



PYGAME ZERO: Worksheet 1.0: A Simple Game



1: Getting Started

Load your Pi, open the LX Terminal Type `sudo idle3` to open Python then select a New Window

2: Import PyGame

Next import Pygame and time. In the Python window type,
`import pygame`
`import time`

3. Creating a Game Window

Set the width and height of your window and then create a function called draw, choose a colour to fill it with using the standard RGB values. *(Change the values)*

```
WIDTH = 500
HEIGHT = 500
```

```
def draw():
    screen.fill((255, 0, 0, 0))
```

4. Running your code

Save your game file and open a new LX Terminal Window. (Move to the game folder using `cd`)
To run type:
`sudo pgzrun name_of_your_program`

Getting Started:

Images for your game need to be stored in a folder called 'images'. This folder must be created inside the same folder as your game file. Use **lower case** when naming the files and folders.

Recommended image size
200 x 200 pixels

Moving a Sprite:

To move the Sprite around the game add the value '2' to the left command. Then check if the Sprite has reached the edge of the window. If so then set it to move it back to the left hand side of the screen and move across again.

You missed me:

If don't click the sprite it changes back to the first Actor image and a message, "you missed me!" is displayed and a sound played. You can add a different background using a suitably sized image which matches the height and width in step 3. Save the image into the `images` folder and underneath the `draw` function add the line, `screen.blit('name_of_background', (0,0))`

```
import pygame
import time

game_hero = Actor('mbros')
game_hero.pos = 400, 500

WIDTH = 1000
HEIGHT = game_hero.height + 500

def draw():
    screen.clear()
    game_hero.draw()

def update():
    game_hero.left += 2
    if game_hero.left > WIDTH:
        game_hero.right = 0

def on_mouse_down(pos):
    if game_hero.collidepoint(pos):
        print("Eek!")
        game_hero.image = 'pi'
    else:
        print("You missed me!")
        game_hero.image = 'mbros'
        sounds.eep.play()
```

Display a Sprite:

Images for your games are called sprites and are known as Actors. To display them, first assign them to a variable, then give them a position on the game window. Then set a height and width. Finally create a function to draw the sprite in the game.

Mouse Clicks:

Create a new function `on_mouse_down(pos)` to enable you to click the sprite which responds by changing the image to the Pi logo and displaying the message "Eek!" (or another)

Now try these:

1. Speed up the 'Actor'?
2. Change the images?
3. Add a different sound
4. Add more Actors
5. Use a different mouse button `on_mouse_up(pos)`
6. Change the Background