

Input & Output

Output a message to the user

```
print("Hello There")
```

Ask the user for a text input (string)

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

Ask the user for a number input (Integer)

```
age = int(input("How old are you?"))
```

Add a new line

```
name = input("What is your name?\n")
```

Concatenate strings

```
print("Hello "+ name )
```

Concatenate different data types

```
print("You are",age ,"years old")
```

Output the first letter

```
print(name[0])
```

Uppercase/Lowercase format

```
print(name.upper()) | print(name.lower())
```

Uppercase then lowercase format

```
print(name[0].upper()+name[1:].lower())
```

IF Statements

IF

```
x = 3
if x == 3:
    print("x = 3")
```

IF / ELSE

```
x = 7
if x > 8:
    print("Yes")
else:
    print("No")
```

ELIF

```
x = 4
if x > 8:
    print("A")
```

IF Statements (cont)

```
elif x > 5:
    print("B")
elif x > 2:
    print("C")
else:
    print("F")
```

Remember to indent your code [Press the 'Tab' button n the keyboard]

Editing Lists

Replace third item

```
mylist[2] = 43
```

Insert in position

```
mylist.insert(1, "OCR")
```

Add to the end of a list

```
mylist.append("GCSE")
```

Remove all Sciences

```
mylist.remove("Science")
```

Delete all items

```
mylist = []
```

Delete third item

```
del mylist[2]
```

Reverse list order

```
mylist.reverse()
```

Sort list order

```
mylist.sort()
```

Join items using a space

```
print(" ".join(mylist))
```

Dictionaries

Creating a dictionary

```
mydict = {"a":1, "b":2, "c":3}
```

Returns the value of b

```
mydict["b"]
```

Check in dictionary

```
"c" in mydict
```

Dictionaries (cont)

Display the keys

```
mydict.keys()
```

Display keys and items

```
mydict.items()
```

Inequalities

Equal to

```
x == 3
```

Not equal to

```
x != 4
```

Less than / equal to

```
x <= 2
```

More than / equal to

```
x >= 1
```

Between two numbers

```
<= 3 < x <= 12
```

AND

```
x == 1 and z == 4
```

OR

```
x == "A" or x == "a"
```

For Loop

Repeat 5 times

```
for x in range (5):
    print("Owen")
```

Repeat length of string

```
for x in "Nathan":
    print(x)
```

Count from 1 to 10

```
for x in range (1,11):
    print(x)
```

Count from 1 to 10 in 2's

```
for x in range (1,11,2):
    print(x)
```

Repeats code a predefined number of times

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While Loops

```
Repeat until false
while True:
    print("Hello There!")
```

```
Using 'break' to end the loop
while True:
    x = input("Say Yes")
    if x == "Yes":
        break
```

```
Until x is more than 100
x = 0
while x < 100:
    x = int(input("x ?"))
```

A while loop will repeat infinitely until the program or user input tells it to stop
Repeats code until a condition is met [within the program]

Creating And Using Files

```
Create document
myfile = open("Filename.txt", "w")
```

```
Add data to the text file
myfile.write("Hello World")
```

```
Reads entire file into one string
myfile.read()
```

```
Reads first 4 characters into one string
myfile.read(4)
```

```
Reads one line of a file
myfile.readline()
```

```
Reads entire file into a list of strings, one per line
myfile.readlines()
```

```
Steps through lines in a file
for eachline in myfile:
```

```
Close the file
myfile.close()
```

("w" write, "r" read, "a" append)
.csv will create a spreadsheet

Demonstrating knowledge

```
Annotate / Comment on a line of code
#short comments
```

```
Annotate / comment on a block of code
"""for longer comments"""
```

Always annotate you code

Variables

```
Creating a variable
name = "Josh"
```

```
Length of string
len(name)
```

```
Print a variable
print(name)
```

```
Covertint [String↔Integer]
str(age) 'or' int(age)
```

All variables are strings [str] by default

Numbers

```
Addition
2+2
```

```
Subtraction
4-1
```

```
Multiplication
3*5
```

```
Division
15/10
```

```
To the power of...
1.5**2
```

```
Multiplying A String
"Ethan" *14
```

Numbers follow the BIDMAS / BODMAS rule

Creating And Accessing Lists

```
Creating a list
mylist = ["Computer", "Science", 17]
```

```
Output full list
print(mylist)
```

```
Access first item
mylist[0]
```

```
Access first to second
mylist[1:2]
```

```
Access third item to the end
mylist[2:]
```

```
Access up to the third item
mylist[:2]
```

```
Check for in list
"Computer" in mylist
```

```
Concatenate
mylist + ["a"]
```

```
Remove third item and use
mylist.pop(2)
```

```
Remove last item and use
mylist.pop()
```

```
Find position in the list
mylist.index(Science)
```

```
Count appearances
mylist.count(17)
```

```
Add values
sum(mylist)
```

```
Length of List
len(mylist)
```

```
Compare lists
cmp(mylist, list)
```

```
Biggest number in list
max(mylist)
```

```
Smallest number in list
min(mylist)
```