**Saroj Banjara**

**WEEKEND ACTIVITY ON FUNCTIONS**

1. Write a program to reverse a string.

Sample data: “1234abcd”

Expected Output: “dcba4321”

string = '1234abcd'

def reverse():

print('Reversed string: ', string[::-1])

reverse() *#returns dcba4321*

2. Write a function that accepts a string and calculate the number of upper case letters and lower case letters.

string = 'ABCDabcdfjdkjdkjHgKKKldldfj'

def upper():

count2 = 0

for i in string:

if i.isupper():

count2 = count2 + 1

print('No. of Upper case characters: ', count2)

def lower():

count1 = 0

for i in string:

if i.islower():

count1 = count1 + 1

print('No. of Lower case characters: ', count1)

upper()

lower()

*#Returns:*

*No. of Upper case characters: 8*

*No. of Lower case characters: 19*

3. Create a function that takes a list and return a new list with unique elements of the first list.

list1 = ['a', 'b', 'c', 'd', 'd', 'c', 'b', 'a', 'g', 'f','f','g']

def unique\_list():

unique = set(list1)

print(list(unique))

unique\_list() *# returns : ['a', 'g', 'd', 'f', 'c', 'b']*

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

def hyphen():

word = input("Enter some words: ")

for i in word:

word = word.split()

word.sort()

word = '-'.join(word)

print(word)

hyphen()

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

Sample input:

Hello world

Practice makes perfect

Expected Output:

HELLO WORLD

PRACTICE MAKES PERFECT

def capital():

lines = []

while True:

s = input("Enter some lines of words, then press enter: ")

if s:

lines.append(s.upper())

else:

break

for i in lines:

print(i)

capital()

6. Define a function that can receive two integral numbers in string form and compute their sum and print it in console.

num1 = input("Enter the first number: ")

num2 = input("Enter the second number: ")

def add(num1, num2):

return int(num1) + int(num2)

print('sum of two numbers:', add(num1,num2))

7. Define a function that can accept two strings as input and print the string with maximum length in console. If two strings have the same length, then the function should print all strings line by line.

def maximum\_length():

str1 = input("Enter the first string: ")

str2 = input("Enter the second string: ")

if len(str1) > len(str2):

print(str1)

elif len(str2) > len(str1):

print(str2)

else:

print(str1)

print(str2)

maximum\_length()

8. Define a function which can generate and print a tuple where the value are square of numbers between 1 and 20.

def print\_tuple():

l = list()

for i in range(1,20):

l.append(i \*\* i)

print(tuple(l))

print\_tuple()

9. Write a function called showNumbers that takes a parameter called limit. It should print all the numbers between 0 and limit with a label to identify the even and odd numbers.

Example: If the limit is 3 , it should print:

0 EVEN

1 ODD

2 EVEN

3 ODD

limit = int(input("Enter the limit: "))

def showNumbers(limit):

for i in range(0,limit+1):

if i % 2 == 0:

print (i, 'EVEN')

elif not i % 2 == 0:

print(i, 'ODD')

showNumbers(limit)

**Higher order functions and exception handling-**

1. Write a program which can filter() to make a list whose elements are even number between 1 and 20 ( both included)

li = filter(lambda x: x % 2 == 0, range(20+1))

li = list(li)

print('Even numbers = ', li)

*# returns [0, 2, 4, 6, 8, 10, 12, 14, 16, 18, 20]*

1. Write a program which can map() and filter() to make a list whose elements are square of even number in [1,2,3,4,5,6,7,8,9,10]

Hints: Use map() to generate a list.

Use filter() to filter elements of a list

Use lambda to define anonymous functions

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

li = list(filter(lambda x: x % 2 == 0, li))

li = list(map(lambda x: x \* x, li))

print('Even squared numbers = ', li)

*#returns [4, 16, 36, 64, 100]*

1. Write a function to compute 5/0 and use try/except to catch the exceptions

def output():

return 5/0

try:

output()

except ZeroDivisionError:

print ("division by zero!")

1. Flatten the list [[1,2,3].,[4,5],[6,7,8]] into [1,2,3,4,5,6,7,8] using reduce

import functools

import operator

li = [[1,2,3],[4,5],[6,7,8]]

li = functools.reduce(operator.concat,li)

print(li) *#prints [1,2,3,4,5,6,7,8]*

1. Goal : Turn [1,2,3,4,5,6,7] to 1234567

li = [1, 2, 3, 4, 5, 6, 7]

intg = 0

for i in li:

intg = i

print(intg,end ='') *#prints 1234567*

1. What is the output of the following codes:

* def foo():

try:

return 1

finally:

return 2

k = foo()

print(k)

***# RETURNS 2***

* def a():

try:

f(x, 4)

finally:

print('after f')

print('after f?')

a()

**# It gives the NameError: name ‘f’ is not defined**