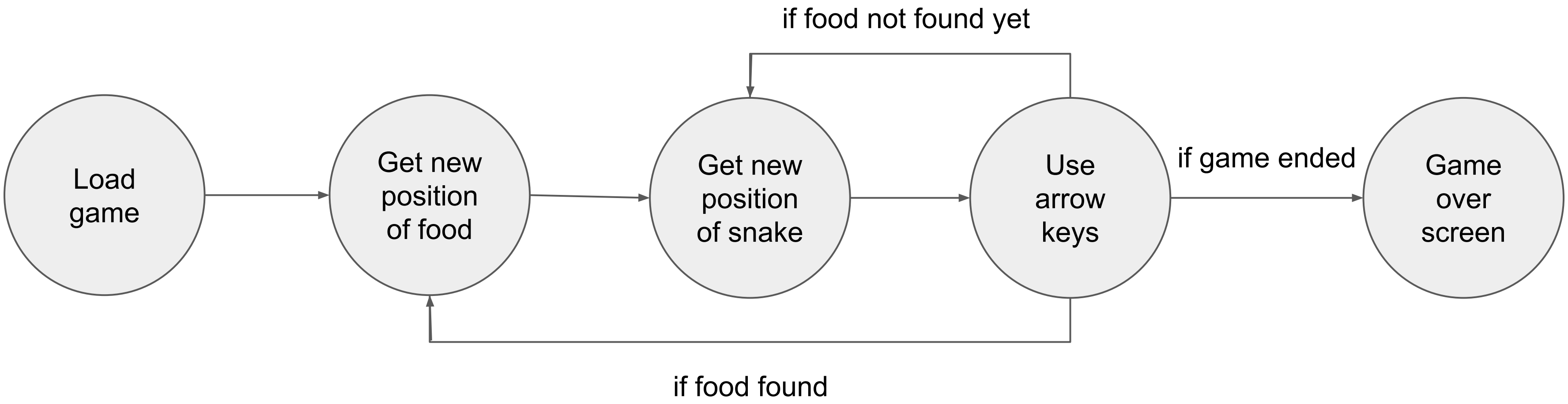
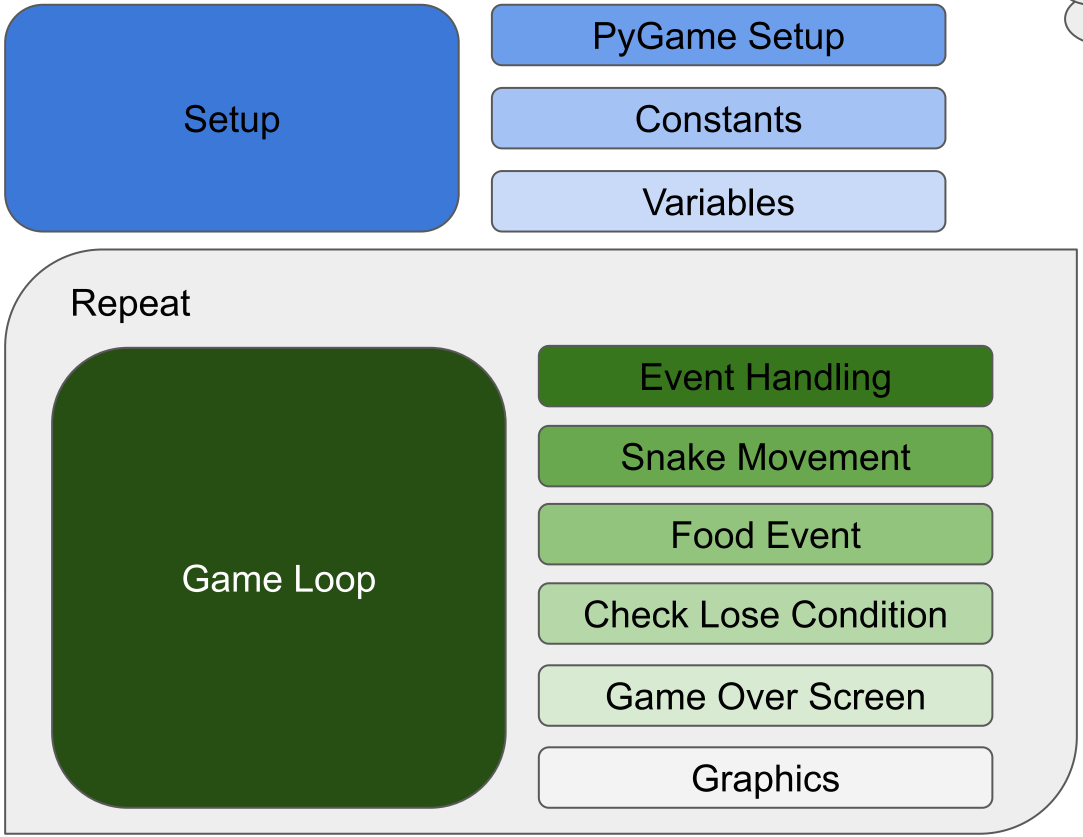
Schematic View of Snake



Implementation Design

Does the order matter?



Setup

PyGame Setup

Constants

Variables

Repeat

Game Loop

Event Handling

Snake Movement

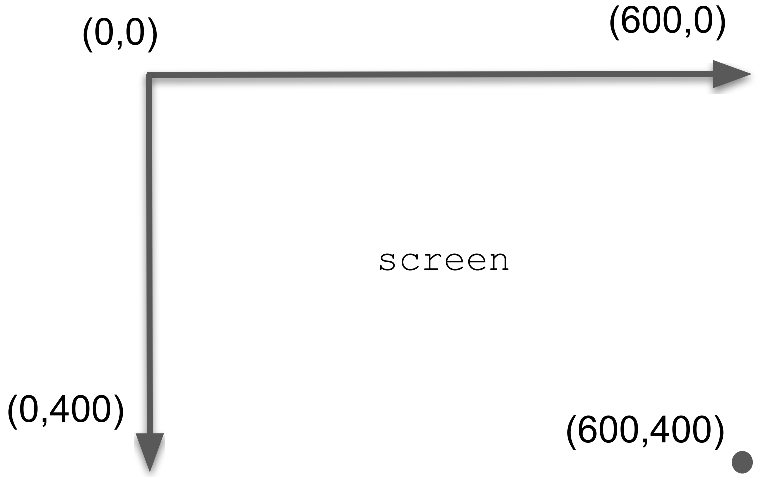
Food Event

Check Lose Condition

Game Over Screen

Graphics

PyGame Surface



`display.set_mode((SIZE_X, SIZE_Y))` – create the main Surface object with size `(SIZE_X, SIZE_Y)`

`display.set_caption(TEXT)` - set window title text as `TEXT`

`font.render(TEXT, True, COLOR)` - generate a Surface from `TEXT` with colour `COLOR`

`screen.fill(COLOR)` - fill the main Surface with the colour `COLOR`

`screen.blit(SURF,(X, Y))` - pastes `SURF` onto the main Surface at `(X, Y)`

`display.update()` - refresh the entire window with latest elements

`draw.rect(SURF, COLOR, (X, Y, SIZE_X, SIZE_Y))` - draw a `COLOR` rectangle on `SURF` at `(X, Y)` with size `(SIZE_X, SIZE_Y)`

Snake Attributes

- Leading coordinate (head)
- Body coordinates
- Body length
- Current direction and velocity

★ Body length grows by 1 after consuming food

★ Body coordinates are previous leading coordinates

Food Attribute

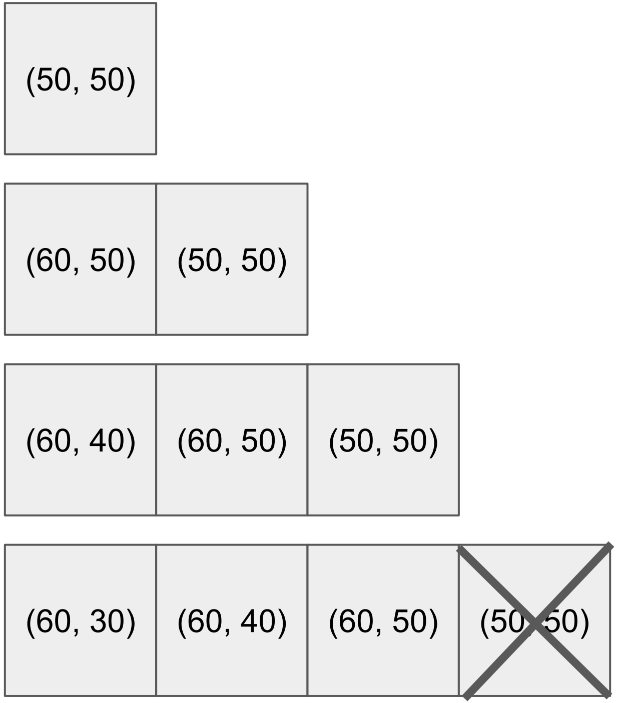
- Coordinates

★ Randomly generated within the bounds of the screen

Snake List

Assuming that `snake_maxlen` = 3

- [t = 1] (x, y) = (50, 50)
- [t = 2] (x, y) = (60, 50)
- [t = 3] (x, y) = (60, 40)
- [t = 4] (x, y) = (60, 30)



(50, 50)

(60, 50) (50, 50)

(60, 40) (60, 50) (50, 50)

(60, 30) (60, 40) (60, 50) ~~(50, 50)~~

Other Game Development Tools

- Python Pyglet
- Java libGDX
- Unity
- Unreal Engine