

13006107

Python Project

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SE

IC

KMITL

Project Proposal

1. Project Developer

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2. Project Title : Drowning Shark

3. Project Description and Functions

“Drowning Shark” is the game that play for fun and compete with friends. This game your shark character will jumping to a platform. Using spacebar to jump, you don't need to press spacebar every time , just press it when you start, ← for move left and → for move right, but be careful if you don't land on the

platform you will die and your score will be stored. After that the game will restart, you can view your high score on the right corner of the game window.

4.Project Requirements

This project use pygame

CODE:

```
from pygame import *
import random

window_x = 500
window_y = 550

init()
window = display.set_mode((window_x, window_y))
display.set_caption('Drowning Shark!')
clock = time.Clock()
background_image = image.load('gamebg2copy.jpg').convert_alpha()
bar_image = image.load('bar.png').convert_alpha()
bg2 = -550
start = image.load('start.png').convert_alpha()
music = mixer.music.load('bg.ogg')
mixer.music.play(-1)

class Shark:
    def __init__(self):
        self.fall = image.load('avatar.png').convert_alpha()
        self.jumping_right = image.load('avatar.png').convert_alpha()
        self.jumping_left = transform.flip(self.jumping_right, True, False)
        self.stand = image.load('avatar.png').convert_alpha()

        self.reset()

    def reset(self):
```

```
self.speed_x = 0
self.speed_y = 0
self.max_speed_x = 5
self.max_speed_y = 15
self.x_acceleration = 0.5
self.img = self.jumping_right
self.jump_speed = 15
self.mob_timer = 0
```

```
scale = 7
self.width, self.height = 7 * scale, 12 * scale
self.scale = scale
```

```
self.x = (window_x - self.width) / 2
self.y = window_y - self.height
```

```
def update(self,p):
    self.side_control()
    self.physics(p)
    self.move()
    self.show()
```

```
self.x += self.speed_x
self.y -= self.speed_y
```

```
return (self.img, (self.x, self.y, self.width, self.height))
```

```
def physics(self, p):
```

```
    on = False
```

```
for colour, rect in p:
```

```
    x,y,w,h = rect
```

```
    #X range
```

```
    if self.x + self.width / 2 > x and self.x - self.width / 2 < x + w:
```

```
        #Y range
```

```
        if self.y + self.height >= y and self.y + self.height <= y + h:
```

```
            if self.speed_y < 0:
```

```
                on = True
```

```
if not on and not self.y >= window_y - self.height:
```

```
    self.speed_y -= 0.5
```

```
elif on:
```

```
    self.speed_y = self.jump_speed
```

```
else:
```

```
    self.y = window_y - self.height
```

```
    self.speed_x = 0
```

```
    self.speed_y = 0
```

```
    if self.x != (window_x - self.width) / 2:
```

```
        if self.x > (window_x - self.width) / 2:
```

```
            self.x = max((window_x - self.width) / 2, self.x - 6)
```

```
        else:
```

```
            self.x = min((window_x - self.width) / 2, self.x + 6)
```

```
    else:
```

```
        keys = key.get_pressed()
```

```
        if keys[K_SPACE]:
```

```
            self.speed_y = self.jump_speed
```

```
def side_control(self):
```

```

if self.x + self.width < 0:
    self.x = window_x - self.scale
if self.x > window_x:
    self.x = -self.width

def show(self):
    if self.speed_y > 0:
        if self.speed_x > 0: self.img = self.jumping_right
        elif self.speed_x < 0: self.img = self.jumping_left
    else:
        self.img = self.fall

def slow_character(self):
    if self.speed_x < 0:
        self.speed_x = min(0, self.speed_x + self.x_acceleration / 6)
    if self.speed_x > 0:
        self.speed_x = max(0, self.speed_x - self.x_acceleration / 6)

def move(self):
    keys = key.get_pressed()

    if not self.y >= window_y - self.height:

        if keys[K_LEFT] and keys[K_RIGHT]: self.slow_character()
        elif keys[K_LEFT]: self.speed_x -= self.x_acceleration
        elif keys[K_RIGHT]: self.speed_x += self.x_acceleration
        else: self.slow_character()

        self.speed_x = max(-self.max_speed_x, min(self.max_speed_x,
self.speed_x))
        self.speed_y = max(-self.max_speed_y, min(self.max_speed_y,
self.speed_y))

```

```
platform_spacing = 125 #space between platform
```

```
class Platform_Manager:
```

```
    def __init__(self):
```

```
        self.platforms = []
```

```
        self.spawns = 0
```

```
        self.start_spawn = window_y
```

```
        scale = 3
```

```
        self.width, self.height = 24 * scale, 6 * scale
```

```
    def update(self):
```

```
        self.spawner()
```

```
        return self.manage()
```

```
    def spawner(self):
```

```
        if window_y - info['screen_y'] > self.spawns * platform_spacing:
```

```
            self.spawn()
```

```
    def spawn(self):
```

```
        y = self.start_spawn - self.spawns * platform_spacing
```

```
        x = random.randint(-self.width, window_x)
```

```
        self.platforms.append(Platform(x,y,random.choice([1,-1])))
```

```
        self.spawns += 1
```

```
    def manage(self):
```

```
        u = []
```



```
b = []
for i in self.platforms:
    i.move()
    i.change_direction()
    b.append(i.show())

    if i.on_screen():
        u.append(i)

self.platforms = u
return b
```

```
class Platform:
    def __init__(self,x,y,direction):
        self.x = x
        self.y = y
        self.direction = direction
        self.speed = 2

    scale = 3
    self.width, self.height = 24 * scale, 6 * scale

    def move(self):
        self.x += self.speed * self.direction
        self.change_direction()

    def change_direction(self):
        if self.x <= 0:
            self.direction = 1
```

```

        if self.x + self.width >= window_x:
            self.direction = -1

    def on_screen(self):
        if self.y > info['screen_y'] + window_y:
            return False
        return True

    def show(self):
        return ((0,0,0), (self.x, self.y, self.width, self.height))

def blit_images(x):
    for i in x:
        window.blit(transform.scale(i[0], (i[1][2],i[1][3])), (i[1][0], i[1][1] -
info['screen_y']))

def event_loop():
    for loop in event.get():
        if loop.type == KEYDOWN:
            if loop.key == K_ESCAPE:
                quit()
        if loop.type == QUIT:
            quit()

##def show_menu():
##    window.blit(start,(0,0))
##    display.flip()
##    waiting = True
##    while waiting:
##        clock.tick(60)
##        for event in event.get():

```

```

##         if event.type == KEYUP:
##             waiting = False

f = font.SysFont("", 55)
def show_score(score, pos):
    message = f.render(str(round(score)), True, (100,100,100))
    rect = message.get_rect()

    if pos == 0:
        x = window_x - rect.width - 10
    else:
        x = 10
    y = rect.height + 10

    window.blit(message, (x, y))

info = {
    'screen_y': 0,
    'score': 0,
    'high_score': 0
}

stick_man = Shark()
platform_manager = Platform_Manager()
platform_image = image.load('bar.png')

start_screen = True
while True:
    #MATH THINGS
    ## if start_screen:
    ##     show_menu()

```

```

## start_screen = False

event_loop()

platform_blit = platform_manager.update()
stick_blit = stick_man.update(platform_blit)
info['screen_y'] = min(min(0,stick_blit[1][1] -
window_y*0.4),info['screen_y'])
info['score'] = (-stick_blit[1][1] + 470)/50

#print(stick_blit[1][1], info['screen_y'])
if stick_blit[1][1] - 470 > info['screen_y']:
    info['score'] = 0
    info['screen_y'] = 0
    stick_man = Stick_Man()
    platform_manager = Platform_Manager()

clock.tick(60)

#DISPLAY THINGS
scroll = bg2 % background_image.get_rect().height
window.blit(background_image, [0,scroll -
background_image.get_rect().height ])
if scroll < window_y:
    window.blit(background_image,(0,scroll))
bg2 += 2

for x in platform_blit:
    i = list(x)
    i[1] = list(i[1])
    i[1][1] -= info['screen_y']
    window.blit(platform_image, i[1])
blit_images([stick_blit])

```

```
info['high_score'] = max(info['high_score'], info['score'])
```

```
show_score(info['score'],1)
```

```
show_score(info['high_score'],0)
```

```
display.update()
```

IN GAME PICTURE:

