24.1. `turtle` — Turtle graphics

Excerpt from: https://docs.python.org/3/library/turtle.html

24.1.1. Introduction

Imagine a robotic turtle starting at (0, 0) in the x-y plane. After an `import turtle`, give the turtle the command `turtle.forward(100)`, and it moves (on-screen) 100 pixels in the direction it is facing, drawing a line as it moves. Give the turtle the command `turtle.right(45)`, and it rotates in-place 45 degrees clockwise.

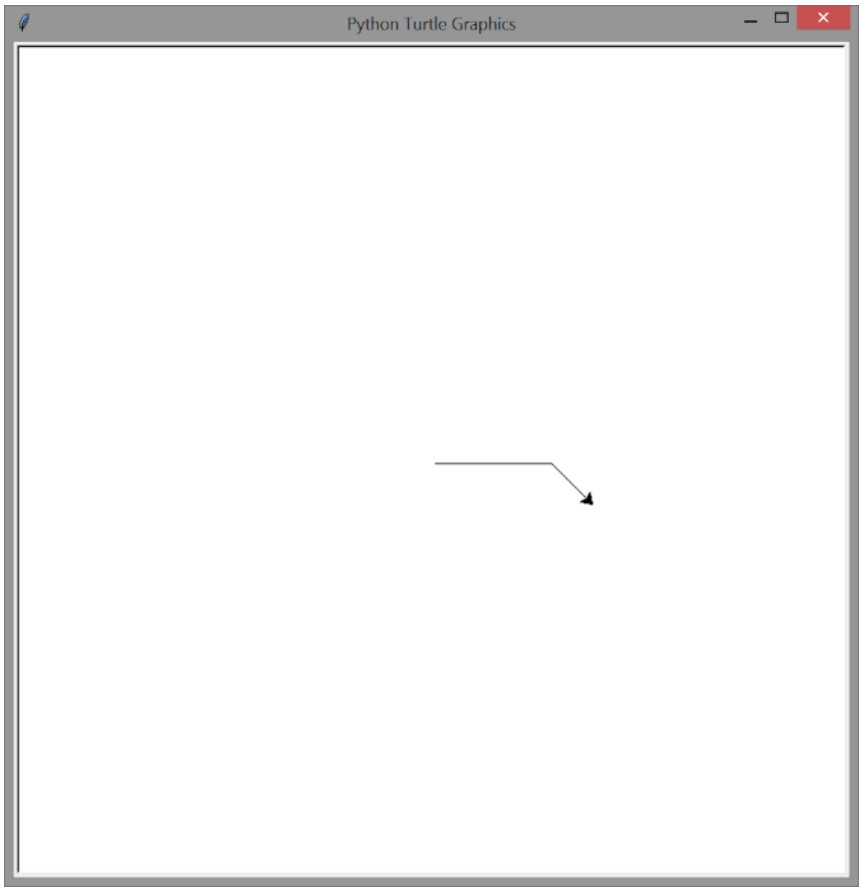
By combining together these and similar commands (listed below in section 24.1.3), intricate shapes and pictures can easily be drawn.

For example:

The following set of statements:

```
import turtle
turtle.forward(100)
turtle.right(45)
turtle.forward(50)
```

…produces the following output:



24.1.3. Methods of Turtle and corresponding functions

Most of the examples in this section refer to a Turtle instance called `turtle`.

24.1.3.1. Turtle motion

`turtle.`**`forward`**(*distance*)

Parameters:	**distance** – a number (integer or float)

Move the turtle forward by the specified *distance*, in the direction the turtle is headed.

`turtle.`**`backward`**(*distance*)

Parameters:	**distance** – a number

Move the turtle backward by *distance*, opposite to the direction the turtle is headed.

`turtle.`**`right`**(*angle*)

Parameters:	**angle** – a number (integer or float)

Turn turtle right by *angle* units. (Units are by default degrees, but can be set via the `degrees()` and `radians()` functions).

`turtle.`**`left`**(*angle*)

Parameters:	**angle** – a number (integer or float)

Turn turtle left by *angle* units. (Units are by default degrees, but can be set via the `degrees()` and `radians()` functions).

24.1.3.4. Pen control

24.1.3.4.1. Drawing state

`turtle.`**`pendown`**()

Pull the pen down – drawing when moving.

`turtle.`**`penup`**()

Pull the pen up – no drawing when moving.

Example code – drawing a square:

```
import turtle

turtle.forward(50)
turtle.left(90)
turtle.forward(50)
turtle.left(90)
turtle.forward(50)
turtle.left(90)
turtle.forward(50)
turtle.left(90)
```