Python Basics Cheatsheet 2.0

Reading Files

f = open("my_file.txt","r")
file_as_string = f.read()
- Open the file my_file.txt and assign its contents to s

import csv
f = open("my_dataset.csv","r")
csvreader = csv.reader(f)
csv_as_list = list(csvreader)
- Open the CSV file my_dataset.csv and assign its data to the list of lists csv_as_list

General

help(x) - Show documentation for the **str** data type
help(print) - Show documentation for the **print**() function

print(x)= Print the value of x
type(x)= Return the type of the variable x

Dictionaries

d = {"M":"Male","F":"Female","T":"Third Gender"} -
Create a dictionary with keys of "M", "F", and "T" and corresponding values of "Male", "Female", and "Third Gender"

d["M"] - Return the value from the dictionary d that has the key "M"

d.get("O","Sorry") - Return the value from the dictionary d that has the key "O", or the string "Sorry" if the key "O" is not found in d

d.keys() - Return a list of the keys from d
d.values() - Return a list of the values from d
d.items() - Return a list of (key, value) pairs from d

max(d, key=d.get) - Return the key that corresponds to the largest value in d

min(d, key=d.get) - Return the key that corresponds to the smallest value in d

Numeric Types & Mathematical Operations

i = int("5") - Convert the string "5" to the integer 5 and assign the result to i
f = float("2.5") - Convert the string "2.5" to the float value 2.5 and assign the result to f

5 + 5	Addition
5 - 5	Subtraction
10 / 2	Division
5 * 2	Multiplication
3 ** 2	Raise 3 to the power of 2 (or 32)
27 ** (1/3)	The 3rd root of 27 (or 3√27)
x += 1	Assign the value of x + 1 to x
x -= 1	Assign the value of x - 1 to x

Functions

The body of a function is defined through indentation.

```
import random

def calculate(addition_one, addition_two, exponent=1, factor=1):
    result = (value_one + value_two) ** exponent * factor
    return result
```

- Define a new function **calculate** with two required and two optional named arguments which calculates and returns a result.

addition(3, 5, factor=10) - Run the addition function with the values 3 and 5 and the named argument 10

Boolean Comparisons

x == 2	Test whether x is equal to 2
x != 2	Test whether x is not equal to 2
x > 2	Test whether x is greater than 2
x < 2	Test whether x is less than 2
x >= 2	Test whether x is greater than or equal to 2
x <= 2	Test whether x is less than or equal to 2
x == 2 or name == "tarun"	Test whether x is equal to 2 or name is equal to "tarun"
x == 2 and name == "tarun"	Test whether x is equal to 2 and name is equal to "tarun"
2 in l	Checks whether the value 2 exists in the list
"M" in d	Checks whether the value "M" exists in the keys for d

If Statements and Loops

The body of if statements and loops are defined through indentation.

```
if x > 5:
    print("{} is greater than five".format(x))
elif x < 0:
    print("{} is negative".format(x))
else:
    print("{} is between zero and five".format(x))
```

- Test the value of the variable x and run the code body based on the value

```
for value in l:
    print(value)
```

- Iterate over each value in l, running the code in the body of the loop with each iteration

```
while x < 10:
    x += 1
```

- Run the code in the body of the loop until the value of x is no longer less than **10**