

CognAC Family Day

Python Turtle Assignment

1 Introduction

Hello, and welcome to the Python Turtle Assignment. Here we will cover the basics of the Python programming language using Turtle. That is a small object that can draw figures. The first step is opening the code editor on your browser. That can be done via [this link](#)

The turtle object can be controlled by giving it simple commands. An elaborate explanation of them can be found [here](#). But we will only use the most basic ones. They are explained beneath.

2 Commands

The following commands can be used to control the turtle:

<code>t.left(x)</code>	- turns the turtle x degrees counterclockwise
<code>t.right(x)</code>	- turns the turtle x degrees clockwise
<code>t.forward(x)</code>	- moves the turtle forwards x steps
<code>t.back(x)</code>	- moves the turtle backwards x steps
<code>t.down()</code>	- put the pen down, such that it can draw (default)
<code>t.up()</code>	- pulls the pen up, such that it can't draw
<code>t.circle(x, y)</code>	- draws a circle with radius x and angle y

As each spot in the canvas has a coordinate, you can also manually set the position for the turtle. The starting position has coordinates 0,0. So, going to the left or right by one step, decreases the x-coordinate by one. And going down or up by one decreases the y-coordinate by one. You can use the following command for this:

<code>t.goto(x, y)</code>	- goto the the position with coordinates x, y
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3 Assignments

3.1 Assignment 1

The first assignment is simply drawing some shapes to get familiar with the program. Draw a rectangle with a length of 100 and width of 50, a triangle where all three sides have an equal length of 90, and a full circle with a diameter of 120.

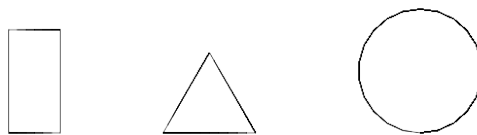


Figure 1: It should like like this

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3.2 Assignment 2

For the next assignment we will be doing something a bit more challenging. It is to draw to CognAC logo. In case you don't know what it looks like, here is it:

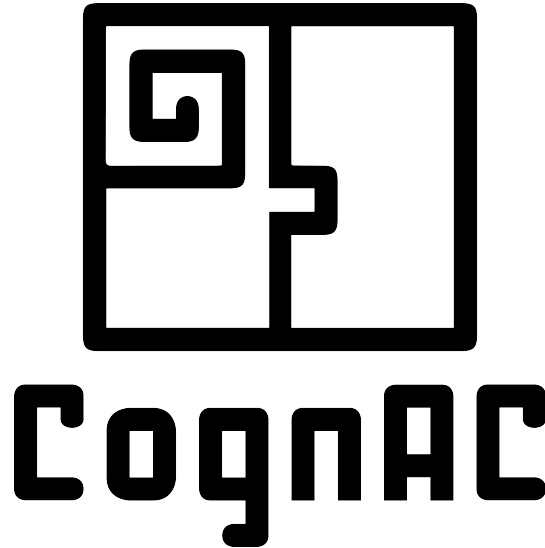


Figure 2: CognAC logo

3.3 Assignment 3

You can also add your own colours! We will be using it to draw some flags! To set the preferred colour you want to fill an area with you can use the command `t.fillcolor('c')` with `c` being a common color (e.g. red, white or blue), or the hex of the colour. Then by using the command `t.begin_fill()` and `t.end_fill()`, you can colour an area. Use `t.begin_fill()`, then mark the area you want to colour by travel along the edges of it. When that's done, use `t.end_fill()` to stop colouring.

We will use this to start making some flags. Let's first start drawing the Dutch flag. When you finished doing that, you can try some slightly more difficult flags like the flags of Japan, Sweden and Greenland.

3.4 Assignment 4

Now that you know the basics of Python turtle, it is time to become creative! Let your mind run free and make some beautiful art here! Become the new Van Gogh, Da Vinci, or Mondriaan if you're not that ambitious.