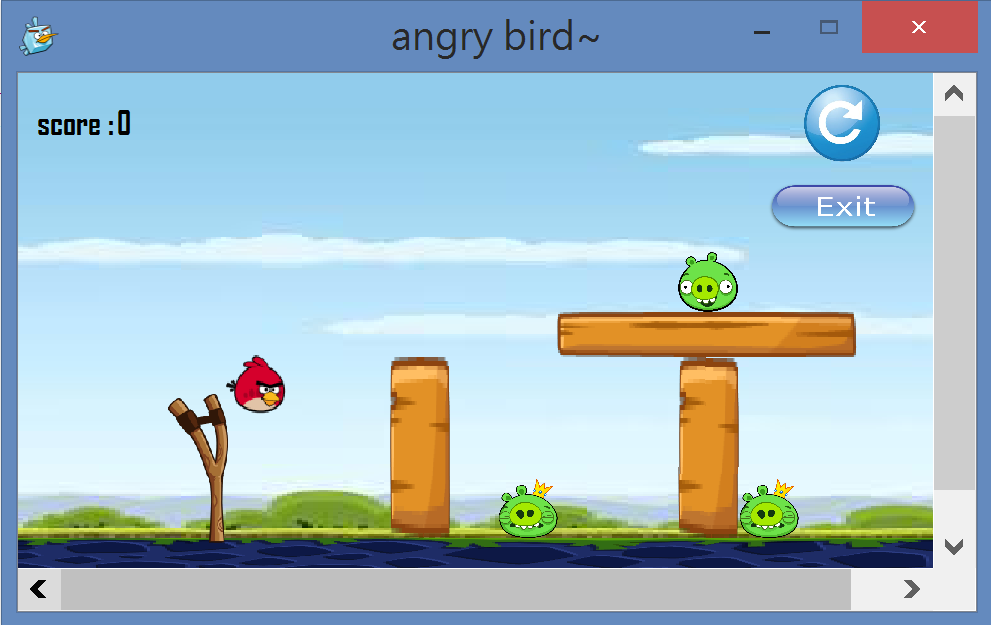


You can catch the bird with your mouse so you can choose the place to shoot the bird.

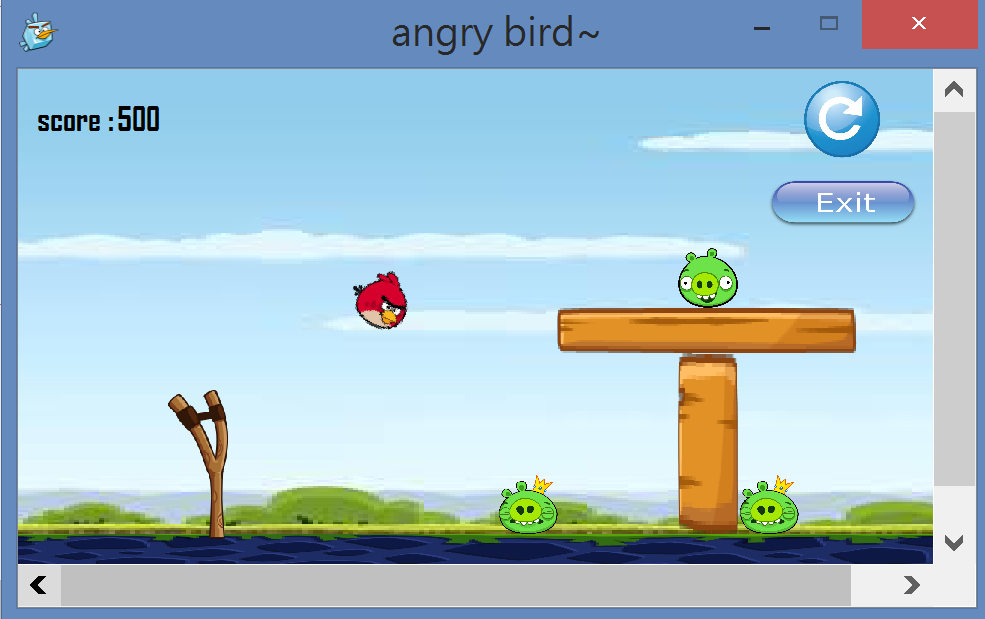




Then you can attack!! By release the mouse.



And the bird may hit the obstacles or the pigs. When the obstacle or pig disappear, you can get the point. The pig is 1000 points. The obstacle is 500 points.





If you press the restart button, the game will restart.



And if you press the exit button, you can leave the game.



Finally, if you had shot the final bird, the end view will appear.



Here you can also press the restart or exit button.

The birds :

 normal bird.

 black bird : it will accelerate when you press for one time.

pink bird : it will change to 張哲 head when you press.

ice bird : it will turn big when you press.

program architecture:

1. mainwindow : use the bird, obstacle, pig, land class to create the things. And also put on the buttons and score here. Here also do the eventFilter. When you press the mouse, it do several things : judge if you press the restart or exit, and then judge if you press after the bird was shot, then do the birds’ ability function. If you press before the bird was shot, then let the bird move with the mouse. Then after you release the mouse, the bird will get a velocity by the vector of the slingshot’s position and the bird’s position. The function judgeXXXX is use to judge if the pig and obstacle should disappear or not. Restart is also doing here.
2. The birds’ class inherit the original bird class, and use virtual function to let every bird have their own skill. The pig, obstacle, land class are used to create things.