Python Cheatsheet

COMMON COMMANDS

Command	Pseudocode	Python
User input	INPUT(num) READ(num)	name = input("Enter a number: ") num = int(input("Enter a number: ")
User output	OUTPUT("Hello world!") PRINT("Hello world!")	print"Hello world!")
Assignment	←	=
Equals (comparison)	=	==
OR	x < 1 OR x > 10	x < 1 or x > 10
AND	x > 1 AND x < 10	x > 1 and x < 10
Arrays	scores ← [] scores[0] ← 15 scores[1] ← 16 scores.append(12) scores.push(12) scores.length	scores = [] scores.append(12) scored.push(12) len(scores)

PROGRAMMING CONSTRUCTS

One-way Selection

Pseudocode

```
speed ← 50
IF speed > 60 THEN
        PRINT("You are speeding")
END IF
```

Python

```
int speed = 50
if speed > 60:
        print("You are speeding")
```

Two-way Selection

Pseudocode

```
speed ← 50
IF speed > 60 THEN
        PRINT("You are speeding")
ELSE
        PRINT('You are not speeding – well done!")
END IF
```

Python

```
int speed = 50
if speed > 60:
        print("You are speeding")
else:
        print('You are not speeding – well done!")
```

Multi-way Selection

Pseudocode 1

```
speed ← 50
IF speed < 20 THEN
        PRINT("You are going to slow")
ELSE IF speed > 60 THEN
        PRINT('You are speeding")
ELSE
        PRINT('You are not speeding – well done!")
END IF
```

Pseudocode 2

```
speed ← 50
CASE speed OF
        < 20: PRINT("You are going too slow")
        <= 60: PRINT ("You are not speeding – well
        done!")
        > 60: PRINT("You are speeding")
END CASE
```

Python

```
speed = 50
if speed < 20:
        print("You are going to slow")
elif speed > 60:
        print ("You are speeding")
else:
        print ('You are not speeding – well done!")
```

Test First Loop

Pseudocode

```
Num ← 0
WHILE num < 10
        PRINT("The number is " + num)
        num ← num + 1
END WHILE
```

Python

```
num = 0
while num < 10:
        print(f"The number is {num}")
        num += 1
```

Test Last Loop

Pseudocode

```
num ← 0
REPEAT
        PRINT("The number is " + num)
        num ← num + 1
UNTIL num = 10
```

Python

Python does not have a test last loop

Fixed Length Loop

Pseudocode

```
FOR num ← 1 TO 10
        PRINT("The number is " + num)
END FOR
```

Python

```
for i in range(1, 11):
        print(f"The number is {num}")
```

MODULARISATION

Module

Pseudocode

```
MODULE CalculateCost(num, price)
        cost ← num * price
END CalculateCost
```

Python

```
def CalculateCost(num, price)
        cost = num * price
```

Function

PseudoCode

```
FUNCTION TotalCost(num, price)
        RETURN num * price
END TotalCost
```

Python

```
def TotalCost(int num, int price)
        return num * price
```

PYTHON BASICS

String Manipulation with Python

```
msg = "Hello";
name = "Peter";
msg = msg + name        → "HelloPeter"
len(msg)                → 11
msg.upper()             → "HELLOPETER"
msg.lower()             → "hellopeter"
msg[4]                  → 'o'

my_str = 'x' * 4        → "xxxx"
```

Number manipulation

```
myint = int("234");     → 234
num = float("234.457297"); → 234.457297
Math.Round(num, 4);             → 234.4573
```

Program output

```
print("output message")  → writes text to console with a new line
```

Program input

```
msg = input("Enter a message)   → reads in a string
num = int(input("Enter number: ") → reads in a string and converts it to an integer
```

List Manipulation

```
newlist = [4, 7, 3]
newlist.append(6)       → [4, 7, 3, 6]
newlist.insert(2, 9)    → [4, 7, 9, 3, 6]

newlist.index(3);       → 4 // returns the index of the element with the value 3

newlist.remove(9)       → [4, 7, ,3, 6] # removes element with the value 9
newlist.pop(0)          → [7, 3, 6] # removes the element at index 0
```