Module 1: Setting up Python Environment

Excerise 1

Check python version

Python –version

Excerise 2

1. List all the packages installed using pip command

Pip list -u

1. Provide a command to uninstall and install a python package

To install

Pip install <package name>

To Install

Pip uninstall <package name>

1. Provide a command to install a python package from a particular version

pip install 'PackageName==1.4'

1. Write a command to search a particular package from Python Package Index

Pip serach <package>

5. Create a virtual environment for the project folder and activate it

$ pip install virtualenv

$ virtualenv –version

$ virtualenv my\_project

$ virtualenv -p /usr/bin/python3 virtualenv\_name

$ source virtualenv\_name/bin/activate

Module 2 : STRING MANIPULATION

Write a python program to count the number of occurrences of each word in a long sentence.

def word\_count(str):

counts = dict()

words = str.split()

for word in words:

if word in counts:

counts[word] += 1

else:

counts[word] = 1

return counts

print( word\_count('the quick brown fox jumps over the lazy dog.'))

Write a python program to remove nth index character from a non empty string

def remove(string, n):

first = string[:n]

last = string[n+1:]

return first + last

string=input("Enter the sring:")

n=int(input("Enter the index of the character to remove:"))

print("Modified string:")

print(remove(string, n))

Write a program that accepts sequence of sentences as input and prints the lines after making all characters in the sentence capitalized.

Suppose the following input is supplied to the program:

Hello all

Welcome to Python assessment

Then, the output should be:

HELLO ALL

WELCOME TO PYTHON ASSESSMENT

lines = []

while True:

l = input()

if l:

lines.append(l.upper())

else:

break;

for l in lines:

print(l)

Module 3 : Collections

Exercise 1

1. Write a Python program to convert an array to an ordinary list with the same items.

from array import \*

array\_num = array('i', [1, 3, 5, 3, 7, 1, 9, 3])

print("Original array: "+str(array\_num))

num\_list = array\_num.tolist()

print("Convert the said array to an ordinary list with the same items:")

print(num\_list)

1. By using list comprehension, write a program to print the list after removing the 0th, 2nd, 4th,6th numbers in a array of size 10

from array import \*

numbers = [1,2,3,4,5,6,7,8,9,10]

numbers = [x for (i,x) in enumerate(numbers) if i not in (0,2,4,6)]

print(numbers)

1. Write a python program to generate a 5\*6 2D array which has values based on the formula : - a[i][j] = i\*j

row\_num = int(input("Input number of rows: "))

col\_num = int(input("Input number of columns: "))

multi\_list = [[0 for col in range(col\_num)] for row in range(row\_num)]

for row in range(row\_num):

for col in range(col\_num):

multi\_list[row][col]= row\*col

print(multi\_list)

Module 4 : CONDITIONALS STATEMENTS

1. Write a Python program to check the validity of password input by users.

Validation points:

At least 1 letter between [a-z]

Atleast 1 letter between [A-Z].

At least 1 number between [0-9].

At least 1 character from [$#@].

Minimum length 5 characters.

Maximum length 10 characters.

import re

p= input("Input your password")

x = True

while x:

if (len(p)<5 or len(p)>10):

break

elif not re.search("[a-z]",p):

break

elif not re.search("[0-9]",p):

break

elif not re.search("[A-Z]",p):

break

elif not re.search("[$#@]",p):

break

elif re.search("\s",p):

break

else:

print("Valid Password")

x=False

break

if x:

print("Not a Valid Password")

Module 5 : LOOPS AND ITERABLES

1. Write a program that accepts a comma separated sequence of words as input and prints the words in a comma-separated sequence after sorting them alphabetically.

Suppose the following input is supplied to the program:

without,hello,bag,world

Then, the output should be:

bag,hello,without,world

items = input("Input comma separated sequence of words")

words = [word for word in items.split(",")]

print(",".join(sorted(list(set(words)))))

1. Write a program to find Armstrong number and prime numbers between 300 - 500

for i in range (300,500):

sum=0

temp=i

while temp > 0:

digit = temp % 10

sum += digit \*\* 3

temp //= 10

if i==sum:

print("Armstrong number")

print(i)

if i>1:

for j in range(2,i):

if(i % j) == 0:

break

else:

print("Prime number")

print(i)