Python Project Proposal

The Chicken Invader

Introduction to Computer and Programming

International College, King Mongkut's Institute of Technology Ladkrabang

Panupong Viriyasuebpong

ID 59090018

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1. Project Developer

59090018 - Panupong Viriyasuebpong

2. Project Title

The Chicken Invader

3. Project Description and Functions

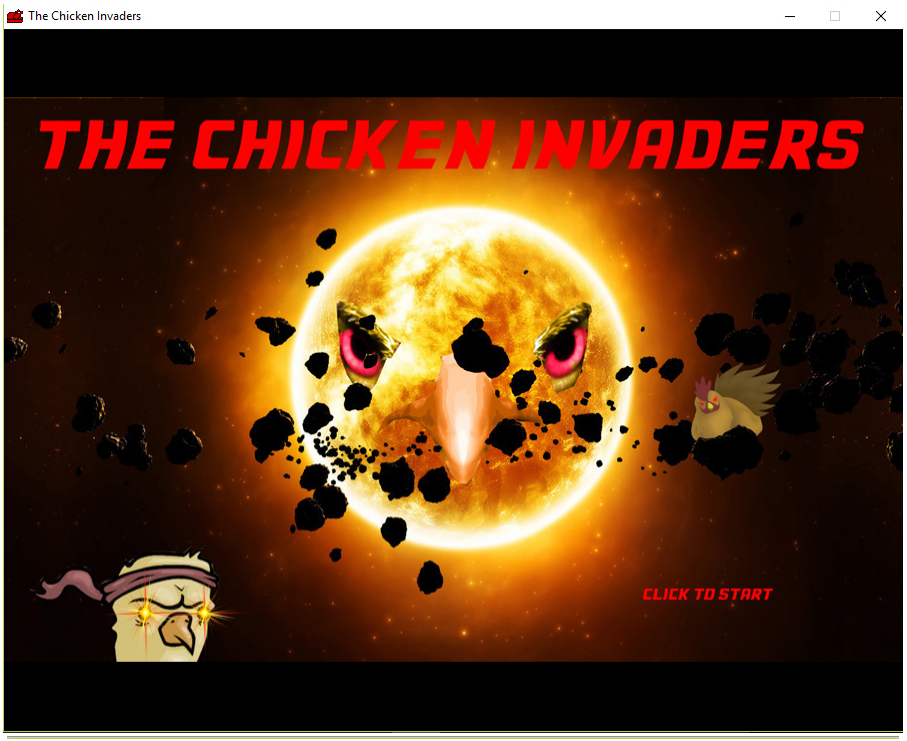
The Chicken Invader original game was released in 1999. It's my inspiration on developing this project. It is an arcade – action - shooting game with impressive graphic interface. Player play as a spaceship controlled my mouse cursor. The objective is to survive through many kind of moving mad chickens and their boss. Provided with weapon and bonus randomly dropped, the player get stronger. After several levels (5 - 10) the survivors get to inscribe their name on the Hall of Fame or high score board.

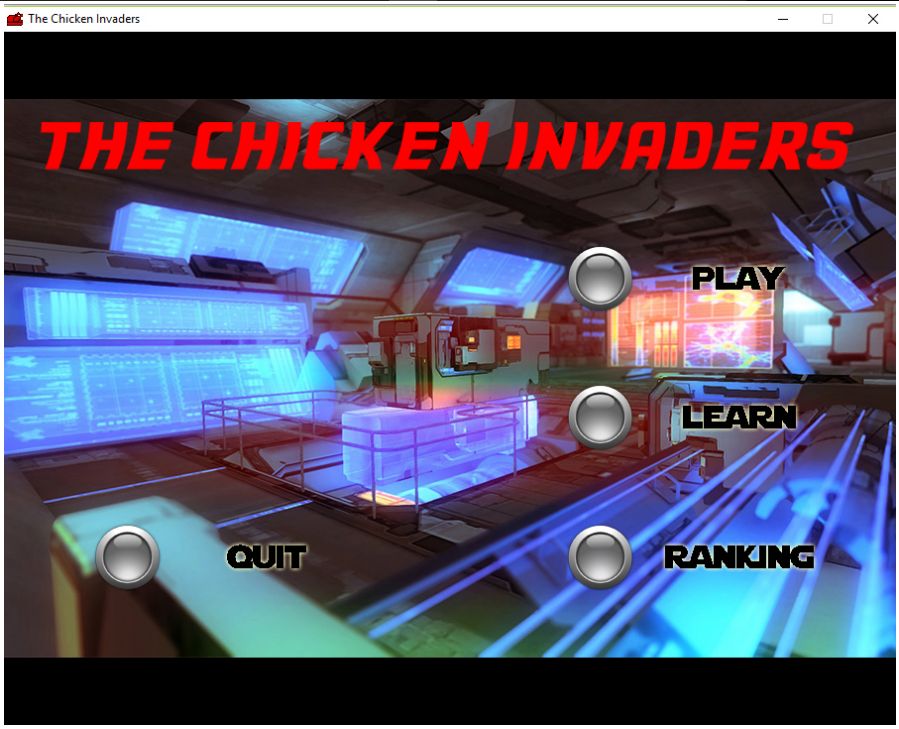
This game will be develop based on concept of OOP, which makes the program more stable and efficient. And also this will be a good opportunity for developer to get familiar with more object-oriented programming

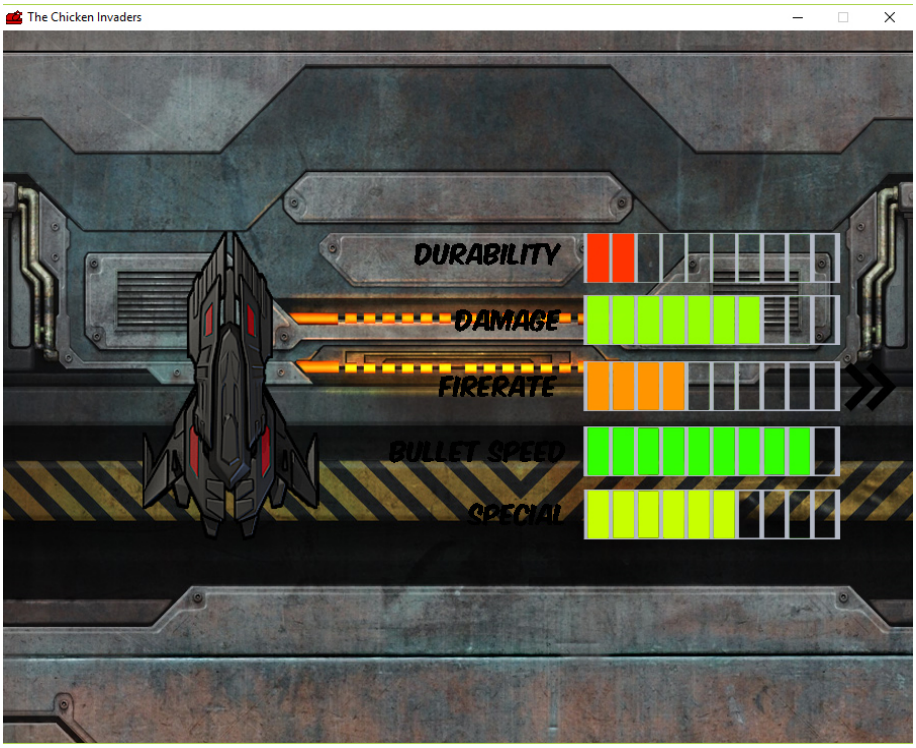
4. Project Requirements

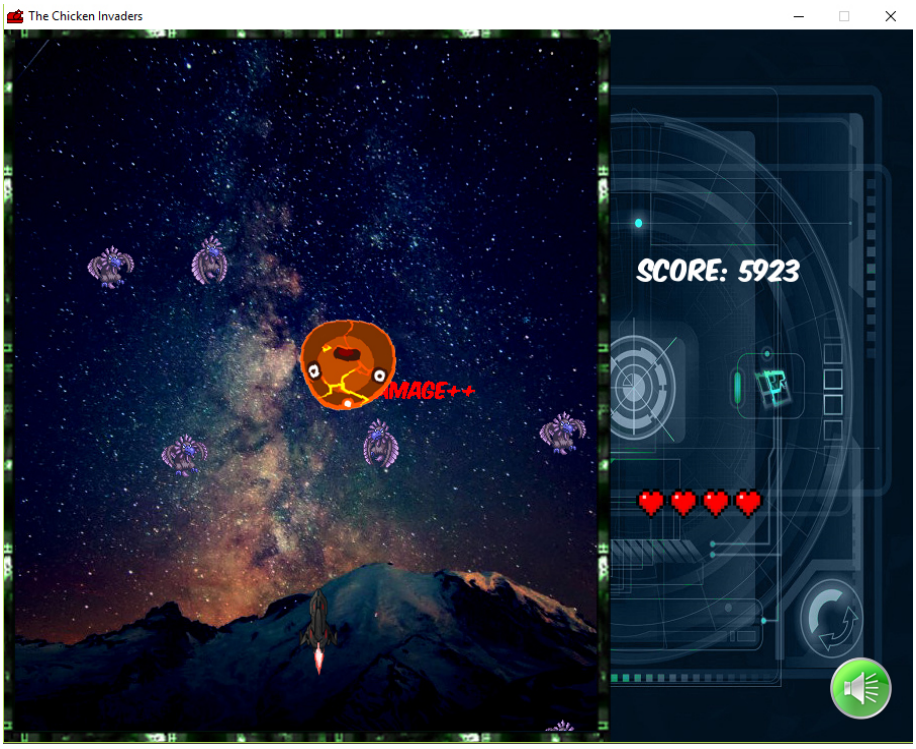
This project is based on the Pygame module. With ability to creates GUI window and receiving real time inputs.
Also it comes with built-in classes and functions which is really useful on game developing. Without it all sprites, character and interfaces won’t be able to come to life.

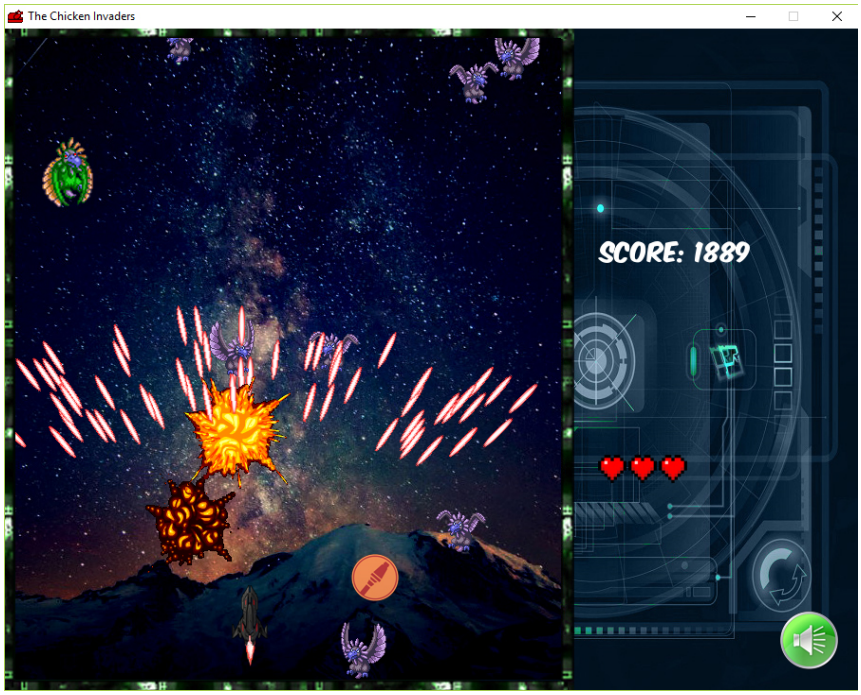
Screenshots

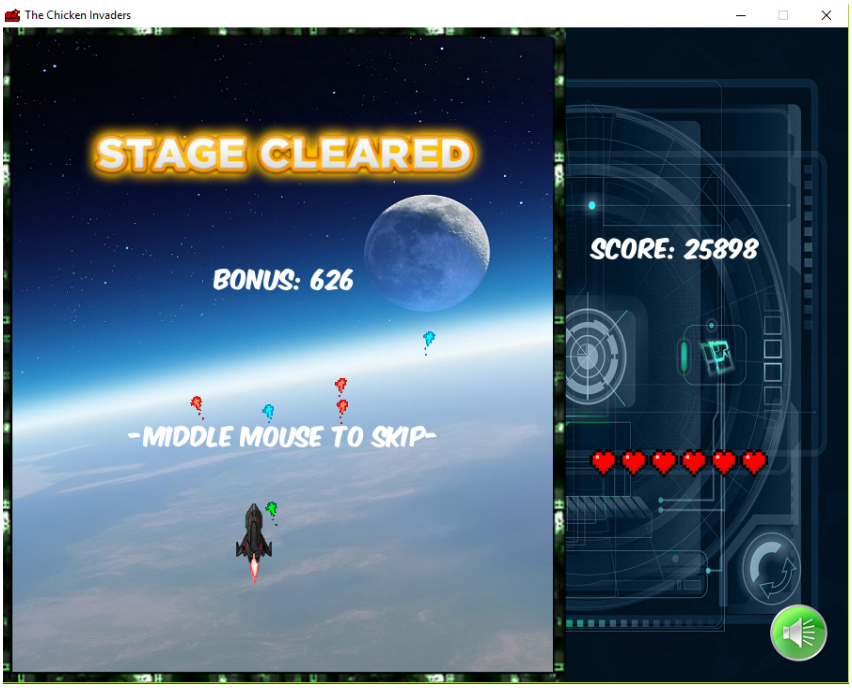


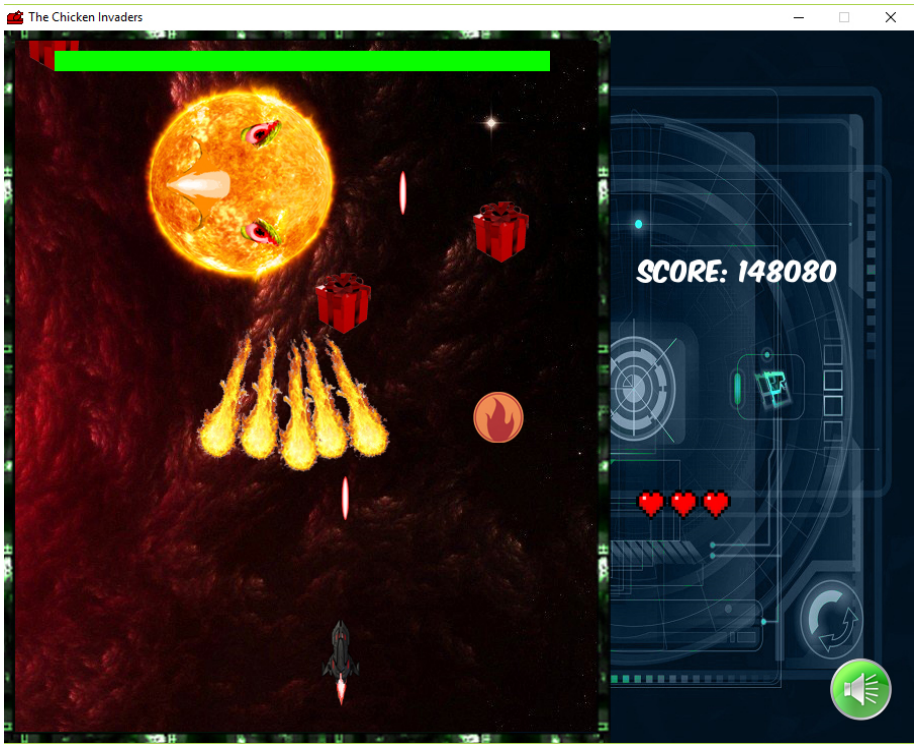


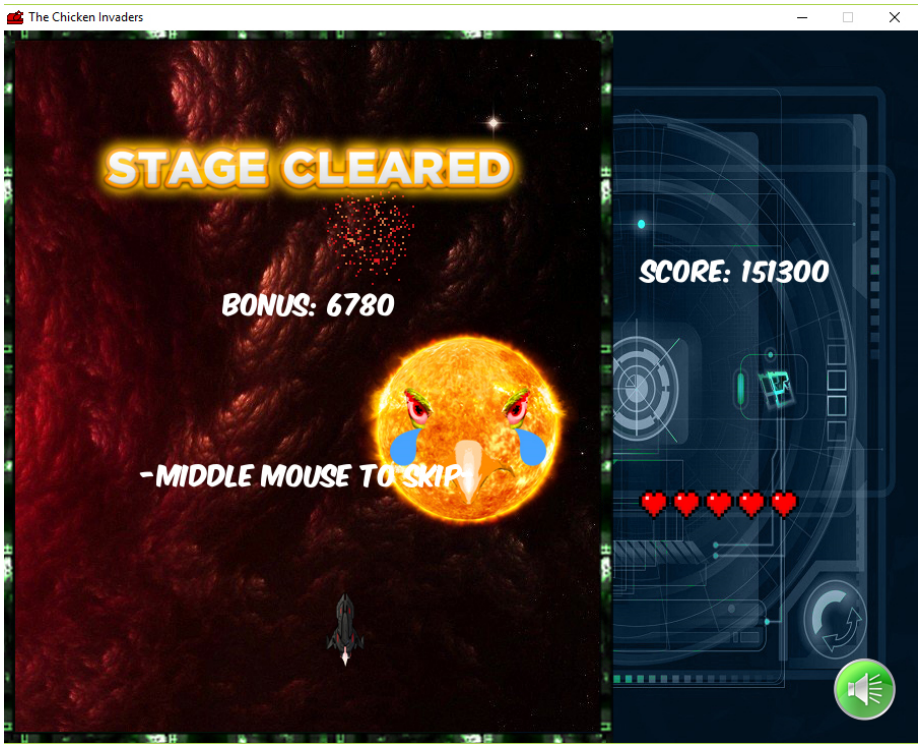

The Chicken Invaders
DURABILITY
DAMAGE
FIRERATE
BULLET SPEED
SPECIAL

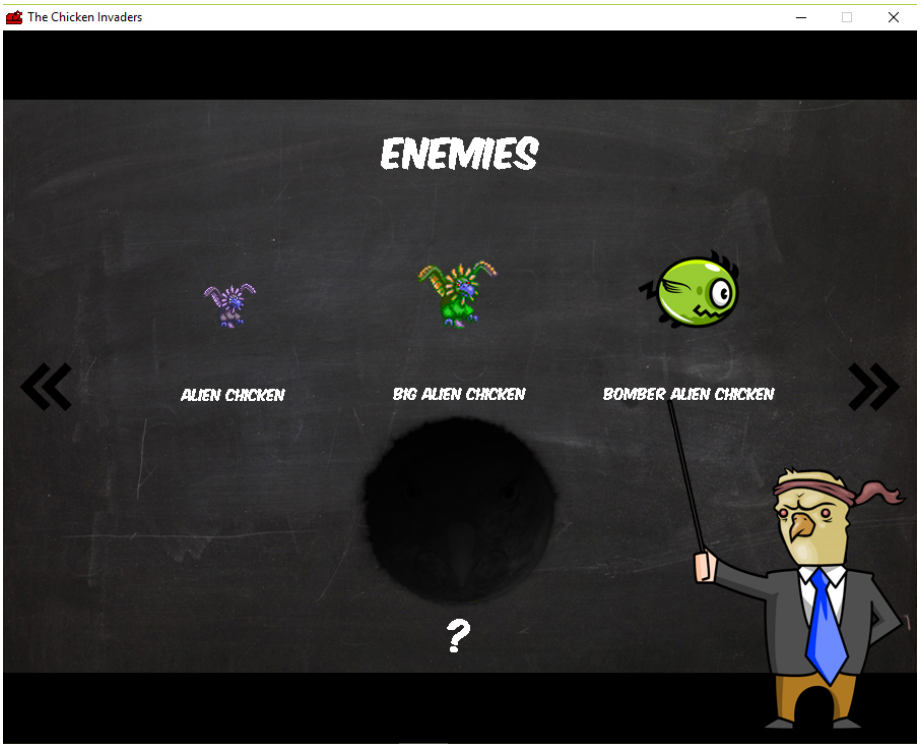

The Chicken Invaders
SCORE: 5923
AMAGE++

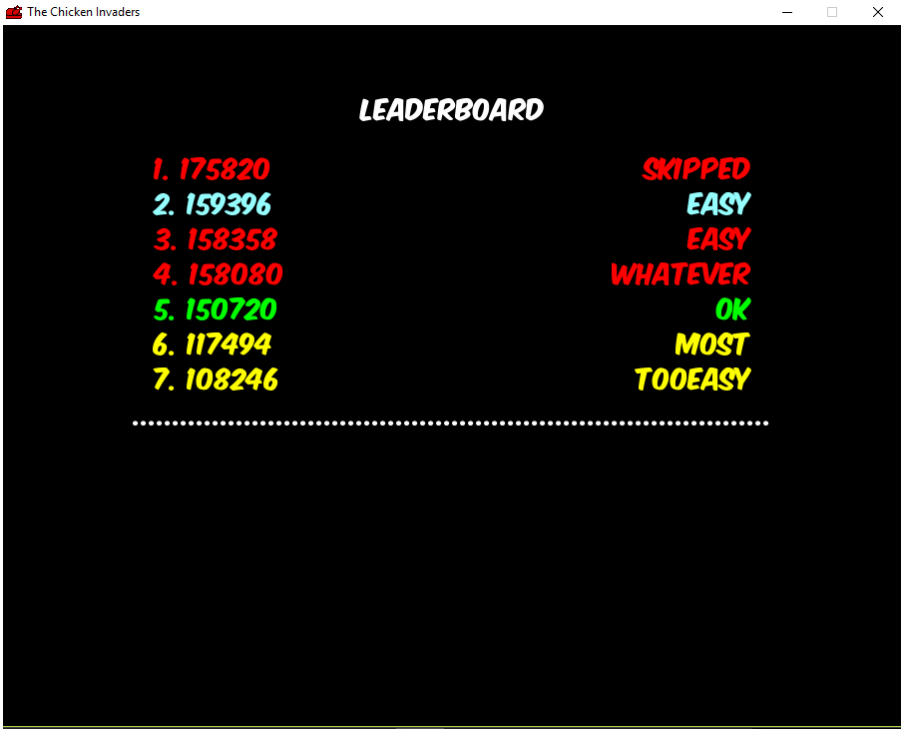

The Chicken Invaders
SCORE: 1889


The Chicken Invaders
STAGE CLEARED
BONUS: 626
-MIDDLE MOUSE TO SKIP-
SCORE: 25898


The Chicken Invaders
SCORE: 148080


The Chicken Invaders
STAGE CLEARED
BONUS: 6780
-MIDDLE MOUSE TO SKIP
SCORE: 151300


The Chicken Invaders
ENEMIES
ALIEN CHICKEN
BIG ALIEN CHICKEN
BOMBER ALIEN CHICKEN
?


The Chicken Invaders
LEADERBOARD
1. 175820 SKIPPED
2. 159396 EASY
3. 158358 EASY
4. 158080 WHATEVER
5. 150720 OK
6. 117494 MOST
7. 108246 TOOEASY

Source code

```
#Main.py
from TheChickenInvaders import *
def main():
    TheChickenInvaders().main()
main()
```

```
#TheChickenInvaders.py
import pygame
from constants import *
from Menus import *

class TheChickenInvaders(object):
    def __init__(self):
        pygame.init()
        pygame.display.set_caption("The Chicken Invaders")

pygame.display.set_icon(pygame.image.load("Resources\\Generals\\redicon.png"))
        pygame.mixer.init()


        self.screen = pygame.display.set_mode([SCREEN_WIDTH,SCREEN_HEIGHT])


    def main(self):
        StartScreen(self.screen).main()
```

```
#Menus.py
import pygame
import sys
import random

import GameLoop
import Instruction
import Ranking

from constants import *

from Buttons import *
from Doors import *

class StartScreen(object):
    def __init__(self, screen):
        self.screen = screen
        self.clock = pygame.time.Clock()
        self.done = False
        pygame.mixer.music.load("Resources\\Musics\\intro.mp3")
        pygame.mixer.music.play()
```

```
        self.startImages =
[pygame.image.load("Resources\\Menus\\sun1.jpg"),

pygame.image.load("Resources\\Menus\\sun2.jpg"),

pygame.image.load("Resources\\Menus\\sun3.jpg"),

pygame.image.load("Resources\\Menus\\sun4.jpg")]


    def eventsInput(self):
        for event in pygame.event.get():
            if event.type == pygame.MOUSEBUTTONDOWN:
                return True
            if event.type == pygame.QUIT:
                pygame.quit()
                sys.exit()


    def main(self):
        index = 0
        counter = 0
        done = False
```

```
        while not done:
            done = self.eventsInput()
            self.screen.blit(self.startImages[index], (0,(700 -
563)//2))
            if counter >= 15:
                index = (index + 1) % 4
                counter = 0
            counter += 1
            self.clock.tick(60)
            pygame.display.update()
        MainMenu(self.screen).main()
```

```
class MainMenu(object):
    def __init__(self, screen):
        pygame.mouse.set_visible(True)
        if pygame.mixer.music.get_busy():
            pygame.mixer.music.fadeout(4000)

        self.screen = screen
        self.clock = pygame.time.Clock()
        self.index = 0
        self.counter = 0
        self.images =
[pygame.image.load("Resources\\Menus\\default.jpg"),

pygame.image.load("Resources\\Menus\\flashing.jpg")]

        self.done = False
        self.choice = 0
        self.alreadyClick = False
```

```
        self.buttonList = pygame.sprite.Group()
        self.playBut = PlayButton(900 * 0.63, 68.5 + (563 * 0.2),
self.buttonList)
        self.learnBut = LearnButton(900 * 0.63, 68.5 + (563 *
0.45), self.buttonList)
        self.rankingBut = RankingButton(900 * 0.63, 68.5 + (563 *
0.7), self.buttonList)
        self.quitBut = QuitButton(900 * 0.1, 68.5 + (563 * 0.7),
self.buttonList)


        self.doorList = pygame.sprite.Group()
        self.upperDoor = UpperDoor(self.doorList)
        self.lowerDoor = LowerDoor(self.doorList)


        self.mouseX = 0
        self.mouseY = 0


    def eventsInput(self):
        self.mouseX, self.mouseY = pygame.mouse.get_pos()
        for event in pygame.event.get():
            if event.type == pygame.MOUSEBUTTONDOWN:
                self.processChoice()
```

```
            if event.type == pygame.QUIT:
                pygame.quit()
                sys.exit()

    def processChoice(self):
        if self.choice:
            self.alreadyClick = True
            self.upperDoor.playSound()

    def displayFrame(self):
        self.screen.fill(BLACK)
        self.screen.blit(self.images[self.index],
[0,(SCREEN_HEIGHT -
self.images[self.index].get_height())//2])
        self.buttonList.draw(self.screen)
        self.doorList.draw(self.screen)
        pygame.display.update()

    def runLogic(self):
        self.counter += random.randint(0,2)
        if self.counter % 50 == 0 or self.counter % 51 == 0 or \
           self.counter % 60 == 0 or self.counter % 61 == 0 or \
```

```
        self.counter % 62 == 0:
            self.index = 1
        else:
            self.index = 0
        if not self.alreadyClick:
            self.choice = 0
            for button in self.buttonList:
                if button.pointing:
                    self.choice = button.getChoice()
        self.buttonList.update(self)
        if self.alreadyClick:
            self.doorList.update(self)


    def main(self):
        while not self.done:
            self.eventsInput()
            self.displayFrame()
            self.runLogic()
            self.clock.tick(60)
```

```
        if self.choice == "Quit":
            pygame.quit()
            sys.exit()
        elif self.choice == "Play":
            CharacterSelect(self.screen).main()
        elif self.choice == "Learn":
            Instruction.Instruction(self.screen).main()
        elif self.choice == "Ranking":
            Ranking.Ranking(self.screen).main()


class CharacterSelect(object):
    def __init__(self, screen):
        self.screen = screen
        self.clock = pygame.time.Clock()
        self.done = False
        self.playerClass = 1

        self.moveOn = False

        self.allSpriteList = pygame.sprite.Group()
```

```
        self.lowerDoor = SpecialLowerDoor(self.allSpriteList)
        self.upperDoor = SpecialUpperDoor(self.allSpriteList)


        self.tempBackground =
pygame.image.load("Resources\\Generals\\level1.jpg")
        self.mask =
pygame.image.load("Resources\\Generals\\background.png")
        self.leftArrow =
pygame.image.load("Resources\\Generals\\arrow14.png")
        self.rightArrow = pygame.transform.flip(self.leftArrow,
True, False)


        self.stats =
[pygame.image.load("Resources\\Stats\\1stat.png"),
                    pygame.image.load("Resources\\Stats\\2stat.png"),
                    pygame.image.load("Resources\\Stats\\3stat.png"),
                    pygame.image.load("Resources\\Stats\\4stat.png")]



        self.mouseX = 0
        self.mouseY = 0
```

```
    def logics(self):
        if self.moveOn:
            self.allSpriteList.update(self)

    def eventsInput(self):
        self.mouseX, self.mouseY = pygame.mouse.get_pos()
        for event in pygame.event.get():
            if event.type == pygame.QUIT:
                self.done = True
                pygame.quit()
                sys.exit()
            if event.type == pygame.MOUSEBUTTONDOWN:
                if self.mouseX < 10 + self.leftArrow.get_width():
                    if self.playerClass > 1:
                        self.playerClass -= 1
                elif self.mouseX > SCREEN_WIDTH -
self.leftArrow.get_width() - 10:
                    if self.playerClass < 4:
                        self.playerClass += 1
                else:
                    self.processChoice()
```

```
            if event.type == pygame.KEYDOWN:
                if event.key == pygame.K_LEFT:
                    if self.playerClass > 1:
                        self.playerClass -= 1
                elif event.key == pygame.K_RIGHT:
                    if self.playerClass < 4:
                        self.playerClass += 1

    def processChoice(self):
        self.moveOn = True
        self.upperDoor.playSound()

    def displayFrame(self):
        self.screen.blit(self.tempBackground, [10, 10])
        self.screen.blit(self.mask, [0, 0])
        self.allSpriteList.draw(self.screen)
        if not self.moveOn:
            self.screen.blit(self.stats[self.playerClass - 1], [0, 0])
            if self.playerClass != 1:
                self.screen.blit(self.leftArrow, [10,
SCREEN_HEIGHT//2 - self.leftArrow.get_height()//2])
```

```
            if self.playerClass != 4:
                self.screen.blit(self.rightArrow, [SCREEN_WIDTH -
self.rightArrow.get_width() - 10,
                                                   SCREEN_HEIGHT//2 -
self.leftArrow.get_height()//2])
        pygame.display.update()


    def main(self):
        while not self.done:
            self.eventsInput()
            self.displayFrame()
            self.logics()
            self.clock.tick(60)
        GameLoop.GameLoop(self.screen, self.playerClass).main()
```

```
#GameLoop.py
import pygame

import Menus
import shortcuts

from Game import *
from BossBattle import *

class GameLoop(object):
    def __init__(self, screen, playerClass):
        self.screen = screen
        self.playerClass = playerClass

        self.gameOver = False
        self.mainScore = 0
        self.mainVolume = True
        self.musicPlayed = []
```

```
        self.mutables = [self.gameOver,
                         self.mainScore,
                         self.mainVolume,
                         self.musicPlayed]


    def main(self):
        for i in range(1, 6):
            shortcuts.GameConstructor().get(i, self.screen,
self.playerClass, self.mutables).main()
            self.gameOver = self.mutables[0]
            if self.gameOver:
                Menus.MainMenu(self.screen).main()
        if not self.gameOver:
            BossBattle(self.screen, self.playerClass,
self.mutables).main()
```

```
#Game.py
import pygame
import sys
import random

import shortcuts

from constants import *

from Enemies import *
from Items import *
from Hazards import *
from Projectiles import *

class Game(object):
    def __init__(self, screen,
                 playerClass, mutables,
                 chickenPerLine, chickenNum,
chickenFrequency,
                 bigChickNum, bigChickFrequency,
```

```
            meteorNum, boxNum,
            bomberLeft, bomberRight,
            picName):

        self.screen = screen
        self.clock = pygame.time.Clock()
        self.mouseX, self.mouseY =
pygame.mouse.get_pos()

        self.mutables = mutables
        self.gameOver = self.mutables[0]
        self.score = self.mutables[1]
        self.volume = self.mutables[2]
        self.musicPlayed = self.mutables[3]

        self.bonusScore = 0
        self.win = False
        self.pause = False
        self.done = False
        self.broken = False
```

```
self.lost = False

self.chickenPerLine = chickenPerLine
self.chickenNum = chickenNum
self.bigChickNum = bigChickNum
self.meteorNum = meteorNum
self.boxNum = boxNum

self.bomberLeft = bomberLeft
self.bomberRight = bomberRight

self.chickenFrequency = chickenFrequency
self.bigChickFrequency = bigChickFrequency

self.enemyList = pygame.sprite.Group()
self.bulletList = pygame.sprite.Group()
self.boxList = pygame.sprite.Group()
self.itemList = pygame.sprite.Group()
self.hazardList = pygame.sprite.Group()
self.fireworkList = pygame.sprite.Group()
```

```
        self.allSpriteList = pygame.sprite.Group()


        self.picName = picName
        self.spaceBG = pygame.image.load(self.picName)
        self.HUD =
pygame.image.load("Resources\\Generals\\background.pn
g")
        self.pausemask =
pygame.image.load("Resources\\Generals\\pausing.png")
        self.heart =
pygame.image.load("Resources\\Generals\\heart.png")
        self.clear =
pygame.image.load("Resources\\Generals\\clear.png")
        self.broke =
pygame.image.load("Resources\\Generals\\broken.png")


        self.index = 0
        self.gameOverPics =
[pygame.image.load("Resources\\Generals\\gonone.png"),

pygame.image.load("Resources\\Generals\\goquit.png"),
```

```
pygame.image.load("Resources\\Generals\\goretry.png")]


        self.volOn =
pygame.image.load("Resources\\Generals\\volumeon.png
")
        self.volOff =
pygame.image.load("Resources\\Generals\\volumeoff.png
")


        self.loseSound =
pygame.mixer.Sound("Resources\\Sounds\\lose.wav")


        if not pygame.mixer.music.get_busy():
            self.trackNum = random.randint(0, 11)
            while self.trackNum in self.musicPlayed:
                self.trackNum = random.randint(0, 11)

pygame.mixer.music.load("Resources\\Musics\\track" +
str(self.trackNum) + ".mp3")
            pygame.mixer.music.play(-1, 0.0)
```

```
            self.mutables[3] = self.mutables[3] +
[self.trackNum]


        self.font =
pygame.font.Font("Resources\\Generals\\font.ttf", 25)


        for i in range(self.chickenNum):
            for j in range(self.chickenPerLine):
                chick = Chicken((i + 1) * -
self.chickenFrequency, self.enemyList, self.allSpriteList)


        for i in range(self.bigChickNum):
            bigchick = BigChick((i + 1) * -
self.bigChickFrequency, self.enemyList,
self.allSpriteList)


        if self.bomberRight > 0:
            self.bomber = Bomber(self.bomberLeft,
self.bomberRight, self.allSpriteList)


        for i in range(self.boxNum):
```

```
            box = Box((i + 1) * random.randint(-600,-400),
self.boxList, self.allSpriteList)


        for i in range(self.meteorNum):
            self.meteor = Meteor(self.hazardList,
self.allSpriteList)


        for i in range(6):
            firework = Firework(self.fireworkList)


        self.playerClass = playerClass
        self.player =
shortcuts.PlayerDict().get(self.playerClass,
self.allSpriteList)


    def processEvents(self):
        self.mouseX, self.mouseY =
pygame.mouse.get_pos()
        for event in pygame.event.get():
            if event.type == pygame.QUIT:
                pygame.quit()
```

```
                sys.exit()
            if event.type ==
pygame.MOUSEBUTTONDOWN:
                if SCREEN_WIDTH - self.volOn.get_width() -
20 < self.mouseX < SCREEN_WIDTH - 20 and \
                    SCREEN_HEIGHT - self.volOn.get_height()
- 20 < self.mouseY < SCREEN_HEIGHT - 20:
                    self.volume = not self.volume

pygame.mixer.music.set_volume(float(self.volume))
                else:
                    if self.win:
                        if event.button == 2:
                            if pygame.mixer.music.get_busy():
                                pygame.mixer.music.stop()
                            if self.bonusScore > 0:
                                self.score += self.bonusScore
                            self.done = True
                    if self.gameOver:
                        if self.index == 1:
                            self.done = True
```

```
elif self.index == 2:
    self.mutables[2] = self.volume
    if self.__class__.__name__ == "Game":
        self.mutables[1] -= 3000
        self.__init__(self.screen,
                      self.playerClass,
                      self.mutables,
                      self.chickenPerLine,
                      self.chickenNum,
                      self.chickenFrequency,
                      self.bigChickNum,
                      self.bigChickFrequency,
                      self.meteorNum,
                      self.boxNum,
                      self.bomberLeft,
                      self.bomberRight,
                      self.picName)
```

```
                    elif self.__class__.__name__ ==
"BossBattle":
                        self.__init__(self.screen,
self.playerClass, self.mutables)

                elif event.button == 1:
                    self.player.firing = True
                elif event.button == 3:
                    self.player.special(self)


            elif event.type == pygame.MOUSEBUTTONUP:
                if event.button == 1:
                    self.player.firing = False

            if event.type == pygame.KEYDOWN:
                if event.key == pygame.K_p:
                    if self.pause:
                        pygame.mouse.set_pos([self.player.rect.x
+ self.player.rect.width//2,
```

```
                                    self.player.rect.y +
self.player.rect.height//2])
                self.pause = not self.pause


    def runLogic(self):
        if self.player.inBound and not self.pause and not
self.gameOver:
            pygame.mouse.set_visible(False)
        else:
            pygame.mouse.set_visible(True)

        if not self.pause:
            if len(self.enemyList) == 0 and not self.gameOver:
                self.win = True
            elif self.player.health <= 0:
                self.gameOver = True

            if self.win:
                if pygame.mixer.music.get_busy():
                    pygame.mixer.music.fadeout(2000)
```

```
        for thing in self.hazardList:
            thing.kill()
        for box in self.boxList:
            box.kill()
        try:
            self.bomber.kill()
        except AttributeError:
            pass

        self.fireworkList.update(self)
        if self.bonusScore > 0:
            self.bonusScore -= 10
            self.score += 10

    elif self.gameOver:
        if 10 < self.mouseX < 300:
            self.index = 1
        elif 300 < self.mouseX < 590:
            self.index = 2
```

```
                else:
                    self.index = 0
                if not self.lost and self.volume:
                    pygame.mixer.Sound.play(self.loseSound)
                self.lost = True


            else:
                self.bonusScore = self.score *
self.player.health//100

            self.allSpriteList.update(self)

            if len(self.fireworkList) == 0 and self.bonusScore
< 0:
                self.done = True

    def displayFrame(self):
        self.screen.blit(self.spaceBG, [10,10])
        self.allSpriteList.draw(self.screen)
        self.fireworkList.draw(self.screen)
```

```
        self.screen.blit(self.HUD, [0,0])

        if self.volume:
            currentVol = self.volOn
        else:
            currentVol = self.volOff

        self.screen.blit(currentVol, [SCREEN_WIDTH - 84,
                                      SCREEN_HEIGHT - 84])

        text = self.font.render("score: " + str(int(self.score)),
True, WHITE)
        x = 625
        y = (SCREEN_HEIGHT//3 - text.get_height()//2)
        self.screen.blit(text,[x,y])

        for i in range(self.player.health):
            self.screen.blit(self.heart, (625 + (i * 32),
SCREEN_HEIGHT*2//3 - self.heart.get_height()//2))
```

```
        tempCol = WHITE
        if self.player.haveSpecial:
            if random.randint(0,1):
                tempCol = RED
            textStr = "special ready!"
            text = self.font.render(textStr, True, tempCol)
            x = 625
            y = (SCREEN_HEIGHT//2 - text.get_height()//2)
            self.screen.blit(text,[x,y])


        try:
            if not self.boss.mad:
                self.screen.blit(self.bossQuote, [self.boss.rect.x
+ self.boss.rect.width*2//3,
                                                  self.boss.rect.y +
self.boss.rect.height*2//3])
            pygame.draw.rect(self.screen, self.boss.color, (50,
20, self.boss.health//40, 20))
        except:
            pass
```

```
        if self.win:
            if self.bonusScore > 0:
                scoreStr = "bonus: " + str(int(self.bonusScore))
            else:
                scoreStr = "bonus: 0"
            text = self.font.render(scoreStr, True, WHITE)
            x = (SCREEN_WIDTH//3 - text.get_width()//2)
            y = (SCREEN_HEIGHT//2 -
text.get_height()*5//2)
            self.screen.blit(text,[x,y])


            text = self.font.render("-middle mouse to skip-",
True, WHITE)
            x = (SCREEN_WIDTH//3 - text.get_width()//2)
            y = (SCREEN_HEIGHT//2 +
text.get_height()*3//2)
            self.screen.blit(text,[x,y])


            self.screen.blit(self.clear ,[300 -
self.clear.get_width()//2,100])
```

```
        elif self.gameOver:
            self.screen.blit(self.gameOverPics[self.index], [10,
10])

        if self.broken:
            self.screen.blit(self.broke, [10, 10])

        if self.pause:
            self.screen.blit(self.pausemask, [10, 10])

        pygame.display.update()
```

```
def main(self):
    while not self.done:
        self.processEvents()
        self.runLogic()
        self.displayFrame()
        self.clock.tick(60)
    self.mutables[0] = self.gameOver
    self.mutables[1] = int(self.score)
    self.mutables[2] = self.volume
```

```
#BossBattle.py
import Menus

from Game import *
from HighScore import *

class BossBattle(Game):
    def __init__(self, screen, playerClass, mutables):
        super(BossBattle, self).__init__(screen,
                                         playerClass, mutables,
                                         0, 0, 0,
                                         0, 0,
                                         1, 5,
                                         -100, -50,

"Resources\\Generals\\bossbg.jpg")

        self.bonusScore = 10000
        self.boss = Boss(self.allSpriteList)
```

```
        self.bossQuote =
pygame.image.load("Resources\\Generals\\quote.png")

    def processEvents(self):
        super().processEvents()

    def runLogic(self):
        if self.player.inBound and not self.pause and not
self.gameOver:
            pygame.mouse.set_visible(False)
        else:
            pygame.mouse.set_visible(True)

        if not self.pause:
            if not self.gameOver and not self.win:
                if self.boss.health <= 0:
                    self.win = True
                elif self.player.health <= 0:
                    self.gameOver = True
```

```
if self.win:
    for thing in self.hazardList:
        thing.kill()
    for box in self.boxList:
        box.kill()

    self.fireworkList.update(self)
    self.bonusScore -= 20
    self.score += 20

elif self.gameOver:
    if 10 < self.mouseX < 300:
        self.index = 1
    elif 300 < self.mouseX < 590:
        self.index = 2
    else:
        self.index = 0
    if not self.lost and self.volume:
        pygame.mixer.Sound.play(self.loseSound)
```

```
                self.lost = True
            self.allSpriteList.update(self)

            if len(self.fireworkList) == 0 and self.bonusScore
<= 0:
                self.done = True
    def displayFrame(self):
        super().displayFrame()
    def main(self):
        while not self.done:
            self.processEvents()
            self.runLogic()
            self.displayFrame()
            self.clock.tick(60)

        if not self.gameOver:
            HighScore(self.screen, self.playerClass, self.score,
self.volume).main()
        else:
            Menus.MainMenu(self.screen).main()
```

```
#HighScore.py
import pygame
import Menus

from constants import *
from Doors import *
from ScoreProcessor import *

class HighScore(object):
    def __init__(self, screen, playerClass, score, volume):
        self.screen = screen
        self.clock = pygame.time.Clock()

        self.score = score
        self.playerClass = playerClass

        if volume:
            winSound =
pygame.mixer.Sound("Resources\\Sounds\\win.wav")
            pygame.mixer.Sound.play(winSound)
```

```
        self.name = ""
        self.background =
pygame.image.load("Resources\\Generals\\party.jpg")
        self.font =
pygame.font.Font("Resources\\Generals\\font.ttf", 40)

        self.done = False
        self.alreadyClick = False

        self.doorList = pygame.sprite.Group()
        self.upperDoor = UpperDoor(self.doorList)
        self.lowerDoor = LowerDoor(self.doorList)

        self.mouseX, self.mouseY =
pygame.mouse.get_pos()

    def eventsInput(self):
        self.mouseX, self.mouseY =
pygame.mouse.get_pos()
        for event in pygame.event.get():
```

```
            if event.type == pygame.KEYDOWN:
                self.name += chr(event.key)
            if event.type ==
pygame.MOUSEBUTTONDOWN:
                self.processChoice()
            if event.type == pygame.QUIT:
                pygame.quit()
                sys.exit()

    def processChoice(self):
        self.alreadyClick = True
        self.upperDoor.playSound()

    def displayFrame(self):
        self.screen.fill(BLACK)
        self.screen.blit(self.background, [0, 0])
        text = self.font.render("your score: " + str(self.score),
True, WHITE)
        x = SCREEN_WIDTH//2 - text.get_width()//2
        y = SCREEN_HEIGHT*3//5 + text.get_height()//2
```

```
        self.screen.blit(text,[x,y])

        text = self.font.render("enter your name: " +
self.name, True, WHITE)
        x = SCREEN_WIDTH//2 - text.get_width()//2
        y = SCREEN_HEIGHT*4//5 - text.get_height()//2
        self.screen.blit(text,[x,y])

        self.doorList.draw(self.screen)
        pygame.display.update()

    def runLogic(self):
        if len(self.name):
            lastChar = ord(self.name[-1:])
            if lastChar == 8:
                self.name = self.name[:-2]
            elif lastChar == 13:
                self.name = self.name[:-1]
                self.processChoice()
```

```
            elif lastChar not in range(49, 58) and lastChar not
in range(65, 91) and lastChar not in range(97, 123):
                self.name = self.name[:-1]
        if self.alreadyClick:
            self.doorList.update(self)


    def main(self):
        while not self.done:
            self.displayFrame()
            self.eventsInput()
            self.runLogic()
            self.clock.tick(60)
        ScoreProcessor().writeScore(self.score,
self.name.strip(), self.playerClass)
        Menus.MainMenu(self.screen).main()
```

```
#ScoreProcessor.py
import pickle

from constants import *

class ScoreProcessor(object):
    def __init__ (self):
        self.scores = self.getScores()
        self.colors = self.getColors()

    def getScores(self):
        try:
            inFile =
open("Resources\\Documents\\highscore.dat","rb")
            self.scores = pickle.load(inFile)
            inFile.close()
        except IOError:
            return dict()
        return self.scores
```

```
    def getColors(self):
        try:
            inFile =
open("Resources\\Documents\\highscore.dat","rb")
            pickle.load(inFile)
            self.colors = pickle.load(inFile)
            inFile.close()
        except IOError:
            return dict()
        return self.colors
```

```
    def writeScore(self, score, name, playerClass):
        if playerClass == 1:
            tempCol = RED
        elif playerClass == 2:
            tempCol = GREEN
        elif playerClass == 3:
            tempCol = YELLOW
        elif playerClass == 4:
            tempCol = GREY
        else:
            tempCol = WHITE
        while score in self.scores:
            score += 1
        self.scores[score] = name
        self.colors[score] = tempCol
        outFile =
open("Resources\\Documents\\highscore.dat","wb")
        pickle.dump(self.scores, outFile)
        pickle.dump(self.colors, outFile)
        outFile.close()
```

```
#Instruction.py
import pygame

import Menus

from Enemies import *
from Doors import *

class Instruction(object):
    def __init__(self, screen):
        self.screen = screen
        self.clock = pygame.time.Clock()
        self.done = False
        self.index = 0

        self.moveOn = False

        self.chickenList = pygame.sprite.Group()
        self.allSpriteList = pygame.sprite.Group()
```

```
        self.lowerDoor = LowerDoor(self.allSpriteList)
        self.upperDoor = UpperDoor(self.allSpriteList)

        self.chicken = Chicken(0, self.chickenList)
        self.bigChick = BigChick(0, self.chickenList)
        self.bomber = Bomber(-1, SCREEN_WIDTH + 1,
self.chickenList)

        self.chicken.rect.x = 225 - self.chicken.rect.width//2
        self.chicken.rect.y = 68 + 563 * 0.4 -
self.chicken.rect.height

        self.bigChick.rect.x = 450 -
self.bigChick.rect.width//2
        self.bigChick.rect.y = 68 + 563 * 0.4 -
self.bigChick.rect.height

        self.bomber.rect.x = 675 - self.bomber.rect.width//2
        self.bomber.rect.y = 68 + 563 * 0.4 -
self.bomber.rect.height
```

```
        for chick in self.chickenList:
            chick.moveX = chick.moveY = 0
            try:
                chick.moveSlow = 0
            except AttributeError:
                continue


        self.leftArrow =
pygame.image.load("Resources\\Generals\\arrow14.png")
        self.rightArrow =
pygame.transform.flip(self.leftArrow, True, False)


        self.background =
pygame.image.load("Resources\\Generals\\blackboard.jpg
")
        self.teacher =
pygame.image.load("Resources\\Generals\\teacher.png")
        self.contents =
[pygame.image.load("Resources\\Learns\\int0.png"),

pygame.image.load("Resources\\Learns\\int1.png"),
```

```
pygame.image.load("Resources\\Learns\\int2.png")]

        self.mouseX = 0
        self.mouseY = 0

    def logics(self):
        if self.moveOn:
            self.allSpriteList.update(self)
        self.chickenList.update(self)

    def eventsInput(self):
        self.mouseX, self.mouseY =
pygame.mouse.get_pos()
        for event in pygame.event.get():
            if event.type == pygame.QUIT:
                self.done = True
                pygame.quit()
                sys.exit()
```

```
            if event.type ==
pygame.MOUSEBUTTONDOWN:
                if self.mouseX < 10 +
self.leftArrow.get_width():
                    if self.index > 0:
                        self.index -= 1
                elif self.mouseX > SCREEN_WIDTH -
self.leftArrow.get_width() - 10:
                    if self.index < 2:
                        self.index += 1
                else:
                    self.processChoice()
            if event.type == pygame.KEYDOWN:
                if event.key == pygame.K_LEFT:
                    if self.index > 0:
                        self.index -= 1
                elif event.key == pygame.K_RIGHT:
                    if self.index < 2:
                        self.index += 1
```

```
    def processChoice(self):
        self.moveOn = True
        self.upperDoor.playSound()

    def displayFrame(self):
        self.screen.fill(BLACK)
        self.screen.blit(self.background, [0, 68])
        self.screen.blit(self.contents[self.index], [0, 68])
        if self.index == 1:
            self.chickenList.draw(self.screen)
        self.screen.blit(self.teacher, [SCREEN_WIDTH -
self.teacher.get_width(),
                                        SCREEN_HEIGHT -
self.teacher.get_height()])
        if self.index != 0:
            self.screen.blit(self.leftArrow, [10,
SCREEN_HEIGHT//2 - self.leftArrow.get_height()//2])
        if self.index != 2:
            self.screen.blit(self.rightArrow,
[SCREEN_WIDTH - self.rightArrow.get_width() - 10,
SCREEN_HEIGHT//2 - self.leftArrow.get_height()//2])
```

```
    self.allSpriteList.draw(self.screen)
    pygame.display.update()

def main(self):
    while not self.done:
        self.eventsInput()
        self.displayFrame()
        self.logics()
        self.clock.tick(60)
    Menus.MainMenu(self.screen).main()
```

```
#Ranking.py
import pygame
import sys

import Menus
from ScoreProcessor import *
from Doors import *

class Ranking(object):
    def __init__(self, screen):
        self.screen = screen
        self.clock = pygame.time.Clock()
        self.index = 0
        self.counter = 0

        self.font =
pygame.font.Font("Resources\\Generals\\font.ttf", 25)

        self.done = False
        self.alreadyClick = False
```

```
        self.doorList = pygame.sprite.Group()
        self.upperDoor = UpperDoor(self.doorList)
        self.lowerDoor = LowerDoor(self.doorList)

        self.mouseX = 0
        self.mouseY = 0

        self.scores = ScoreProcessor().getScores()
        self.colors = ScoreProcessor().getColors()

        self.headers = sorted(self.scores.keys())[::-1]

    def eventsInput(self):
        self.mouseX, self.mouseY =
pygame.mouse.get_pos()
        for event in pygame.event.get():
            if event.type ==
pygame.MOUSEBUTTONDOWN:
                self.processChoice()
```

```
            if event.type == pygame.QUIT:
                pygame.quit()
                sys.exit()

    def processChoice(self):
        self.alreadyClick = True
        self.upperDoor.playSound()

    def displayFrame(self):
        self.screen.fill(BLACK)

        text = self.font.render("leaderboard", True, WHITE)
        x = SCREEN_WIDTH//2 - text.get_width()//2
        y = 60
        self.screen.blit(text, [x, y])

        for i in range(15):
            try:
                text = self.font.render(str(i + 1) + ". " +
str(self.headers[i]), True, self.colors[self.headers[i]])
```

```
                x = 150
                y = (i + 4) * 35 - text.get_height()//2
                self.screen.blit(text, [x, y])

                text =
self.font.render(self.scores[self.headers[i]], True,
self.colors[self.headers[i]])
                x = SCREEN_WIDTH - 150 - text.get_width()
                self.screen.blit(text, [x, y])
            except IndexError:
                break

        text = self.font.render("." * 80, True, WHITE)
        x = SCREEN_WIDTH//2 - text.get_width()//2
        y = (i + 4) * 35 - text.get_height()//2
        self.screen.blit(text, [x, y])

        self.doorList.draw(self.screen)
        pygame.display.update()
```

```
def runLogic(self):
    if self.alreadyClick:
        self.doorList.update(self)

def main(self):
    while not self.done:
        self.eventsInput()
        self.displayFrame()
        self.runLogic()
        self.clock.tick(60)
    Menus.MainMenu(self.screen).main()
```

```
#contants.py
BLACK = (0, 0, 0)
WHITE = (255, 255, 255)
RED = (255, 0, 0)
GREEN = (0, 255, 0)
BLUE = (0, 0, 255)
YELLOW = (255, 255, 0)
GREY = (150, 255, 255)

SCREEN_WIDTH = 900
SCREEN_HEIGHT = 700
```

```
#shortcuts.py
import Player
import Items
import Game

class PlayerDict(object):
    def __init__(self):
        self.players = {1:Player.Ship1,
                        2:Player.Ship2,
                        3:Player.Ship3,
                        4:Player.Ship4}
    def get(self, num, *group):
        return self.players.get(num)(*group)

class ItemDict(object):
    def __init__(self):
        self.items = {1:Items.PowerUp1,
                      2:Items.PowerUp2,
                      3:Items.PowerUp3,
                      4:Items.PowerUp4,
```

```
                    5:Items.PowerUp5}
    def get(self, num, *group):
        return self.items.get(num)(*group)


class GameConstructor(object):
    def __init__(self):
        self.chickenPerLine =    {1:2,    2:3,    3:4,    4:4,
5:4}
        self.chickenNum =        {1:15,   2:25,   3:30,   4:40,
5:50}
        self.chickenFrequency =  {1:300,  2:300,  3:300,
4:300,  5:300}
        self.bigChickNum =       {1:0 ,   2:3,    3:4,    4:7,
5:12}
        self.bigChickFrequency = {1:1500,  2:1500, 3:1500,
4:1000, 5:750}
        self.meteorNum =         {1:0 ,   2:1,    3:1,    4:1,
5:1}
        self.boxNum =            {1:2 ,   2:2,    3:2,    4:3,
5:3}
```

```
        self.bomberLeft =        {1:-100,  2:-100, 3:-600, 4:-
500, 5:-400}
        self.bomberRight =       {1:-50,   2:-50,  3:1200,
4:1100, 5:1000}
        self.picName =
{1:"Resources\\Generals\\level1.jpg",
                        2:"Resources\\Generals\\level2.jpg",
                        3:"Resources\\Generals\\level3.jpg",
                        4:"Resources\\Generals\\level4.jpg",
                        5:"Resources\\Generals\\level5.jpg"}
    def get(self, num, screen, playerClass, mutables):
        return Game.Game(screen, playerClass, mutables,
                         self.chickenPerLine[num],
self.chickenNum[num], self.chickenFrequency[num],
                         self.bigChickNum[num],
self.bigChickFrequency[num],
                         self.meteorNum[num],
self.boxNum[num],
                         self.bomberLeft[num],
self.bomberRight[num],
                         self.picName[num])
```

```
#Player.py
import pygame

from constants import *

from Bullets import *
from Projectiles import *
from Deaths import *

class Player(pygame.sprite.Sprite):
    def __init__(self, *group):
        super(Player, self).__init__(*group)

        self.firing = False
        self.haveSpecial = False
        self.inBound = True
        self.scoreRate = 1

        self.counter = 0
        self.index = 0
```

```
        self.bulletCounter = 20
        self.bulletLimit = 20

    def update(self, game):
        if game.gameOver:
            self.kill()
        if self.counter >= 5:
            self.index = (self.index + 1) % 2
            self.image = self.images[self.index]
            self.counter = 0
        self.counter += 1
        if game.mouseX + self.rect.width//2 < 590 and
game.mouseX - self.rect.width//2 > 10 \
            and game.mouseY - self.rect.height//2 > 10 and
game.mouseY + self.rect.height//2 < 690:
            self.rect.x = game.mouseX - self.rect.width//2
            self.rect.y = game.mouseY - self.rect.height//2
            self.inBound = True
        else:
```

```
            self.inBound = False

        if self.firing:
            self.bulletCounter += self.fireRate
            if self.bulletCounter >= self.bulletLimit:
                self.fireBullet(game)
                self.bulletCounter = 0
        else:
            self.bulletCounter = self.bulletLimit
        self.getItem(game)

    def fireBullet(self, game):
        pass

    def special(self, game):
        pass
```

```
    def takeDamage(self, game):
        playerDeath = PlayerDeath(self, game.volume, 1,
game.allSpriteList)
        self.health -= 1


    def getItem(self, game):
        getList = pygame.sprite.spritecollide(self,
game.itemList, True)
        for item in getList:
            item.getPower(game)


class Ship1(Player):
    def __init__(self, *group):
        super(Ship1, self).__init__(*group)
        self.health = 3
        self.damage = 18
        self.fireRate = 2
        self.images =
[pygame.image.load("Resources\\Sprites\\ship11.png"),
pygame.image.load("Resources\\Sprites\\ship12.png")]
```

```
        self.image = self.images[self.index]
        self.rect = self.image.get_rect()
        self.radius = self.rect.width//2
        self.piercing = True

    def update(self, game):
        super().update(game)

    def fireBullet(self, game):
        bullet = Bullet1(self, game.volume, 1, 0,
game.bulletList, game.allSpriteList)

    def special(self, game):
        if self.haveSpecial:
            for i in range(60):
                bullet = Bullet1(self, game.volume, 2,
random.randint(-45,45), game.bulletList,
game.allSpriteList)
                bullet.speed = random.randint(25,35)
            self.haveSpecial = False
```

```
class Ship2(Player):
    def __init__(self, *group):
        super(Ship2, self).__init__(*group)
        self.health = 5
        self.damage = 10
        self.fireRate = 4
        self.images =
[pygame.image.load("Resources\\Sprites\\ship21.png"),

pygame.image.load("Resources\\Sprites\\ship22.png")]
        self.image = self.images[self.index]
        self.rect = self.image.get_rect()
        self.radius = self.rect.width//2
        self.piercing = False


        self.specialCounter = 0
        self.branch = 1
```

```
    def update(self, game):
        super().update(game)
        if self.branch > 1:
            self.specialCounter += 1
        if self.specialCounter > 150:
            self.branch -= 1
            self.specialCounter = 0

    def fireBullet(self, game):
        for i in range(2):
            for j in range(-self.branch + 1, self.branch):
                bullet = Bullet2(self, game.volume, not i and
not j, (self.rect.x + 7 + (i * 43)), (j * 20),
                                 game.bulletList, game.allSpriteList)

    def special(self, game):
        if self.haveSpecial:
            self.branch += 1
            self.haveSpecial = False
```

```
class Ship3(Player):
    def __init__(self, *group):
        super(Ship3, self).__init__(*group)
        self.health = 4
        self.damage = 15
        self.fireRate = 3
        self.images =
[pygame.image.load("Resources\\Sprites\\ship31.png"),

pygame.image.load("Resources\\Sprites\\ship32.png")]
        self.image = self.images[self.index]
        self.rect = self.image.get_rect()
        self.radius = self.rect.width//2
        self.piercing = False

    def update(self, game):
        super().update(game)
```

```
    def fireBullet(self, game):
        bullet = Bullet3(self, game.volume, 1, 0,
game.bulletList, game.allSpriteList)


    def special(self, game):
        if self.haveSpecial:
            missile = Missile(self, game.volume,
game.allSpriteList)
            self.haveSpecial = False


class Ship4(Player):
    def __init__(self, *group):
        super(Ship4, self).__init__(*group)
        self.health = 4
        self.damage = 25
        self.fireRate = 1
        self.images =
[pygame.image.load("Resources\\Sprites\\ship41.png"),

pygame.image.load("Resources\\Sprites\\ship42.png")]
        self.image = self.images[self.index]
```

```
        self.rect = self.image.get_rect()
        self.radius = self.rect.width//2
        self.piercing = True

        self.specialCounter = 0

    def update(self, game):
        if game.gameOver:
            self.kill()
        self.image = self.images[int(self.firing)]
        pos = pygame.mouse.get_pos()
        if game.mouseX + self.rect.width//2 < 590 and
game.mouseX - self.rect.width//2 > 10 \
            and game.mouseY - self.rect.height//2 > 10 and
game.mouseY + self.rect.height//2 < 690:
            self.rect.x = game.mouseX - self.rect.width//2
            self.rect.y = game.mouseY - self.rect.height//2
            self.inBound = True
        else:
            self.inBound = False
```

```
if self.firing:
    self.bulletCounter += self.fireRate
    if self.bulletCounter >= self.bulletLimit:
        self.fireBullet(game)
        self.bulletCounter = 0
else:
    self.bulletCounter = self.bulletLimit

if self.fireRate >= 100:
    self.specialCounter += 1
if self.specialCounter >= 150:
    self.fireRate = 2
    self.specialCounter = 0

self.getItem(game)
```

```
    def fireBullet(self, game):
        if self.fireRate < 100:
            bullet = Bullet4(self, game.volume, 1, 0,
game.bulletList, game.allSpriteList)
        else:
            bullet = Bullet4(self, game.volume, 2,
random.randint(-5,5), game.bulletList, game.allSpriteList)

    def special(self, game):
        if self.haveSpecial:
            self.fireRate += 100
            self.haveSpecial = False
```

```
#Bullets.py
import pygame
import random
import math

class Bullet(pygame.sprite.Sprite):
    def __init__(self, bend, piercing, *group):
        super(Bullet, self).__init__(*group)
        self.bend = bend
        self.piercing = piercing

    def update(self, game):
        try:
            self.rect.y -= math.cos(self.bend * math.pi / 180) *
self.speed
            self.rect.x += math.tan(self.bend * math.pi / 180)
* self.speed
        except:
            self.bend += 1
```

```
            self.rect.y -= math.cos(self.bend * math.pi / 180) *
self.speed
            self.rect.x += math.tan(self.bend * math.pi / 180)
* self.speed


        if self.rect.y <= -self.rect.height:
            self.kill()


class Bullet1(Bullet):
    def __init__(self, ship, volume, soundType, bend = 0,
*group):
        super(Bullet1, self).__init__(bend, ship.piercing,
*group)


        self.speed = 30


        self.image =
pygame.image.load("Resources\\Sprites\\bullet1.png")
        self.image = pygame.transform.rotate(self.image, -
self.bend)
        self.rect = self.image.get_rect()
```

```
        self.rect.x = ship.rect.x + ship.rect.width//2 -
self.rect.width//2
        self.rect.y = ship.rect.y + 10


        if volume:
            if soundType == 1:
                soundRandomer = random.randint(0,2)
                if soundRandomer == 0:
                    self.sound =
pygame.mixer.Sound("Resources\\Sounds\\laser.wav")
                elif soundRandomer == 1:
                    self.sound =
pygame.mixer.Sound("Resources\\Sounds\\laser2.wav")
                else:
                    self.sound =
pygame.mixer.Sound("Resources\\Sounds\\laser3.wav")
            else:
                self.sound =
pygame.mixer.Sound("Resources\\Sounds\\speciallaser.w
av")
            pygame.mixer.Sound.play(self.sound)
```

```
class Bullet2(Bullet):
    def __init__(self, ship, volume, soundType, x, bend = 0, *group):
        super(Bullet2, self).__init__(bend, ship.piercing, *group)
        self.speed = 20
        self.image = pygame.image.load("Resources\\Sprites\\bullet2.png")
        self.image = pygame.transform.rotate(self.image, -self.bend)
        self.rect = self.image.get_rect()
        self.rect.x = x
        self.rect.y = ship.rect.y + 25

        if volume:
            self.sound = pygame.mixer.Sound("Resources\\Sounds\\ak.wav")
            if soundType == 1:
                pygame.mixer.Sound.play(self.sound)
```

```
class Bullet3(Bullet):
    def __init__(self, ship, volume, soundType, bend = 0, *group):
        super(Bullet3, self).__init__(bend, ship.piercing, *group)
        self.speed = 20
        self.image = pygame.image.load("Resources\\Sprites\\bullet3New.png")
        self.image = pygame.transform.rotate(self.image, -self.bend)
        self.rect = self.image.get_rect()
        self.rect.x = ship.rect.x + ship.rect.width//2 - self.rect.width//2
        self.rect.y = ship.rect.y + 10
        if volume:
            self.sound = pygame.mixer.Sound("Resources\\Sounds\\pulse.wav")
            if soundType:
                pygame.mixer.Sound.play(self.sound)
```

```
class Bullet4(Bullet):
    def __init__(self, ship, volume, soundType, bend = 0, *group):
        super(Bullet4, self).__init__(bend, ship.piercing, *group)
        self.speed = 25
        self.image = pygame.image.load("Resources\\Sprites\\bullet4New.png")
        self.image = pygame.transform.rotate(self.image, -self.bend)
        self.rect = self.image.get_rect()
        self.rect.x = ship.rect.x + ship.rect.width//2 - self.rect.width//2
        self.rect.y = ship.rect.y + 1
        if volume:
            if soundType == 1:
                self.sound = pygame.mixer.Sound("Resources\\Sounds\\pulse.wav")
```

```
else:
            self.sound =
pygame.mixer.Sound("Resources\\Sounds\\ak.wav")
            pygame.mixer.Sound.play(self.sound)
```

```
#Items.py
import pygame
import random

import shortcuts

from constants import *

class Box(pygame.sprite.Sprite):
    def __init__(self, y, *group):
        super(Box, self).__init__(*group)
        self.image =
pygame.image.load("Resources\\Sprites\\box.png")
        self.rect = self.image.get_rect()
        self.rect.x = random.randint(10, 590 - self.rect.width)
        self.rect.y = y

    def resetPos(self):
        self.rect.x = random.randint(10, 590 - self.rect.width)
        self.rect.y = -random.randint(1400,1600)
```

```
    def update(self, game):
        self.rect.y += 4
        if self.rect.y > SCREEN_HEIGHT + 100:
            self.resetPos()
        if self.checkGotHit(game):
            self.createBonus(game)
            self.resetPos()

    def checkGotHit(self, game):
        if pygame.sprite.spritecollide(self, game.bulletList,
False):
            return True
        return False

    def createBonus(self, game):
        item = shortcuts.ItemDict().get(random.randint(1,5),
self, game.itemList, game.allSpriteList)

class Item(pygame.sprite.Sprite):
```

```
    def __init__(self, *group):
        super(Item, self).__init__(*group)
        self.tag = None

    def update(self, game):
        self.rect.y += 3

    def getPower(self, game):
        game.player.scoreRate += 0.25
        itemTag = ItemDisplay(self, self.tag, game.volume,
game.allSpriteList)

class PowerUp1(Item):
    def __init__(self, box, *group):
        super(PowerUp1, self).__init__(*group)
        self.image =
pygame.image.load("Resources\\Sprites\\getmissile.png")
        self.rect = self.image.get_rect()
        self.rect.x = box.rect.x
        self.rect.y = box.rect.y
```

```
        self.tag = "Resources\\Sprites\\missileready.png"

    def getPower(self, game):
        super().getPower(game)
        game.player.haveSpecial = True

class PowerUp2(Item):
    def __init__(self, box, *group):
        super(PowerUp2, self).__init__(*group)
        self.image =
pygame.image.load("Resources\\Sprites\\gethealth.png")
        self.rect = self.image.get_rect()
        self.rect.x = box.rect.x
        self.rect.y = box.rect.y
        self.tag = "Resources\\Sprites\\health++.png"

    def getPower(self, game):
        super().getPower(game)
        if game.player.health < 7:
            game.player.health += 1
```

```
class PowerUp3(Item):
    def __init__(self, box, *group):
        super(PowerUp3, self).__init__(*group)
        self.image =
pygame.image.load("Resources\\Sprites\\getdamage.png")
        self.rect = self.image.get_rect()
        self.rect.x = box.rect.x
        self.rect.y = box.rect.y
        self.tag = "Resources\\Sprites\\damage++.png"

    def getPower(self, game):
        super().getPower(game)
        game.player.damage += 5

class PowerUp4(Item):
    def __init__(self, box, *group):
        super(PowerUp4, self).__init__(*group)
        self.image =
pygame.image.load("Resources\\Sprites\\getfirerate.png")
```

```
        self.rect = self.image.get_rect()
        self.rect.x = box.rect.x
        self.rect.y = box.rect.y
        self.tag = "Resources\\Sprites\\firerate++.png"

    def getPower(self, game):
        super().getPower(game)
        game.player.fireRate += 1

class PowerUp5(Item):
    def __init__(self, box, *group):
        super(PowerUp5, self).__init__(*group)
        self.image =
pygame.image.load("Resources\\Sprites\\getpierce.png")
        self.rect = self.image.get_rect()
        self.rect.x = box.rect.x
        self.rect.y = box.rect.y
        self.tag1 = "Resources\\Sprites\\piercingbullet.png"
        self.tag2 = "Resources\\Sprites\\damage++.png"
```

```
    def getPower(self, game):
        game.player.scoreRate += 0.25
        if not game.player.piercing:
            game.player.damage += 1
            game.player.piercing = True
            itemTag = ItemDisplay(self, self.tag1,
game.volume, game.allSpriteList)
        else:
            game.player.damage += 5
            itemTag = ItemDisplay(self, self.tag2,
game.volume, game.allSpriteList)


class ItemDisplay(pygame.sprite.Sprite):
    def __init__(self, bonus, tag, volume, *group):
        super(ItemDisplay, self).__init__(*group)
        self.counter = 0
        self.image = pygame.image.load(tag)
        self.rect = self.image.get_rect()
        self.rect.x = bonus.rect.x + bonus.rect.width//2 -
self.rect.width//2
```

```
        self.rect.y = bonus.rect.y
        if volume:
            self.sound =
pygame.mixer.Sound("Resources\\Sounds\\coin.wav")
            pygame.mixer.Sound.play(self.sound)

    def update(self, game):
        self.rect.y -= 3
        self.counter += 1
        if self.counter >= 30:
            self.kill()
```

```
#Projectiles.py
import pygame
import random
import math

from constants import *

from Bullets import *

class Firework(Bullet):
    def __init__(self, *group):
        super(Firework, self).__init__(random.randint(-
25,25), False, *group)

        self.speed = random.randint(4,6)
        self.color = random.randint(0,2)
        self.limit = random.randint(100,200)

        self.index = 0
```

```
        self.images =
[pygame.image.load("Resources\\Fireworks\\set"+str(self.
color)+ "0.png"),

pygame.image.load("Resources\\Fireworks\\set"+str(self.
color)+ "1.png"),

pygame.image.load("Resources\\Fireworks\\set"+str(self.
color)+ "2.png"),

pygame.image.load("Resources\\Fireworks\\set"+str(self.
color)+ "3.png"),

pygame.image.load("Resources\\Fireworks\\set"+str(self.
color)+ "4.png")]



        self.image =
pygame.transform.rotate(self.images[self.index], -
self.bend)
        self.rect = self.image.get_rect()
        self.rect.x = 300
```

```
        self.rect.y = SCREEN_HEIGHT +
random.randint(25,75)


        self.runSound =
pygame.mixer.Sound("Resources\\Sounds\\fwrun.wav")
        self.crackSound =
pygame.mixer.Sound("Resources\\Sounds\\fwcrack.wav")


        self.ran = False
        self.exploded = False


    def update(self, game):
        if self.rect.y > self.limit:
            super().update(game)
            if not self.ran and self.rect.y >
SCREEN_HEIGHT:
                if game.volume:
                    pygame.mixer.Sound.play(self.runSound)
                self.ran = True
        else:
            if not self.exploded:
```

```
            if game.volume:
                pygame.mixer.Sound.play(self.crackSound)
            self.exploded = True
        self.index += 1
        self.image = self.images[self.index]
        if self.index == 4:
            self.kill()


class Missile(Bullet):
    def __init__(self, ship, volume, *group):
        super(Missile, self).__init__(0, False, *group)
        self.image =
pygame.image.load("Resources\\Sprites\\missile.png")
        self.rect = self.image.get_rect()
        self.rect.x = ship.rect.x + ship.rect.width//2 -
self.rect.width//2
        self.rect.y = ship.rect.y - 10


        self.centered = False
        self.hitted = False
```

```
        self.explodeImage =
pygame.image.load("Resources\\Sprites\\boom.png")


        self.sideMove = -3
        if self.rect.x + self.rect.width//2 < 300:
            self.sideMove = 3


        self.delayHit = 0


        if volume:
            self.initSound =
pygame.mixer.Sound("Resources\\Sounds\\cannon.wav")
            pygame.mixer.Sound.play(self.initSound)
        self.explodeSound =
pygame.mixer.Sound("Resources\\Sounds\\explosion.wav
")
    def update(self, game):
        if 290 < self.rect.x + self.rect.width//2 < 310:
            self.centered = True
        if not self.hitted:
            if not self.centered:
```

```
            self.rect.x += self.sideMove
        else:
            self.rect.y -= 8
            self.checkHitAnything(game)
    else:
        if self.delayHit > 60:
            self.kill()
        self.delayHit += 1
def checkHitAnything(self, game):
    if pygame.sprite.spritecollide(self, game.enemyList,
False) or \
       pygame.sprite.spritecollide(self, game.hazardList,
False):
        if game.volume:
            pygame.mixer.Sound.play(self.explodeSound)
        game.broken = True
        self.hitted = True
        self.rect.x -= self.explodeImage.get_width()//2 -
self.image.get_width()//2
        self.rect.y -= self.explodeImage.get_height()//2 -
self.image.get_height()//2
```

```
            self.image = self.explodeImage
            for enemy in game.enemyList:
                if enemy.rect.y > 0:
                    game.score += int(enemy.health *
game.player.scoreRate)
                    enemy.kill(game, True)
        try:
            if pygame.sprite.collide_rect(self, game.boss):
                if game.volume:

pygame.mixer.Sound.play(self.explodeSound)
                self.hitted = True
                self.rect.x -= self.explodeImage.get_width()//2 -
self.image.get_width()//2
                self.rect.y -= self.explodeImage.get_height()//2
- self.image.get_height()//2
                self.image = self.explodeImage
                game.boss.health -= game.player.damage * 50
        except AttributeError:
            pass
```

```
#Enemies.py
import pygame
import random

from constants import *

from Hazards import *
from Deaths import *

class Chicken(pygame.sprite.Sprite):
    def __init__(self, y, *group):
        super(Chicken, self).__init__(*group)

        self.moveX = random.randint(-2,2) * 3
        while self.moveX == 0:
            self.moveX = random.randint(-2,2) * 3
        self.moveY = 6
        self.health = 20
        self.slowLine = random.randint(275, 325)
        self.moveSlow = 2
```

```
        self.wingSpeed = 2

        self.index = random.randint(1,2)
        self.changer = -1
        self.counter = 0

        self.images =
[pygame.image.load("Resources\\Sprites\\chicken1.png"),

pygame.image.load("Resources\\Sprites\\chicken2.png"),

pygame.image.load("Resources\\Sprites\\chicken3.png"),

pygame.image.load("Resources\\Sprites\\chicken4.png")]

        self.image = self.images[self.index]
        self.rect = self.image.get_rect()

        self.rect.x = random.randint(11, 589 - self.rect.width)
        self.rect.y = y + random.randint(-30,30)
```

```
    def reset_pos(self):
        self.rect.y = random.randint(-300, - 20)
        self.rect.x = random.randint(10, 590 - self.rect.width)

    def update(self, game):
        if self.moveX < 0:
            self.image =
pygame.transform.flip(self.images[self.index], True,
False)
        else:
            self.image = self.images[self.index]

        if self.counter == 10:
            if self.index == 0 or self.index == 3:
                self.changer *= -1
            self.index += self.changer
            self.counter = 0
        self.counter += self.wingSpeed

        if self.rect.left < 10 or self.rect.right > 590:
```

```
            self.moveX *= -1
        self.rect.x += self.moveX
        if self.rect.y <= self.slowLine:
            self.rect.y += self.moveY
        else:
            self.rect.y += self.moveSlow

        if self.rect.y > SCREEN_HEIGHT:
            self.kill()
        if self.health <= 0:
            self.kill(game, True)

        try:
            if not game.gameOver:
                self.checkHitPlayer(game)
            self.checkGotHit(game)
        except AttributeError:
            pass

    def checkGotHit(self, game):
```

```
        for bullet in pygame.sprite.spritecollide(self,
game.bulletList, False):
            self.health -= game.player.damage
            game.score += int(game.player.damage *
game.player.scoreRate)
            if not bullet.piercing:
                bullet.kill()


    def checkHitPlayer(self, game):
        if pygame.sprite.collide_rect(self, game.player):
            self.kill(game, True)
            game.player.takeDamage(game)


    def kill(self, game = None, inScreen = False):
        super().kill()
        if inScreen:
            death = Death(self, game.volume, 1,
game.allSpriteList)


class BigChick(Chicken):
```

```
    def __init__(self, y, *group):
        super(BigChick, self).__init__(y, *group)
        self.moveY = 4
        self.health = 500
        self.slowLine = 150
        self.moveSlow = 1
        self.wingSpeed = 1
 self.images=
[pygame.image.load("Resources\\Sprites\\bigchick1.png")
,
pygame.image.load("Resources\\Sprites\\bigchick2.png"),

pygame.image.load("Resources\\Sprites\\bigchick3.png"),

pygame.image.load("Resources\\Sprites\\bigchick4.png")]
        self.rect = self.images[self.index].get_rect()
        self.rect.x = random.randint(11, 589 - self.rect.width)
        self.rect.y = y
class Bomber(Chicken):
    def __init__(self, leftBorder, rightBorder, *group):
```

```
        super(Bomber, self).__init__(random.randint(50,
150), *group)
        self.leftBorder = leftBorder
        self.rightBorder = rightBorder
        self.index = 1
        self.counter = 0
        self.changer = 1
        self.moveY = 0
        self.moveX = 10
        self.images =
[pygame.image.load("Resources\\Sprites\\bomber1.png"),

pygame.image.load("Resources\\Sprites\\bomber2.png"),

pygame.image.load("Resources\\Sprites\\bomber3.png"),

pygame.image.load("Resources\\Sprites\\bomber4.png")]

        self.image = self.images[self.index]
        self.rect = self.image.get_rect()
        self.rect.x = self.leftBorder
```

```
        self.rect.y = 100


    def update(self, game):
        self.rect.x += self.moveX


        if self.rect.right > self.rightBorder or self.rect.left <
self.leftBorder:
            self.moveX *= -1
            self.rect.y = random.randint(50, 150)
        if self.moveX < 0:
            self.image =
pygame.transform.flip(self.images[self.index], True,
False)
        else:
            self.image = self.images[self.index]
        if self.counter == 10:
            if self.index == 0 or self.index == 3:
                self.changer *= -1
            self.index += self.changer
            self.counter = 0
```

```
        self.counter += 1
        try:
            self.checkGotHit(game)
        except AttributeError:
            pass

    def checkGotHit(self, game):
        for bullet in pygame.sprite.spritecollide(self,
game.bulletList, True):
            self.createBomb(game)
            bullet.kill()

    def createBomb(self, game):
        if 10 < self.rect.x < 590 - self.rect.width:
            if len(game.hazardList) - game.meteorNum < 1:
                egg = EggBomb(self, game.volume,
game.hazardList, game.allSpriteList)
```

```
class Boss(pygame.sprite.Sprite):
    def __init__(self, *group):
        super(Boss, self).__init__(*group)
        self.health = 20000
        self.mad = False
        self.index = 0
        self.image =
pygame.image.load("Resources\\Sprites\\boss.png")
        self.cry =
pygame.image.load("Resources\\Sprites\\bosscry.png")
        self.original = self.image
        self.color = [0, 255, 0]
        self.rect = self.image.get_rect()
        self.rect.x = 300 - self.rect.width//2
        self.rect.y = 31
        self.radius = 100
        self.moveX = 0
        self.moveY = 8
        self.madSpeed = 3
```

```
        self.roundTime = 0
        self.firstMove = True

    def update(self, game):
        if self.health > 0:
            if not self.mad:
                if self.roundTime > 50:
                    self.shootFireball(game)
                    self.mad = True
                    self.firstMove = True
                    self.roundTime = 0
                    self.madSpeed += 1
                self.image = self.original
                self.moveX = 0
                self.moveY = 0

            else:
                if self.roundTime > 400 and self.rect.y < 100
and 200 < self.rect.x + self.rect.width//2 < 400:
                    self.mad = False
```

```
                self.roundTime = 0
            self.image =
pygame.transform.rotate(self.image, 90)
            if self.firstMove:
                if random.randint(0,1):
                    self.moveX = self.madSpeed
                else:
                    self.moveX = -self.madSpeed
                self.moveY = -self.madSpeed
                self.firstMove = False
            if self.rect.x + self.rect.width >= 590 or
self.rect.x <= 10:
                self.moveX *= -1
            if self.rect.y + self.rect.height >= 690 or
self.rect.y <= 10:
                self.moveY *= -1

            if not game.gameOver:
                self.checkHitPlayer(game)
```

```
            self.checkHitBullet(game)

            self.rect.x += self.moveX
            self.rect.y += self.moveY
            self.roundTime += 1
        else:
            self.image = self.cry
        self.updateColor()

    def shootFireball(self, game):
        for i in range(-2, 3):
            fireball = Fireball(self, game.volume, i * 10,
game.hazardList, game.allSpriteList)



    def checkHitPlayer(self, game):
        if pygame.sprite.collide_circle(self, game.player):
            game.player.takeDamage(game)
            self.moveX *= -1
            self.moveY *= -1
```

```
    def checkHitBullet(self, game):
        hitList = pygame.sprite.spritecollide(self,
game.bulletList, True)
        for bullet in hitList:
            if not self.mad:
                self.health -= game.player.damage
            else:
                self.health -= game.player.damage//2


    def updateColor(self):
        if self.health > 10000:
            self.color[0] = (1 - ((self.health - 10000)/10000)) *
255
        else:
            self.color[0] = 255
            self.color[1] = self.health/10000 * 255
```

```
#Hazards.py
import pygame
import math
import sys
import random

from constants import *

class Meteor(pygame.sprite.Sprite):
    index = 0
    def __init__(self, *group):
        super(Meteor, self).__init__(*group)
        self.images = []

self.images.append(pygame.image.load("Resources\\Sprites\\meteor.png"))
        for i in range(72):

self.images.append(pygame.transform.rotate(self.images[0], (i + 1)*5))
        self.image = self.images[self.index]
```

```
        self.rect = self.image.get_rect()
        self.rect.x = random.randint(10, 590 - self.rect.width)
        self.rect.y = -1000

        self.passed = False

        self.sound =
pygame.mixer.Sound("Resources\\Sounds\\meteorpass.wa
v")

    def resetPos(self):
        self.rect.x = random.randint(10, 590 - self.rect.width)
        self.rect.y -= 3000
        self.passed = False

    def update(self, game):
        self.index = (self.index + 1) % 72
        self.image = self.images[self.index]
        self.rect.y += 15
        if self.rect.y > SCREEN_HEIGHT + 100:
```

```
            self.resetPos()
        if not self.passed and self.rect.y > -50:
            if game.volume:
                self.playSound()
            self.passed = True
        if not game.gameOver:
            self.checkHitPlayer(game)
        self.checkHitBullet(game)

    def checkHitPlayer(self, game):
        if pygame.sprite.collide_rect(self, game.player):
            game.player.takeDamage(game)
            self.resetPos()

    def checkHitBullet(self, game):
        pygame.sprite.spritecollide(self, game.bulletList,
True)

    def playSound(self):
        pygame.mixer.Sound.play(self.sound)
```

```
        self.passed = True


class EggBomb(Meteor):
    def __init__(self, bomber, volume, *group):
        super(EggBomb, self).__init__(*group)
        self.image =
pygame.image.load("Resources\\Sprites\\rotten.png")


        self.rect = self.image.get_rect()
        self.rect.x = bomber.rect.x + bomber.rect.width//2 -
self.rect.width//2
        self.rect.y = bomber.rect.y


        if volume:
            self.sound =
pygame.mixer.Sound("Resources\\Sounds\\bounce.wav")
            pygame.mixer.Sound.play(self.sound)


    def update(self, game):
        self.rect.y += 15
```

```
        if self.rect.y > SCREEN_HEIGHT:
            self.kill()
        self.checkHitPlayer(game)
        self.checkHitBullet(game)

    def checkHitPlayer(self, game):
        if pygame.sprite.collide_rect(self, game.player):
            game.player.takeDamage(game)
            self.kill()

class Fireball(EggBomb):
    def __init__(self, boss, volume, bend, *group):
        super(Fireball, self).__init__(boss, False, *group)

        self.bend = bend

        self.image =
pygame.image.load("Resources\\Sprites\\fireball.png")
        self.image = pygame.transform.rotate(self.image,
self.bend)
```

```
        self.rect = self.image.get_rect()
        self.rect.x = boss.rect.x + boss.rect.width//2 -
self.rect.width//2
        self.rect.y = boss.rect.y + boss.rect.height//2 -
self.rect.height//2


        if volume:
            self.sound =
pygame.mixer.Sound("Resources\\Sounds\\fireball.wav")
            pygame.mixer.Sound.play(self.sound)


    def update(self, game):
        if self.rect.y > SCREEN_HEIGHT:
            self.kill()
        self.rect.y += math.cos(self.bend * math.pi / 180) *
15
        self.rect.x += math.tan(self.bend * math.pi / 180) *
15
        if not game.gameOver:
            self.checkHitPlayer(game)
        self.checkHitBullet(game)
```

```
#Deaths.py
import pygame
import random

class Death(pygame.sprite.Sprite):
    def __init__(self, chick, volume, soundType, *group):
        super(Death, self).__init__(*group)
        self.images = []
        for i in range(14):

self.images.append(pygame.image.load("Resources\\Explode\\"+str(i)+".png"))
        self.index = 0
        self.image = self.images[self.index]


        self.rect = self.image.get_rect()
        self.rect.x = chick.rect.x + chick.rect.width//2 - self.rect.width//2
        self.rect.y = chick.rect.y + chick.rect.height//2 - self.rect.height//2
```

```
        if volume:
            if soundType == 1:
                soundRandomer = random.randint(0,2)
                if soundRandomer == 0:
                    self.sound =
pygame.mixer.Sound("Resources\\Explode\\deathSound.
wav")
                elif soundRandomer == 1:
                    self.sound =
pygame.mixer.Sound("Resources\\Explode\\deathsound2.
wav")
                else:
                    self.sound =
pygame.mixer.Sound("Resources\\Explode\\deathsound3.
wav")

                pygame.mixer.Sound.play(self.sound)

    def update(self, game):
        self.index += 1
        self.image = self.images[self.index]
```

```
        if self.index == len(self.images) - 1:
            self.kill()


class PlayerDeath(Death):
    def __init__(self, player, volume, soundType, *group):
        super(PlayerDeath, self).__init__(player, 0,
soundType, *group)
        self.volume = volume


        self.images = []
        for i in range(20):

self.images.append(pygame.image.load("Resources\\Burs
t\\" + str(i) + ".png"))
        self.image = self.images[self.index]


        self.rect = self.image.get_rect()
        self.rect.x = player.rect.x + player.rect.width//2 -
self.rect.width//2
        self.rect.y = player.rect.y + player.rect.height//2 -
self.rect.height//2
```

```
        if self.volume:
            self.sound =
pygame.mixer.Sound("Resources\\Sounds\\crash.wav")
            pygame.mixer.Sound.play(self.sound)
```

```
#Buttons.py
import pygame
import sys

class Button(pygame.sprite.Sprite):
    def __init__(self, *group):
        super(Button, self).__init__(*group)
        self.index = 0
        self.choice = 0
        self.pointing = False

    def update(self, menu):
        try:
            if self.rect.right > menu.mouseX > self.rect.left
and self.rect.y < menu.mouseY < self.rect.y +
self.rect.height:
                self.index = 1
                self.pointing = True
            else:
                self.index = 0
```

```
                self.pointing = False
            self.image = self.images[self.index]
        except AttributeError:
            pass

    def getChoice(self):
        return self.choice

class PlayButton(Button):
    def __init__(self, x, y, *group):
        super(PlayButton, self).__init__(*group)
        self.images =
[pygame.image.load("Resources\\Menus\\playoff.png"),

pygame.image.load("Resources\\Menus\\playon.png")]
        self.image = self.images[self.index]
        self.rect = self.image.get_rect()
        self.rect.x = x
        self.rect.y = y
        self.choice = "Play"
```

```
class LearnButton(Button):
    def __init__(self, x, y, *group):
        super(LearnButton, self).__init__(*group)
        self.images =
[pygame.image.load("Resources\\Menus\\learnoff.png"),

pygame.image.load("Resources\\Menus\\learnon.png")]
        self.image = self.images[self.index]
        self.rect = self.image.get_rect()
        self.rect.x = x
        self.rect.y = y
        self.choice = "Learn"


class RankingButton(Button):
    def __init__(self, x, y, *group):
        super(RankingButton, self).__init__(*group)
        self.images =
[pygame.image.load("Resources\\Menus\\rankingoff.png"
),
```

```
pygame.image.load("Resources\\Menus\\rankingon.png")]
        self.image = self.images[self.index]
        self.rect = self.image.get_rect()
        self.rect.x = x
        self.rect.y = y
        self.choice = "Ranking"

class QuitButton(Button):
    def __init__(self, x, y, *group):
        super(QuitButton, self).__init__(*group)
        self.images =
[pygame.image.load("Resources\\Menus\\quitoff.png"),

pygame.image.load("Resources\\Menus\\quiton.png")]
        self.image = self.images[self.index]
        self.rect = self.image.get_rect()
        self.rect.x = x
        self.rect.y = y
        self.choice = "Quit"
```

```
#Doors.py
import pygame

from constants import *

class UpperDoor(pygame.sprite.Sprite):
    def __init__(self, *group):
        super(UpperDoor, self).__init__(*group)
        self.image =
pygame.image.load("Resources\\Menus\\upper.png")
        self.rect = self.image.get_rect()
        self.rect.x = 0
        self.rect.y = -self.rect.height - 10


        self.sound =
pygame.mixer.Sound("Resources\\Sounds\\doorsound.wa
v")

    def playSound(self):
        pygame.mixer.Sound.play(self.sound)
```

```
    def update(self, menu):
        self.rect.y += 20
        if self.rect.y + self.rect.height >=
menu.lowerDoor.rect.y + 20:
            menu.done = True


class LowerDoor(pygame.sprite.Sprite):
    def __init__(self, *group):
        super(LowerDoor, self).__init__(*group)
        self.image =
pygame.image.load("Resources\\Menus\\lower.png")
        self.rect = self.image.get_rect()
        self.rect.x = 0
        self.rect.y = SCREEN_HEIGHT + 10
    def playSound(self):
        pass
def update(self, menu):
        self.rect.y -= 20
```

```
class SpecialUpperDoor(UpperDoor):
    def __init__(self, *group):
        super(SpecialUpperDoor, self).__init__(*group)
        self.rect.y = 350 - self.rect.height

    def update(self, menu):
        self.rect.y -= 20
        if self.rect.y + self.rect.height < 0 and
menu.lowerDoor.rect.y > SCREEN_HEIGHT:
            menu.done = True

class SpecialLowerDoor(LowerDoor):
    def __init__(self, *group):
        super(SpecialLowerDoor, self).__init__(*group)
        self.rect.y = 350

    def update(self, menu):
        self.rect.y += 20
```