

Animating your Drawings

Basics of Animation

Produced
by:

Department of Computing and Mathematics



Waterford Institute *of* Technology
INSTITIÚID TEICNEOLAÍOCHTA PHORT LÁIRGE

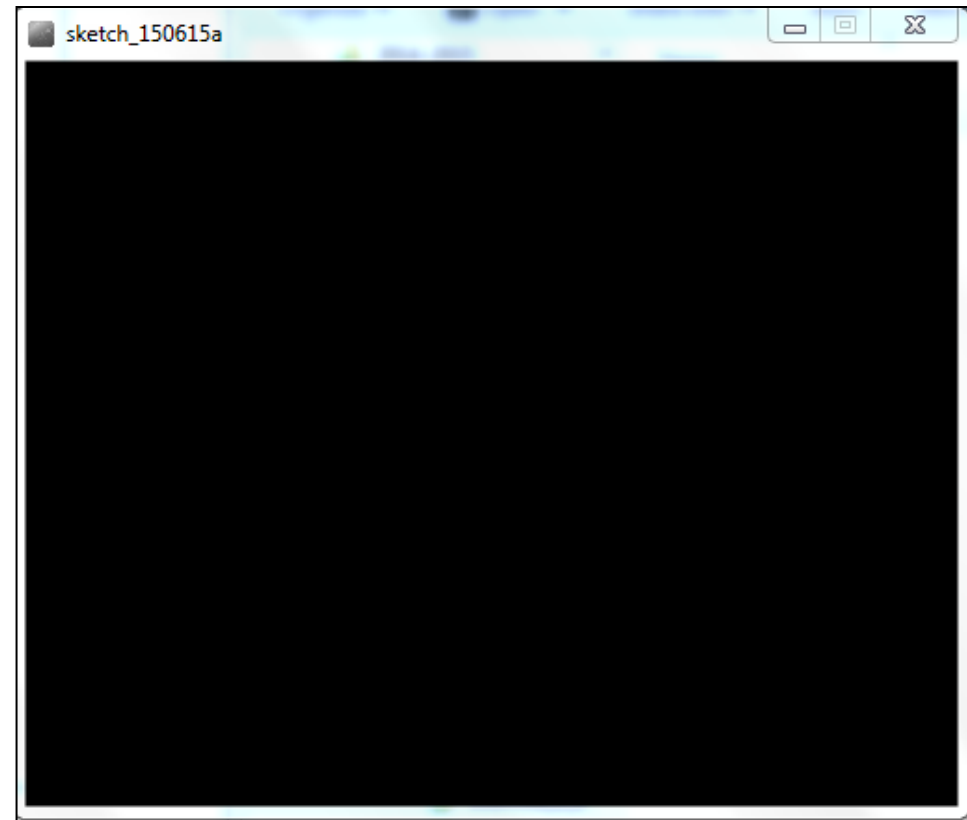
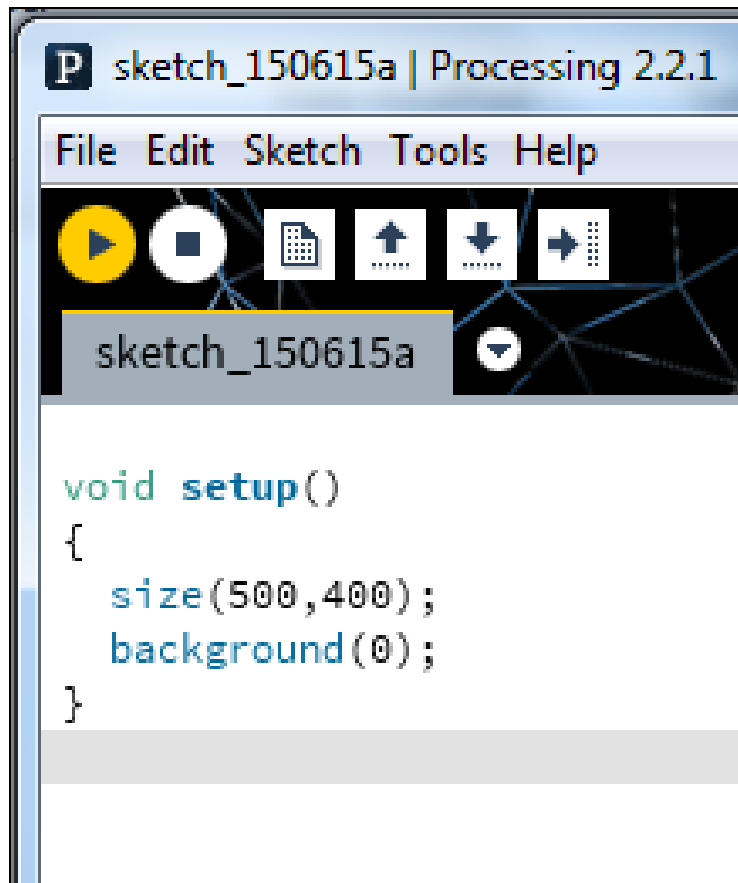
Topics list

- The setup() function.
- The draw() function.
- System Variables in Processing.

void setup()

- setup() is called once when the program starts and should not be called again.
- setup() can set the screen size and background colour.
- There can only be one setup() function for each sketch.

void setup()



Topics list

- The setup() function.
- The draw() function.
- System Variables in Processing.

void draw()

- You should never call the draw() function.
- Processing automatically calls the draw() function straight after the setup() call.
- draw() continuously executes the code contained inside it.
- There can only be one draw() function for each sketch.

void draw()

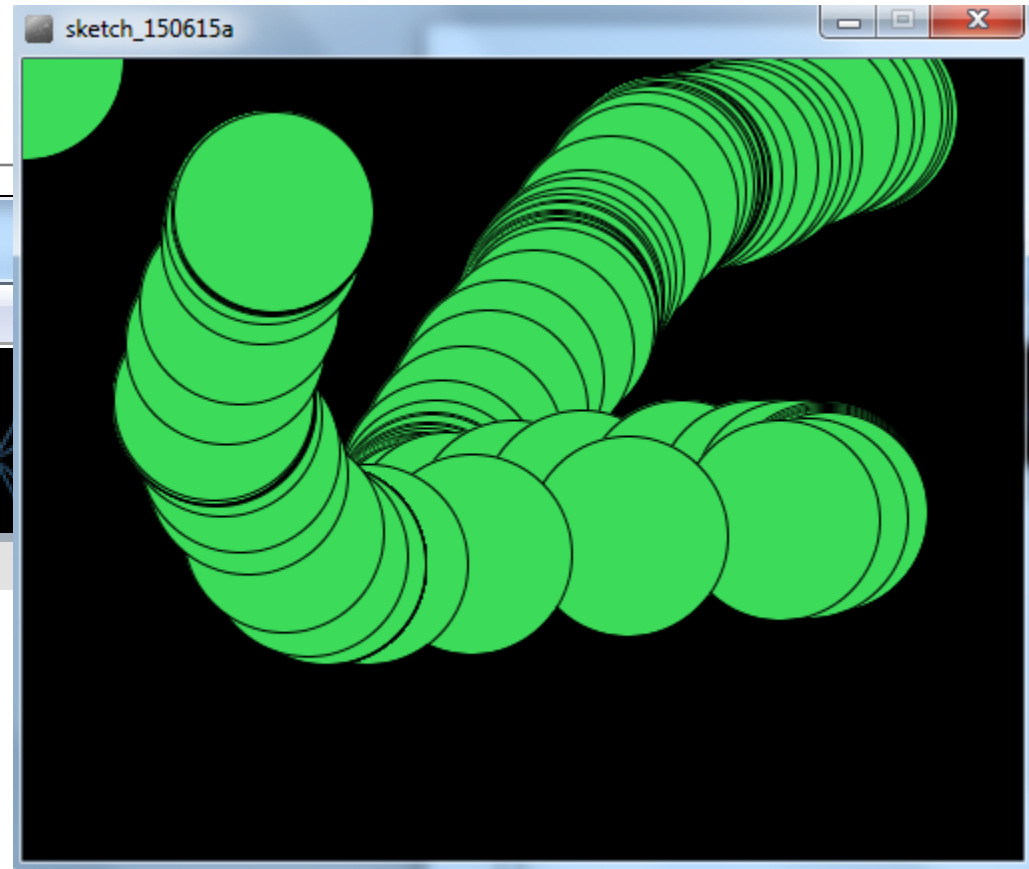
```
sketch_150615a | Processing 2.2.1
File Edit Sketch Tools Help

[Icons: Run, Stop, Open, Save, Load, Export, Print]

sketch_150615a ▼

void setup()
{
  size(500,400);
  background(0);
}

void draw()
{
  stroke(0, 0, 0);
  fill(60, 220, 90);
  ellipse(mouseX, mouseY, 100, 100);
}
```



mouseX = x co-ordinate of mouse pointer
mouseY = y co-ordinate of mouse pointer

Q: Why many circles?

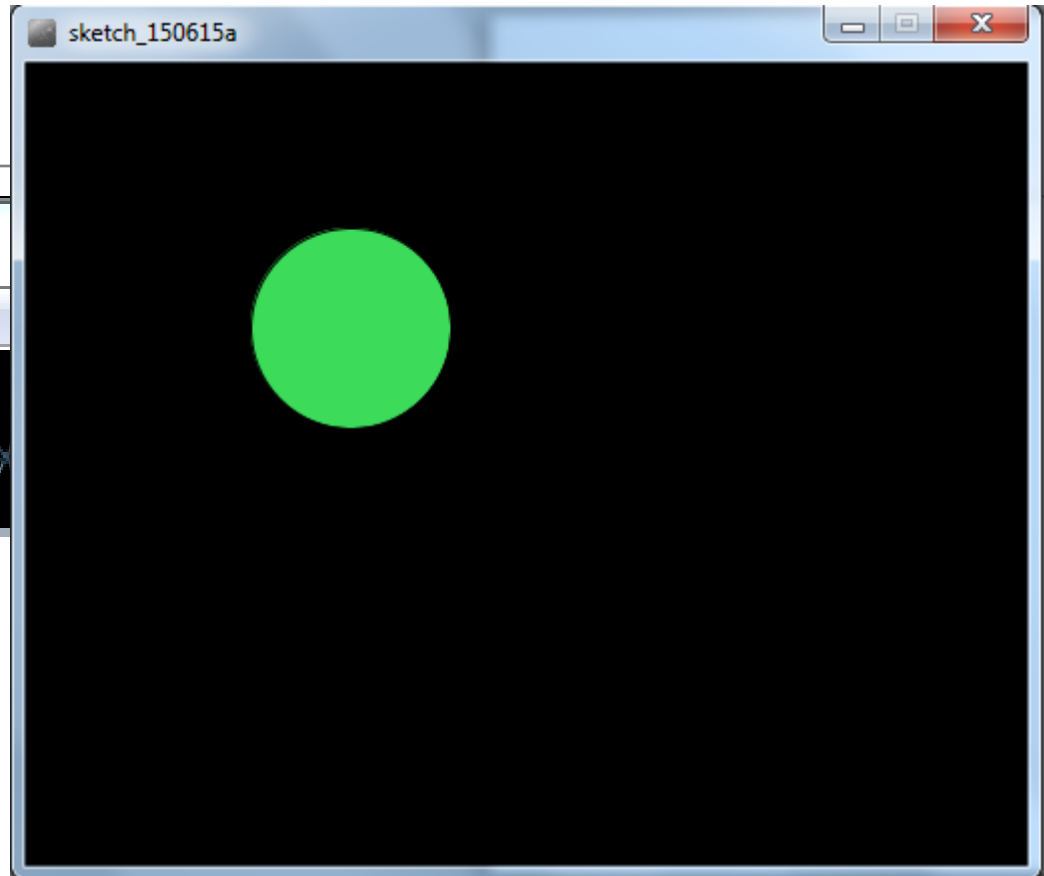
A: background(0) is in the setup function.

void draw()

```
sketch_150615a | Processing 2.2.1
File Edit Sketch Tools Help
[Icons] Run
sketch_150615a

void setup()
{
  size(500,400);
}

void draw()
{
  background(0);
  stroke(0, 0, 0);
  fill(60, 220, 90);
  ellipse(mouseX, mouseY, 100, 100);
}
```



mouseX = x co-ordinate of mouse pointer
mouseY = y co-ordinate of mouse pointer

Q. Why only one circle?

A. background(0) is in the draw function.

Topics list

- The setup() function.
- The draw() function.
- System Variables in Processing.

System Variables in Processing

Some examples of system variables in Processing:

mouseX (x co-ordinate of the mouse pointer on the display window)

mouseY (y co-ordinate of the mouse pointer on the display window)

width (width of the display window)

height (height of the display window)

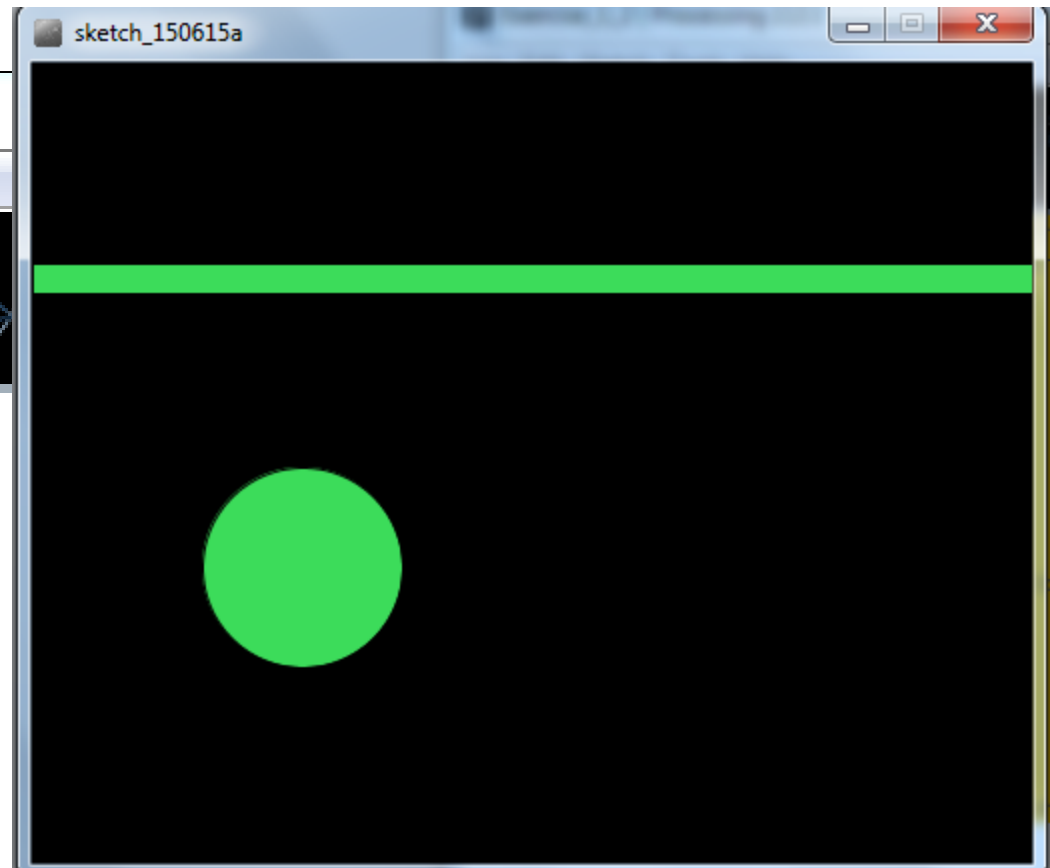
We don't have to define/create these; we just use them.

System Variables in Processing

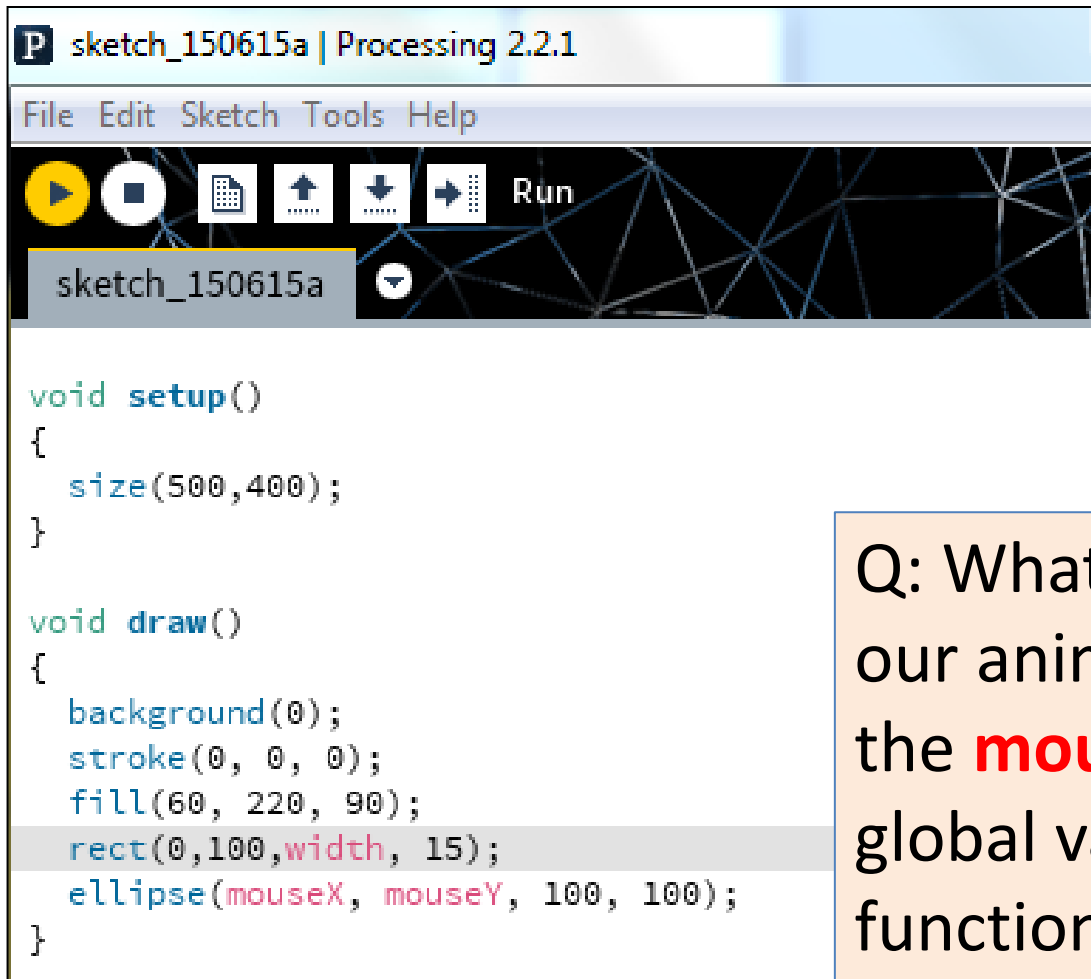
```
P sketch_150615a | Processing 2.2.1
File Edit Sketch Tools Help
[Icons: Play, Stop, New, Open, Save, Run] Run
sketch_150615a [Dropdown]

void setup()
{
  size(500,400);
}

void draw()
{
  background(0);
  stroke(0, 0, 0);
  fill(60, 220, 90);
  rect(0,100,width, 15);
  ellipse(mouseX, mouseY, 100, 100);
}
```



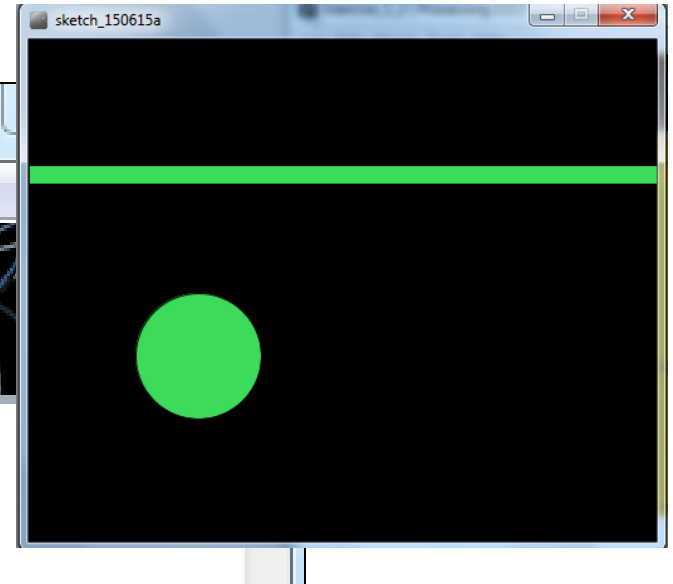
System Variables in Processing



The screenshot shows the Processing IDE interface. The title bar reads 'P sketch_150615a | Processing 2.2.1'. The menu bar includes 'File', 'Edit', 'Sketch', 'Tools', and 'Help'. Below the menu bar is a toolbar with icons for play, stop, new, open, save, and run. The 'Run' button is highlighted. The sketch name 'sketch_150615a' is displayed in the toolbar. The code editor shows the following code:

```
void setup()
{
  size(500,400);
}

void draw()
{
  background(0);
  stroke(0, 0, 0);
  fill(60, 220, 90);
  rect(0,100,width, 15);
  ellipse(mouseX, mouseY, 100, 100);
}
```



Q: What would happen to our animation if we swapped the **mouseX** and **mouseY** global variables in the **ellipse** function with each other?

Questions?





Except where otherwise noted, this content is licensed under a Creative Commons Attribution-NonCommercial 3.0 License.

For more information, please see <http://creativecommons.org/licenses/by-nc/3.0/>



Waterford Institute *of* Technology
INSTITIÚID TEICNEOLAÍOCHTA PHORT LÁIRGE

Department of Computing and Mathematics
<http://www.wit.ie/>