

# Pygame

```
import pygame
```

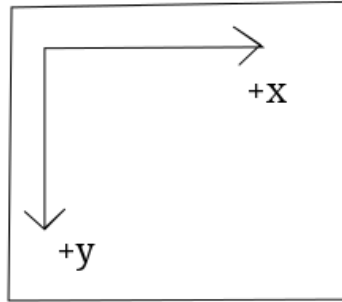
Pygame docs: <https://www.pygame.org/docs/index.html>  
(<https://www.pygame.org/docs/index.html>)

# A few concepts we need before using PyGame

## Sizes and locations

$(0, 0)$

$(x, y)$



## Setting up the screen

```
main_screen = pygame.display.set_mode((400, 400))  
main_screen.fill((255,255,255))
```

## RGB color

## Event polling / game loop

An example of a game loop:

```
while True:
    ev = pygame.event.poll()
    if ev.type == pygame.QUIT:
        sys.exit()
    if ev.type == pygame.MOUSEBUTTONDOWN:
        x, y = ev.pos
        # do something with the click
    pygame.display.flip()
```

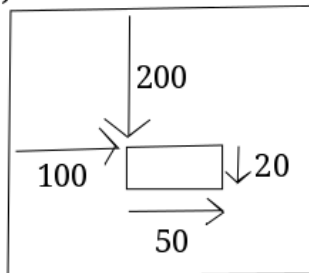
## Rectangles

The four numbers represent the (top left x coordinate, top left y coordinate, width, height)

```
button_rec = pygame.Rect(100, 200, 50, 20)
```

(0, 0)

(x, y)



## Surface

For an image:

```
buttonimg = pygame.image.load('baby-bamba.jpg')
```

For a square of black color:

```
button_sq = pygame.Surface([20, 20])
```

For a square of another color:

```
button_sq = pygame.Surface([20, 20])  
button_sq.fill((255, 0, 0))
```



## Blit

```
button_rec = pygame.Rect(100, 100, 20, 20)
button_sq = pygame.Surface([20, 20])
main_screen.blit(button_sq, button_rec)
```

# Flip

```
pygame.display.flip()
```

```
In []: import pygame
import sys

if __name__=="__main__":
    pygame.init()
    main_screen = pygame.display.set_mode((400, 400))
    main_screen.fill((255,255,255))
    button_rec = pygame.Rect(100, 100, 20, 20)
    button_sq = pygame.Surface([20, 20])
    main_screen.blit(button_sq, button_rec)

    while True:
        ev = pygame.event.poll()
        if ev.type == pygame.QUIT:
            sys.exit()
        if ev.type == pygame.MOUSEBUTTONDOWN:
            x, y = ev.pos
            if button_rec.collidepoint(x, y):
                print "you clicked me!"
            pygame.display.flip()
```

# More things

## Making a text label

```
label_rec = pygame.Rect(50, 50, 200, 30)

# first argument is a filename (none if you want the default)
# second argument is the font size
orderlabel = pygame.font.Font(None, 30)

# Method: render(text, antialias, color, background=None)
label = orderlabel.render(str(a), 1, (0, 0, 0), (255, 255, 255)
)

main_screen.blit(label, label_rec)
```

# Screens