Year 8 | Computer Science | Python Programming

Programming Constructs

Sequence

Start program
Complete action 1
Complete action 2
End program

Selection

Start program
IF condition is TRUE:
    Complete action 1
ELSE:
    Complete action 2
End program

Iteration
For loop

Start program
FOR x number of times:
    Complete action 1
    Complete action 2
End program

While loop

Start program
WHILE condition is TRUE:
    Complete action 1
    Complete action 2
End program

Zero index

Lists have a place order starting at 0

Index	0	1	2
Value	3	"A"	8.7

Data Types

String - str()	"A sequence of characters inside quotation marks usually words or sentences."
Character – char()	Single character inside quotation marks: **"A"**
Integer – int()	Whole numbers: **7**
Float – float()	Decimal numbers: **7.5**
Boolean – bool()	Can only be: **TRUE** or **FALSE**

Logical Operators

Less than	5 < 10
More than	10 > 5
Equal to	5 == (2+3)
Less than OR equal to	5 <= 10
NOT equal to	5 != 10

Python Turtle basic commands

```
#Starter commands
import turtle
t = turtle.Turtle()
t.forward(100) #Move 100 pixels
t.left(90) #Turn left 90 degrees
t.penup() #Lift pen
t.pendown() #Lower pen
```

Variables

Variables are used to **store** some data that we can use later in our code. Remember to:

- Use a descriptive name.
- No spaces in the name.
- Use one equals sign to store something in it.
- Call it by name to reuse it

```
age = 50
name = "Bob"
print(name, " is ", age, " years old")
```

Inputs and Outputs

We show information to the user with the keyword **print**.

```
print("This is a message ")
print(5 + 5)
```

We get information from the user with the keyword **input**. Here the user is asked to enter their name, whatever they type in as an input is stored in the

ariable **myName**.

```
myName = input("What is your name?")
```

Python Turtle filling shapes

```
t.fillcolor("red") #set fill colour to red
t.begin_fill() #Start filling shape
t.end_fill() #End filling shape
```