Programming

Using Processing

Department of Computing and Mathematics
setu.ie

Introduction to Processing

What is Processing?

Processing is a

programming language, development environment, and online community

…can be used to develop static or interactive online material
and data visualisations.

…is often used by visual artists.

…produces visual and interactive representations of programming code.

What is Processing?

- Different programming languages can be used with Processing e.g. :
  - **Java**: ver 4 uses Java 17, ver 3 uses Java 8.
  - **JavaScript** (p5.js)
  - **Python**
- It can be used on different platforms :
  - Windows, OSX, **Linux** and now **Android**

Why are we using Processing?

Processing is increasingly used

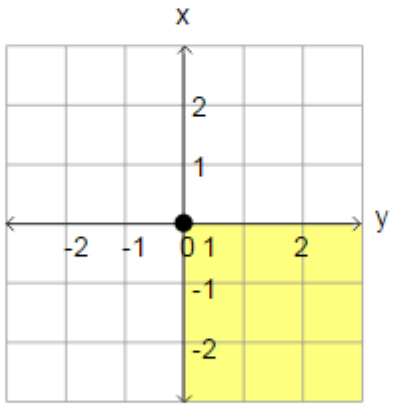
to teach computer

programming fundamentals

(https://processing.org/overview/)

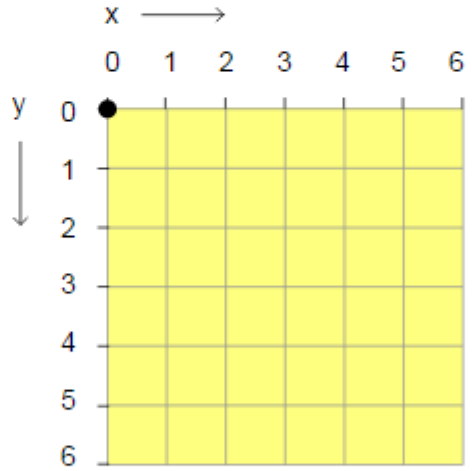
Coordinate System in Computing

In Geometry,
we use this type of
coordinate system:



point (0,0) is in the centre.

In Computing, we use this type of coordinate system to represent the screen:

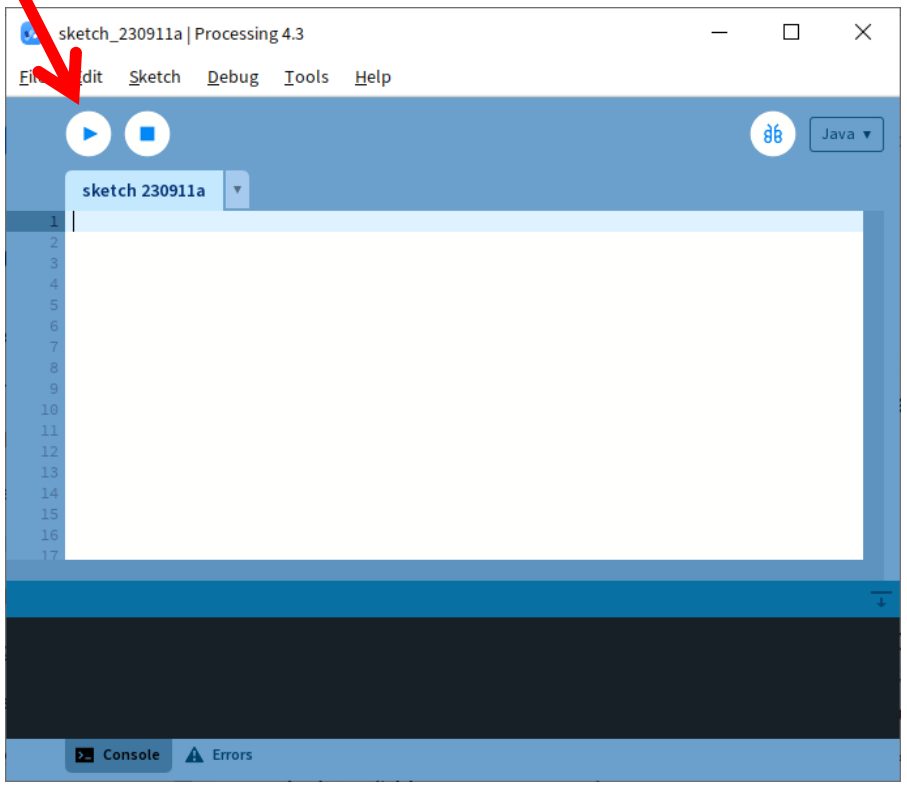


point (0,0) is in the top left hand corner. Each number is a pixel.

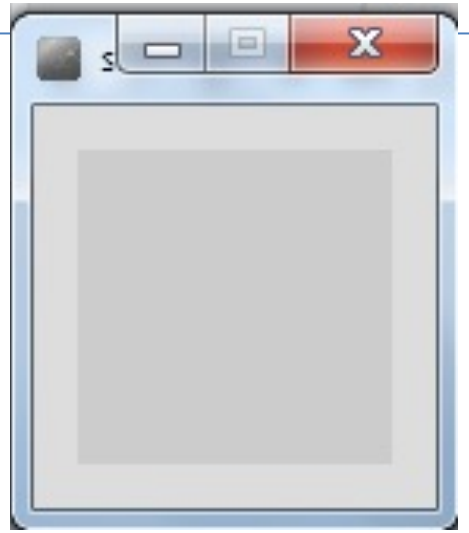
https://processing.org/

Coordinate System in Computing

Run button



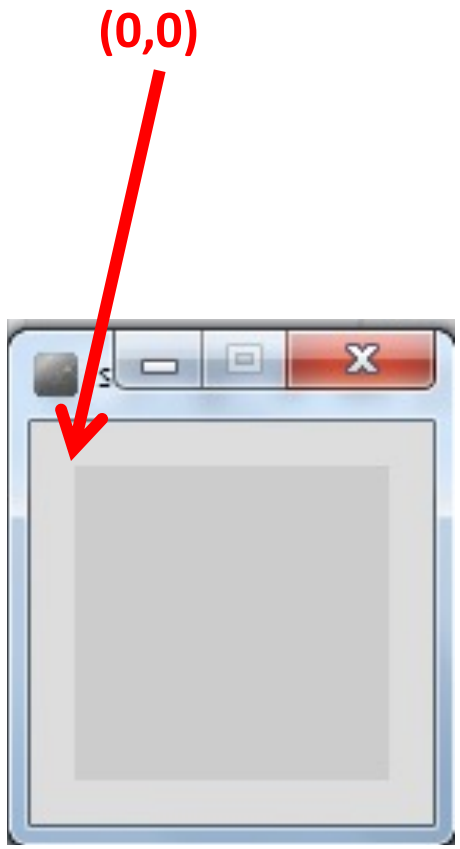
- So how does this relate to Processing?
- When you open Processing and click on the run button, a display window pops up.



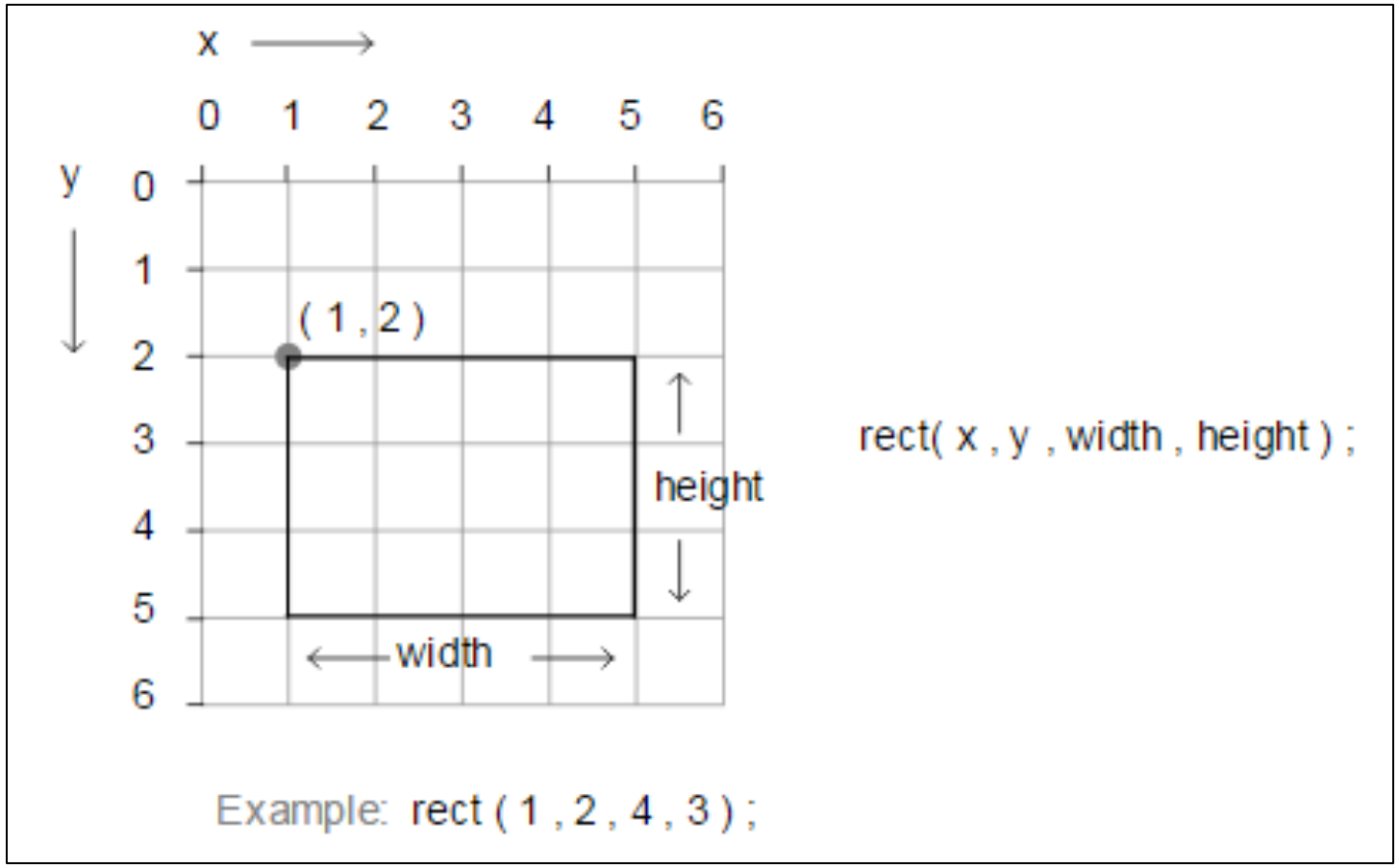
Display window

Coordinate System in Computing

- The display window is where your code is run/ displayed.
- It follows the rules of the Computing coordinate system i.e. the top left hand corner is (0,0).
- A point (10,20) is 10 pixels to the right of (0,0) and 20 pixels below (0,0).

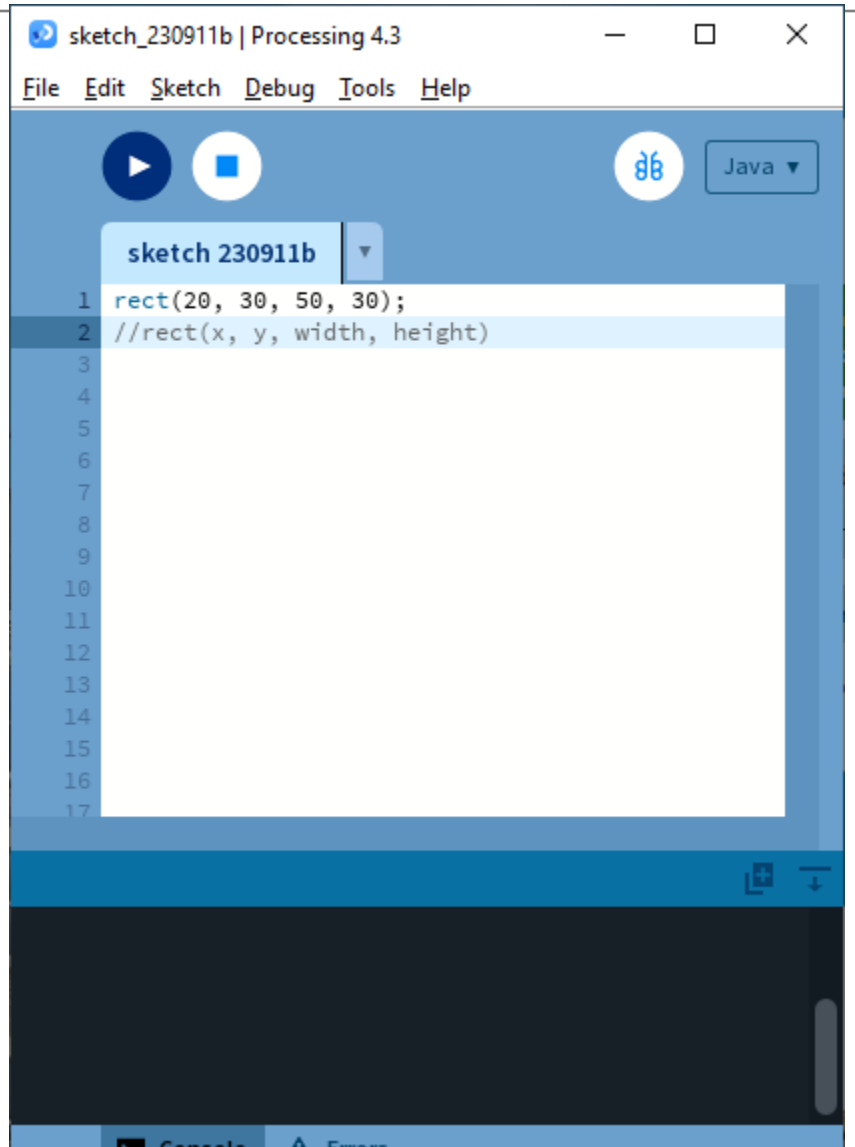


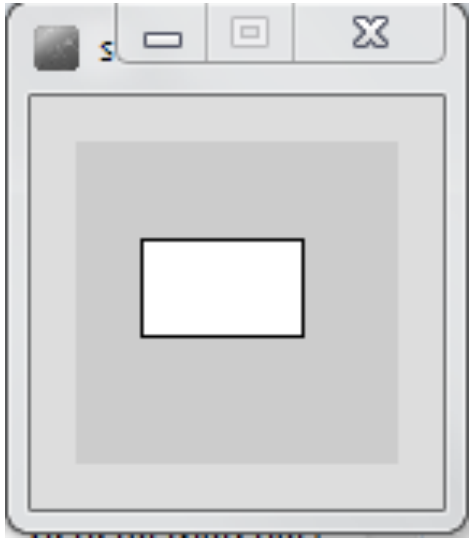
rect()



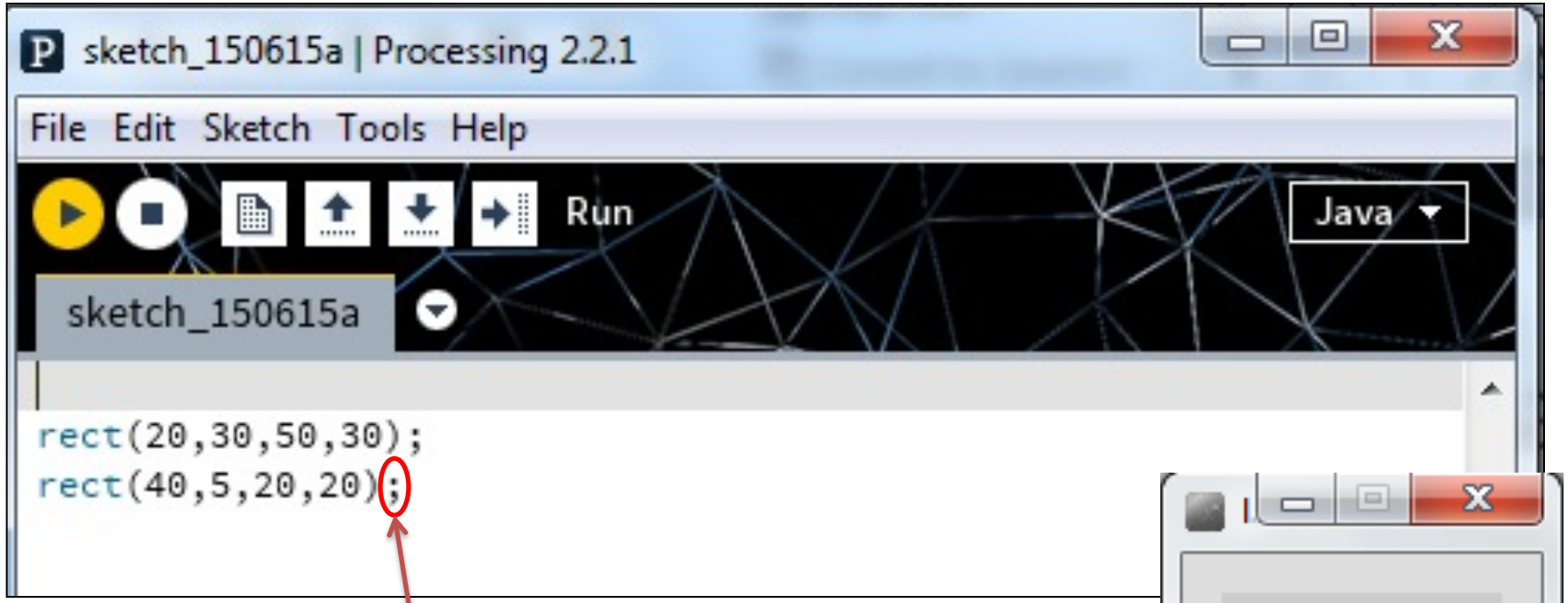
https://processing.org/

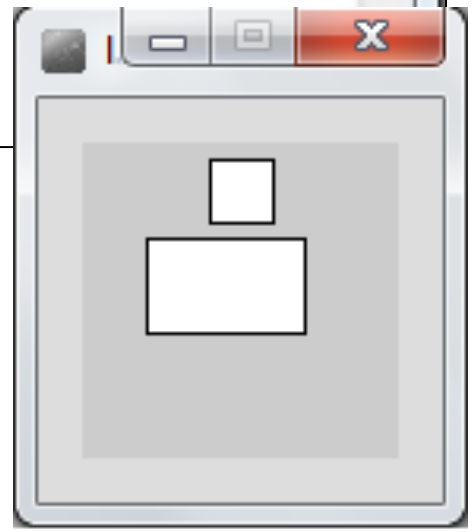
rect() – Drawing a Rectangle





rect() – Drawing a Square





Note how each line of code has a semi-colon (;) at the end of it. This is called a statement terminator and must be included.

rect() – Syntax

rect(x, y, w, h)

x = x-coordinate of the upper left corner of the rectangle

y = y-coordinate of the upper left corner of the rectangle

w = width of the rectangle

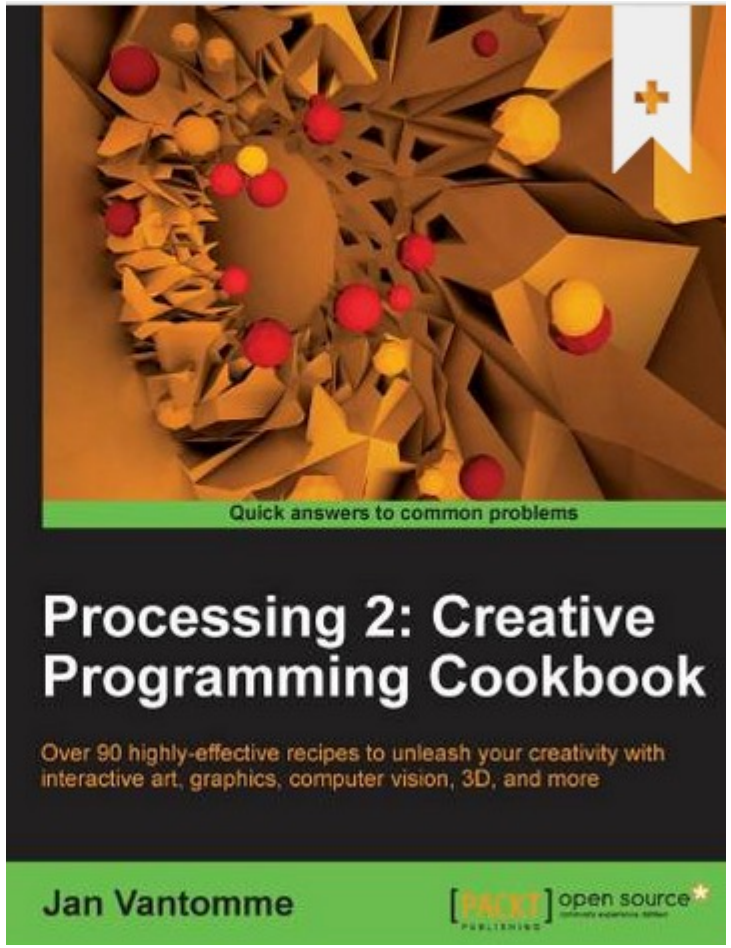
h = height of the rectangle

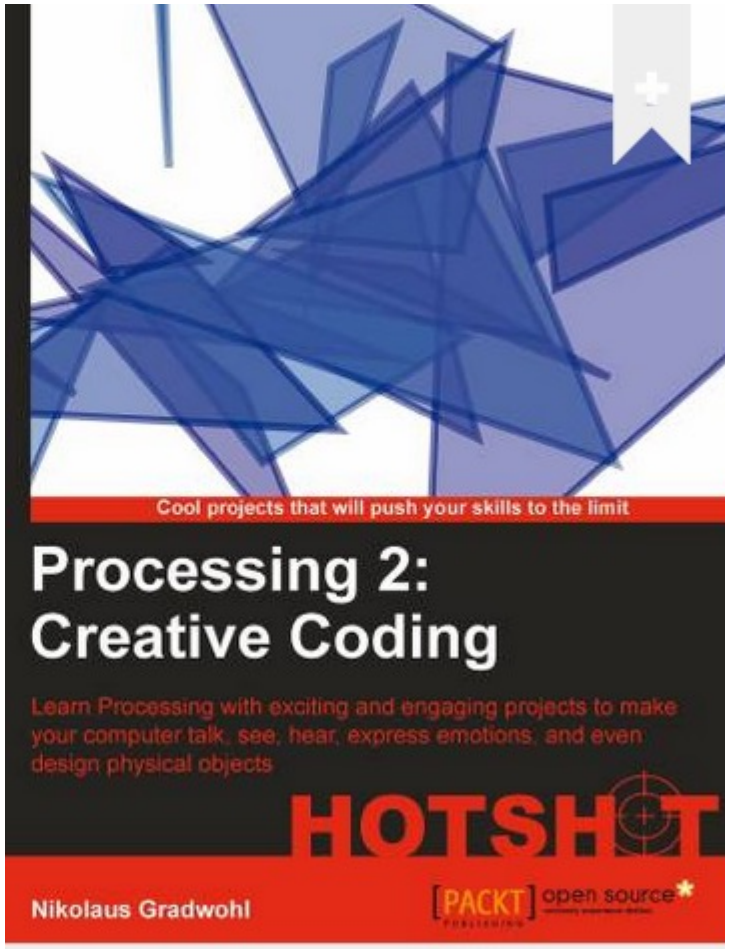
- The rect function above defines four parameters i.e. x, y, w, h.
- When you call rect, you are expected to pass four numbers to it. These actual numbers are called arguments.
- rect uses these four numbers to render the rectangle on the display window.

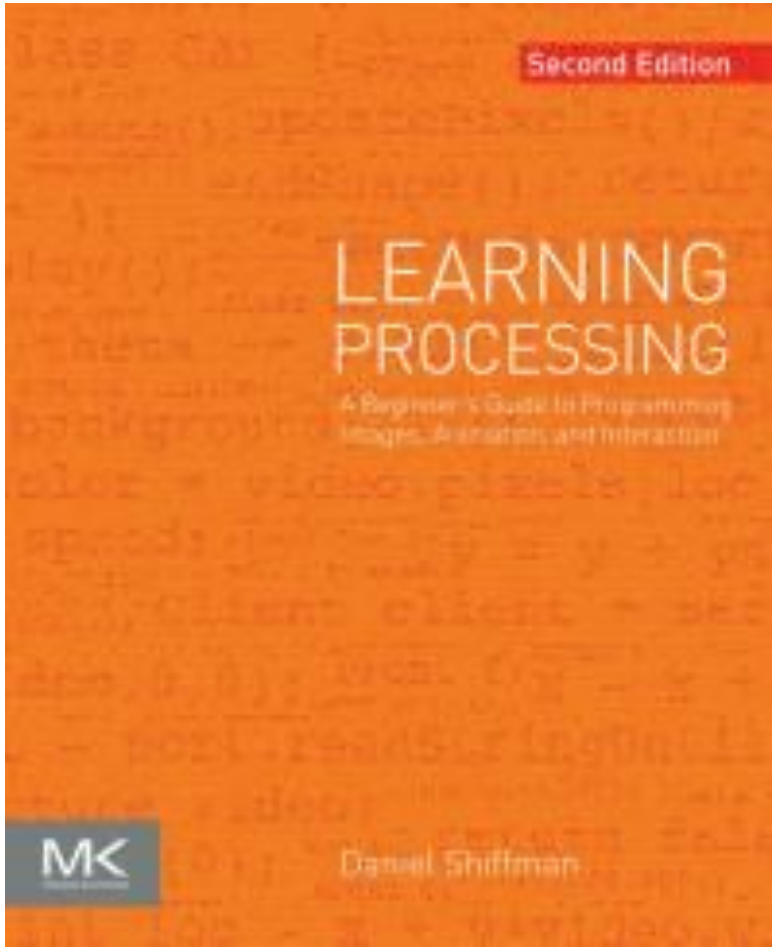
To draw a square, the width and height must be the same value.

Some **eBooks** in WIT library

https://library.wit.ie/Resources/ebooks

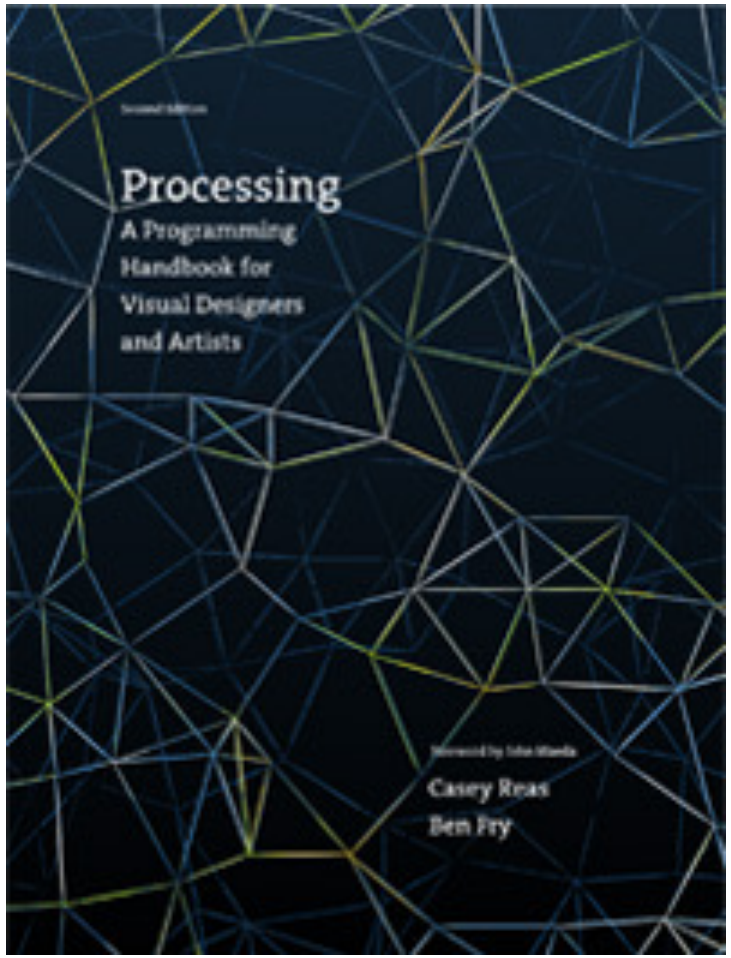


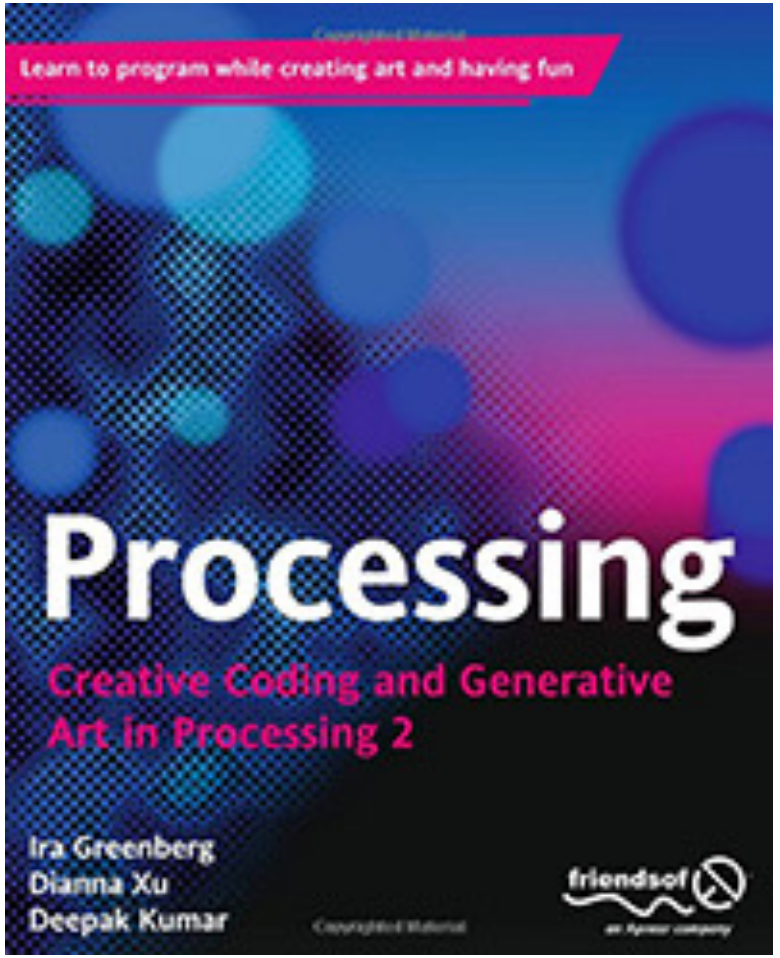


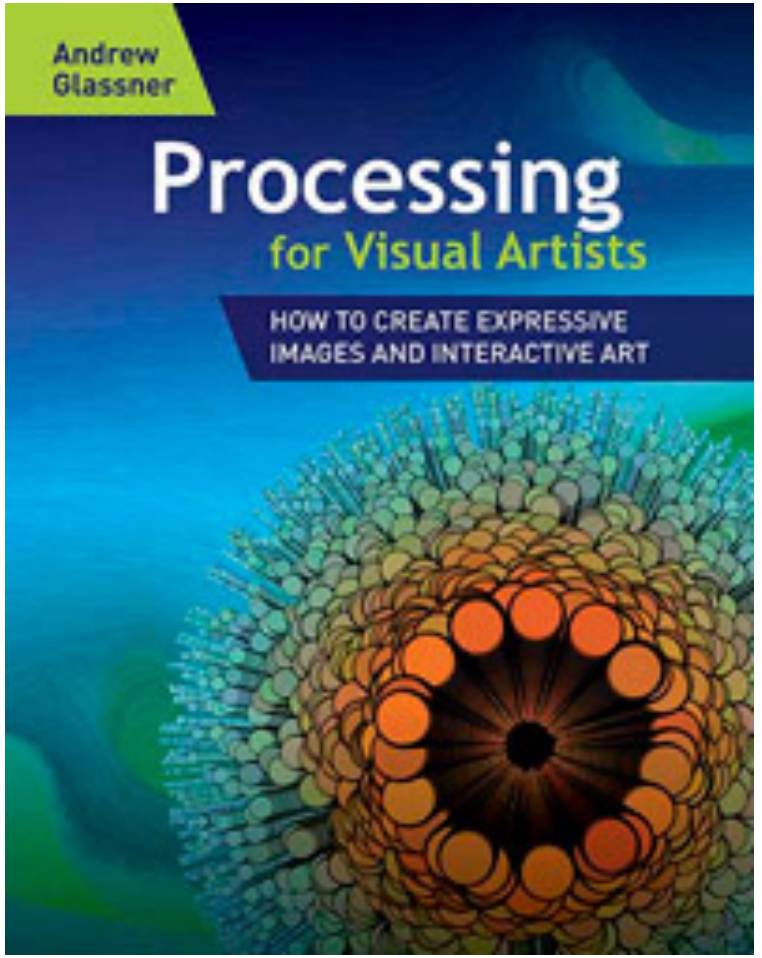


Processing Books

https://processing.org/books/







Questions?