

Lesson 1: An Introduction to Shapes

Lesson aim:

- Become familiar with the processing programming app.
- Write our first program!

Why:

We will be programming with Processing the whole course - so we need to get familiar with it first!

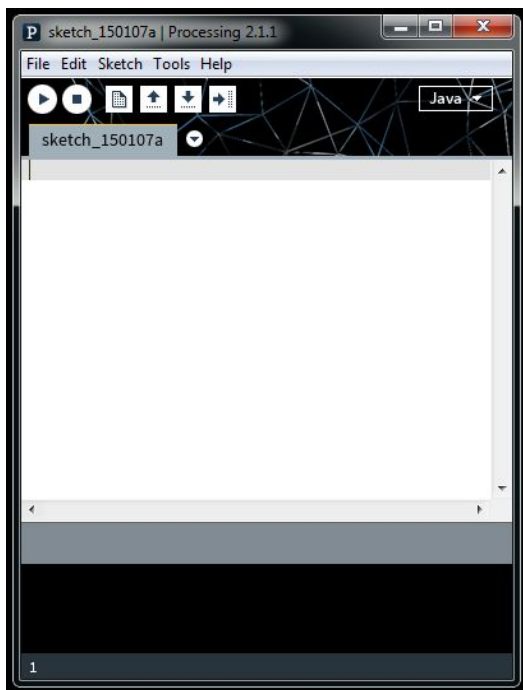
This is an introduction to some fundamental programming, we will be using this functionality all course.

First step - open Processing!



Click on the Processing icon (seen left) on your taskbar (the bar at the bottom of the screen).

You should now see the Processing app, shown below:



The most important icons we need to know are:



- runs the code written.




- stops whatever program is running at the moment.

Your first program

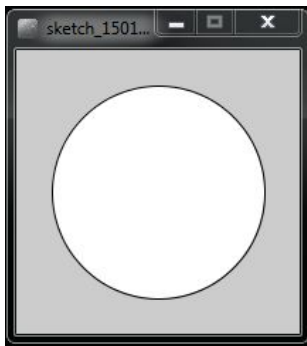
Type the text below into the processing app:

NOTE: *we show code examples in boxes like the one below!*

```
size(200,200);  
ellipse(100,100,150,150);
```

And press the run button ().

You should see a circle like this pop up in the Display Window:



Congratulations! You have written your first program.

- Save this program, (file→ save as) start the file name “**Lesson1**”

Some Common Mistakes

- Every line must end with a semicolon (for now, at least - there are exceptions we’ll see later in the course).
- You need to be **very careful** with spellings. Look out especially for capital letters. Remember, the computer will only do *exactly* what you tell it to. “ellipse” and “Ellipse” are **not** the same thing!
- Each *function* (another word for command or instruction) takes a specific number of *parameters* (the name for the numbers between the brackets). “size” always takes two numbers, separated by a comma. “ellipse” always takes four numbers, separated by commas. If you get an error this is one of the first things to check for.

Next we will dig into these lines in a little more detail.

Understanding Your First Program

Now we want to figure out what each of the underlined numbers do, and fill that information in on our toolbox sheet.



```
size(200, 200) ;  
ellipse(100, 100, 150, 150) ;
```

Q: How do we find out what the numbers do?

A: Change **only one** number and **re-run** the program, then see what happens!

For example: to see what the first number does we will change it from 200 to 400. See our new program below:

```
size(400, 200) ;  
ellipse(100, 100, 150, 150) ;
```

- Make this change and, stop the program () then then re run it ()
 - What changed?
- Now change the number from 400 to 100.
 - What changed? What does that number do?

Use this method to find out what all of the 6 numbers do and fill in the “Toolbox” sheet with your results.

Some Common Mistakes

- If the change you make to the code is too small it might be difficult to see what has changed in the output. On the other hand...
- ...if the change you make is too big, it might be impossible to see what has changed! You will quickly learn what kind of numbers make sense.
- Don't forget semicolons (“;”) - if you delete one by mistake it will probably prevent the program from running.
- Be careful of the number of parameters for each function. If you have too many or too few the program might not work - or it might work, but strange things will happen!