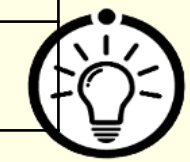
Learning Aims

- **Write Python code** that uses the Turtle module to draw shapes and patterns.
- **Use sequencing** (step-by-step instructions) to control the turtle's movement.
- **Apply iteration (loops)** to repeat actions and make code shorter and more efficient.
- **Debug and fix errors** in Turtle code to ensure programs run as intended.
- **Experiment creatively** by modifying Turtle commands to produce unique designs.

Turtle Cheetsheet

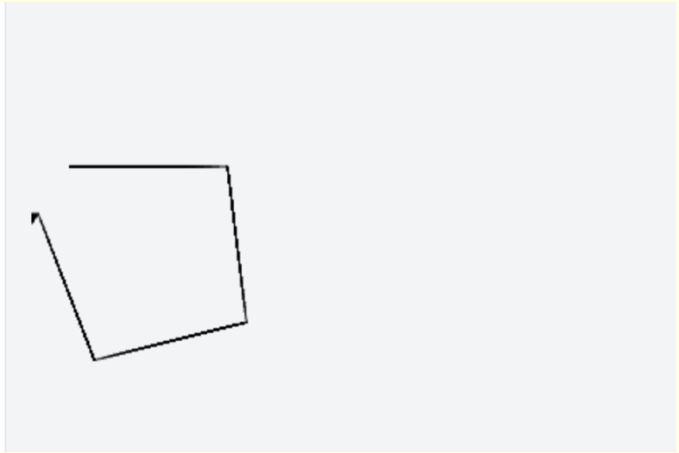
```
import turtle
bob = turtle.Turtle()
```

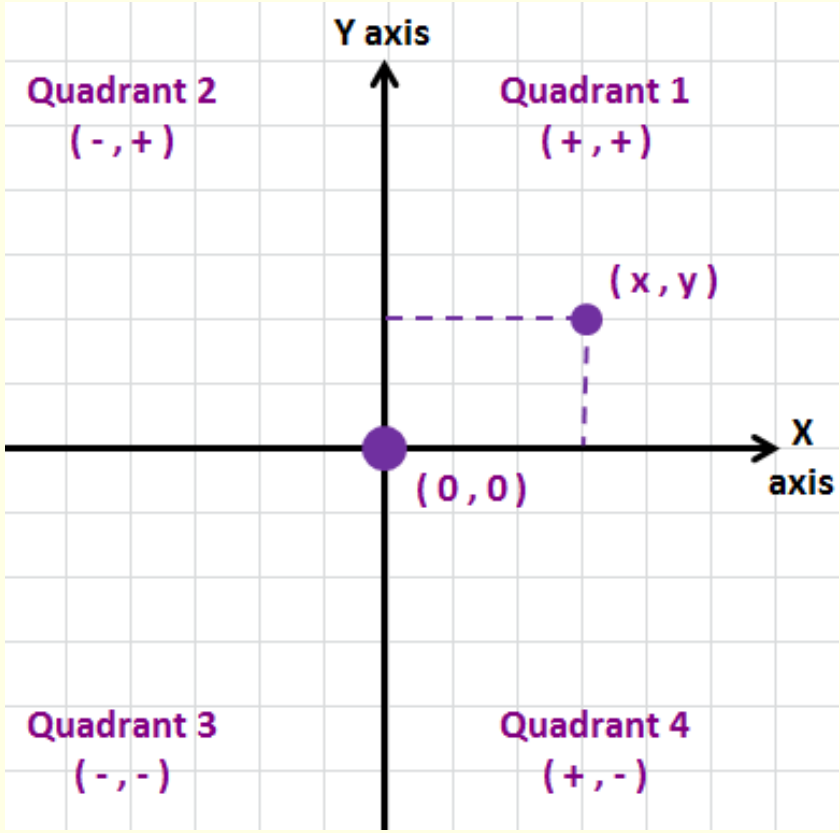
Function	Description	Example(s)
bob.forward(steps)	Moves forward for a number of steps	bob.forward(100)
bob.back(steps)	Moves backfor a number of steps	bob.back(100)
bob.left(degrees)	Turns anticlockwise the number of degrees	bob.left(90)
bob.right(degrees)	Turns clockwise the number of degrees	bob.right(90)
bob.home()	Moves to canvas origin (0,0)	bob.home()
bob.setpos(x,y)	Positions the bob at coordinates (x,y)	bob.setpos(5,50)
bob.reset()	Clears the drawing canvas, sends the bob home and resets variables to default values	bob.reset()
bob.hidebob()	Makes the bob invisible	bob.hidebob()
bob.showbob()	Makes the bob visible	bob.showbob()
bob.penup()	Lifts the pen up	bob.penup()
bob.pendown()	Puts the pen down	bob.pendown()
bob.pensize(width)	Makes the pen the size of "width"	bob.pensize(10)
bob.pencolor(color)	Sets the colour of the pen	bob.pencolor("red") bob.pencolor(0,55,255)



Example

```
import turtle
bob = turtle.Turtle()
bob.penup()
bob.setposition(-175, 50)
bob.pendown()
for i in range(4):
  bob.forward(100)
  bob.right(83)
```





Turtle challenges

Draw the following shapes (Remember that regular shapes use the same angles)

Use penup(), pendown() and setposition to draw the shapes in different areas of the canvas:

- Triangle
- Square
- Rectangle
- Regular Pentagon
- Hexagon
- Circle
- 5 pointed star
- 3 different shapes that are all different colours

Practice Exam Style Questions

Go to edublocks

1. Turtle Challenge
2. Turtle Gridlines
3. Turtle Shapes

Download the python file and open in MU

Complete the assignment and post your completed code

Exit Ticket

1. Did your program work first time?
2. What problems did you encounter when programming?
3. What bugs did you find when debugging your program?