N5 Python Cheat sheet

Initialising Variables

Example	Data Type
firstname = "John"	**str**
age= 20	**int**
book_price= 20.5	**float**
categories= ["junior", "teen", "adult"] scores= [0]*6 scores=[0,0,0,0,0,0]	**array**
has_voucher= True has_voucher= False	**bool**

Python Variable Name Rules

- A variable name must start with a letter or the underscore character
- A variable name cannot start with a number
- A variable name can only contain alpha-numeric characters and underscores (A-z, 0-9, and _)
- Variable names are case-sensitive (age, Age and AGE are three different variables)

User Input

- Reading a string(word)

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

- Reading an **integer** (whole number)

  temperature= **int**(**input**("What is the temperature today?"))

- Reading a **float**(real, decimal number)

book_price= **float**(**input**("What is the price of the book?"))

Changing the value of a variable
#the new content of the total is the previous content of the total plus the book price content

total=**total**+book_price

Print(output) to the user
print("The total price is:")

print(total)

print(The total price is: " + total)

Arithmetic (Maths) Operations

Operation	Symbol
Addition	+
Subtraction	-
Multiplication	*
Division	/
Exponential (Powers)	**
Modulo (Division Remainder)	%

String Concatenation(Joining Strings)
full_name= first_name **+** sur_name

use **str()** to make numbers to strings before joining them with +

print("Hi" **+** full_name **+** ", have a nice **+ str(day) +** "of October!")

Selection (If, Else)

```
a = 100
b = 32
if b > a:
  print("b is greater than a")
else:
  print("a is greater than b")
```

Multiple Selection

```
if b > a:
  print("b is greater than a")

elif a > b:

  print("a is greater than b")
else:
  print("a is equal to b")
```

Comparisons

Comparison	Symbol
Equal to	==
Not equal to	!=
Greaterthan	>
Greater than or equal to	>=
Less than	<
Less than or equal to	<=

Complex Conditions

#Using the Logical Operators and, or, not

and	or	not

a = 200
b = 33
c = 500
if a > b **and** c > a:
  print("Both conditions are True")
	a = 200
	b = 33
	c = 500
	if a > b **or** a > c:
	  print("At least one of the conditions is True")
		a = 200
		b = 33
		
		if **not**(a<b) :
		  print("a is larger than b")

Conditional Loop (while)

```
counter = 1

#Will print the values 1,2,3,4,5
while counter < 6:
  print(counter)
  counter= counter+1
```

Fixed loop (for)

```
#Will print the values 1,2,3,4,5

for counter in range(1, 6):
  print(counter)
```

Input Validation

Python	Comment
score= int(input("Please enter the score:"))	#Initialise score as int from user input
while score<0 or score>10:	#Conditional loop – Instructions inside the loop will be repeated until the score is between 0 and 10
print("The score should be between 0 and 10!")	#Print an error message
score= int(input("Please enter the score:"))	#Ask for a new valid score

Traversing an array

Python	Comment
ages=[13,34,32,2,62,45,18,14,43,44] adults = 0	#initialising array and variable
for counter in range (0,10):	#Fixed loop - Instructions inside the loop will be repeated 10 times

Python	Comment
if ages[counter] >=18:	#Checks if the current value in the array is >= 18
adults= adults+1	#Adds 1 to the current value in the variable adults

Running total

Python	Comment
scores=[0,2,4,5,1,0] **total =0**	#initialising array and variable
for counter in range (0,6):	#Fixed loop - Instructions inside the loop will be repeated 6 times (from 0 to 5)
total= total + scores[counter]	# Each time the new total is previous value of total + the current scores element

Predefined Functions	
x= len(cars)	#Length of array # Returns the number of elements in an array
x = **round**(5.76543, 2) print(x) x = **round**(5.76543) print(x)	# Rounds the value in the variable x to 2 decimal places #Default is round to integer
import random x=random.**random**() x=random.**randint**(3, 9)	#**!!!Put this code at the top of the program** #Returns a random decimal between 0 and 1 #Returns a random integer between 3 and 9 including