

國立虎尾科技大學
機械設計工程系-計算機程式
BG9 專題報告

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Ggame 遊戲範例改良-松鼠吃吃

老師給我們 ggame 遊戲範例並且要我們自行研究改良當作專題作業,於是參考了每個範例,經過思考許久後,以下為講解過程。

導入老師給的 ggame 範例模組

```
@language python
from random import random, randint
from ggame import (
    App,
    Color,
    LineStyle,
    Sprite,
    RectangleAsset,
    ImageAsset,
    CircleAsset,
    EllipseAsset,
    PolygonAsset,
    Frame,
    MouseEvent,
    SoundAsset,
    Sound,
    TextAsset,
)
import math
from time import time
```

設定方位(設定方向的函數及變數)

```
up = 0
down = 0
right = 0
left = 0
pg = 0
gg = 0
```

```
def w(event):
    global up
    global down
    global right
    global life
    global pg
    pg = 4
    up = 1
    down = 0
    right = 0
    life = 0
```

```
def s(event):
    global up
    global down
    global right
    global life
    global pg
    pg = 1
    up = 0
    down = 1
    right = 0
    life = 0
```

```
def d(event):
    global up
    global down
    global right
    global life
    global pg
    pg = 0
    up = 0
    down = 0
    right = 1
    life = 0
```

```
def a(event):
    global up
    global down
    global right
    global life
    global pg
    pg = 4
    up = 0
    down = 0
    right = 0
    life = 1
```

為後續設定的前置作業

物件設定

```
class GG(Sprite):
    .....
    asset = ImageAsset("images/pass.png")
    .....
    def __init__(self, position):
        super().__init__(GG.asset, position)
        self.scale = 1
        self.visible = False
    .....
    def step(self):
        if gg:
            self.visible = True
```

要插入一個物件前面必須加上

class 定義一個類別名稱，**def**

__init__(self):

這邊代表宣告時會自動執行的
函式。

```

class G(Sprite):
.....
    asset = ImageAsset("images/x.png")
.....
    def __init__(self, position):
        super().__init__(G.asset, position)
        self.scale = 0.5

```

上圖的 `self.scale = 0.5` 0.5 為變數可以調整大小

```

def step(self):
    if random() < 0.1:
        self.x += randint(-25,25)
        self.y += randint(-25,25)

```

上圖的 `self.x += randint(-25,25)`，其中括弧內為變數，可以
調整跳動範圍

```

class Bunny(Sprite):
.....
    asset = ImageAsset("images/rat.png",Frame(0,0,500,500), 1)
.....
    def __init__(self, position):
        super().__init__(Bunny.asset, position)
        App.listenKeyEvent('keydown', 'w', w)
        App.listenKeyEvent('keydown', 's', s)
        App.listenKeyEvent('keydown', 'd', d)
        App.listenKeyEvent('keydown', 'a', a)
        self.scale = 0.3

```

上圖定義 `w a s d` 為按鍵 為前置作業的後續作業

```

def step(self):
    global up
    global down
    global right
    global life
    global pg
    global gg
    self.G = app.G
    if up and self.y > 0:
        self.setImage(pg)
        self.y -= 10
    if down and self.y < 770:
        self.setImage(pg)
        self.y += 10
    if right and self.x < 1710:
        self.setImage(pg)
        self.x += 10
    if life and self.x > 0:
        self.setImage(pg)
        self.x -= 10
    if self.G.x + self.G.width >= self.x >= self.G.x and self.G.y + self.G.height >= self.y >= self.G.y:
        self.visible = False
        gg = 1

```

```

class A(Sprite):

```

```

    asset = ImageAsset("images/food.png")
.....
    def __init__(self, position):
        super().__init__(A.asset, position)
        self.scale = 0.08

```

```

.....
    def step(self):
        self.Bunny = app.Bunny
        if self.Bunny.x + self.Bunny.width >= self.x >= self.Bunny.x and self.Bunny.y + self.Bunny.height >=
self.y >= self.Bunny.y:
            self.visible = False

```

```

class AA(Sprite):

```

```

    asset = ImageAsset("images/food.png")
.....
    def __init__(self, position):
        super().__init__(AA.asset, position)
        self.scale = 0.15

```

```

.....
    def step(self):
        self.Bunny = app.Bunny
        if self.Bunny.x + self.Bunny.width >= self.x >= self.Bunny.x and self.Bunny.y + self.Bunny.height >=
self.y >= self.Bunny.y:
            self.visible = False
            self.Bunny.scale = 0.5

```

```

.....
class Bg(Sprite):

```

```

    asset = ImageAsset("images/white.png")
.....
    def __init__(self, position):
        super().__init__(Bg.asset, position)

```

```

.....
    def step(self):
        self.x = 0
        self.y = 0

```

```

class DemoApp(App):

    def __init__(self):
        super().__init__()
        Bg((self.width/2, self.height/2))
        for i in range(10):
            A((randint(50,1680),randint(50,750)))
        for c in range(10):
            AA((randint(50,1680),randint(50,750)))
        self.Bunny = Bunny((50,50))
        self.G = G((840, 250))
        self.GG = GG((740, 250))

    def step(self):
        for bunny in self.spritelist:
            bunny.step()

app = DemoApp()....
app.run()

```

上圖為啟動程式參數，讓程式可以順利執行及圖片定位位置。

