Name – Aparna Likhitkar
Roll No – 36 div -A
SYMCA Subject – python programming

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(Approved by AICTE, Recognized by DTE, Mah.; Affiliated to SPPU)

INDEX Python Programming Lab

Academic Year: 2020-2021(Jan Jun 2021) **Class: MCA –II(Div :A)**

Journal Submission Part C

1. Write a Python program to find those numbers which are divisible by 7 and multiple of 5, between 1500 and 2700 (both included).
2. Write a Python program which takes two digits m (row) and n (column) as input and generates a two-dimensional array. The element value in the i-th row and j-th column of the array should be i*j.
3. Write a Python program which accepts a sequence of comma separated 4 digit binary numbers as its input and print the numbers that are divisible by 5 in a comma separated sequence. Sample Data : 0100,0011,1010,1001,1100,1001

Expected Output : 1010

4. Write a Python program that accepts a string and calculate the number of digits and letters. Sample Data : Python 3.2

Expected Output :

Letters 6

Digits 2

5. Write Python Program to find the most occurring number in a string using Regex
6. Write Python Program to Check if email address valid or not using RegEx
7. Write Python program to find files having a particular extension using RegEx
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11. Python Program to obtain the line number in which given word is present

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12. Write a NumPy program to create a 4x4 array, now create a new array from the said array swapping first and last, second and third columns.

13. Write a NumPy program to sort a given array by row and column in ascending order.

14. Write a NumPy program to create a new array of given shape (5,6) and type, filled with zeros.

15. Write a NumPy program to check two random arrays are equal or not. Sample Output:

First array:
[1 0 1 0 1 1]
Second array:
[0 0 1 1 1 0]
Test above two arrays are equal or not!
False

16) Write a NumPy program to find the most frequent value in an array.

Sample Output:

Original array:

[6 9 5 1 7 5 1 0 1 5 5 0 8 9 0 7 0 7 6 5 1 1 9 5 3 8 7 9 6 3

4 5 9 7 2 7 0 2 2 6]

Most frequent value in the above array:

5

17. Write a Pandas program to add, subtract, multiple and divide two Pandas Series.

Sample Series: [2, 4, 6, 8, 10], [1, 3, 5, 7, 9]

18. Write a python program which show the insert operation on mysql DB

19. Write a python program which show the update operation on mysql DB

20. Write a python program which show the Delete operation on mysql DB

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1) Write a Python program to find those numbers which are divisible by 7 and multiple of 5, between 1500 and 2700 (both included).

```
nl=[]

for x in range(1500, 2701):

   if (x%7==0) and (x%5==0):

      nl.append(str(x))

print (','.join(nl))
```

```
IPython 7.19.0 -- An enhanced Interactive Python.

In [1]: runfile('C:/Users/aparn/OneDrive/2.MCA/SYMCA/Sem_4/
Python Programs/untitled0.py', wdir='C:/Users/aparn/
OneDrive/2.MCA/SYMCA/Sem_4/Python Programs')
1505,1540,1575,1610,1645,1680,1715,1750,1785,1820,1855,1890
,1925,1960,1995,2030,2065,2100,2135,2170,2205,2240,2275,231
0,2345,2380,2415,2450,2485,2520,2555,2590,2625,2660,2695

In [2]:
```

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2) Write a Python program which takes two digits m (row) and n (column) as input and generates a two-dimensional array. The element value in the i-th row and j-th column of the array should be 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)
```

```
In [2]: runfile('C:/Users/aparn/OneDrive/2.MCA/SYMCA/Sem_4/
Python Programs/untitled0.py', wdir='C:/Users/aparn/
OneDrive/2.MCA/SYMCA/Sem_4/Python Programs')

Input number of rows: 5

Input number of columns: 4
[[0, 0, 0, 0], [0, 1, 2, 3], [0, 2, 4, 6], [0, 3, 6, 9],
[0, 4, 8, 12]]

In [3]:
```

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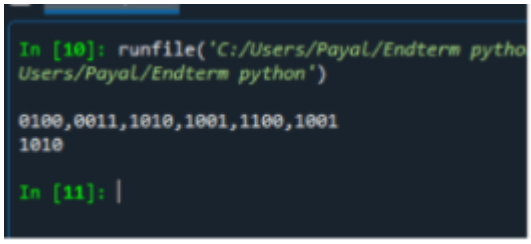
3) Write a Python program which accepts a sequence of comma separated 4 digit binary numbers as its input and print the numbers that are divisible by 5 in a comma separated sequence. Sample Data : 0100,0011,1010,1001,1100,1001 Expected Output : 1010

```
items = []
num = [x for x in input().split(',')]
for p in num:
    x = int(p, 2)
    if not x%5:
        items.append(p)
print(','.join(items))
```



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4) Write a Python program that accepts a string and calculate the number of digits and letters.

```
s = input("Input a string")
d=l=0
for c in s:
    if c.isdigit():
        d=d+1
    elif c.isalpha():
        l=l+1
    else:
        pass
print("Letters", l)
print("Digits", d)
```

```
In [3]: runfile('C:/Users/aparn/OneDrive/2.MCA/SYMCA/Sem_4/Python Programs/
untitled0.py', wdir='C:/Users/aparn/OneDrive/2.MCA/SYMCA/Sem_4/Python
Programs')

Input a string aparna 1236587
Letters 6
Digits 7

In [4]:
```

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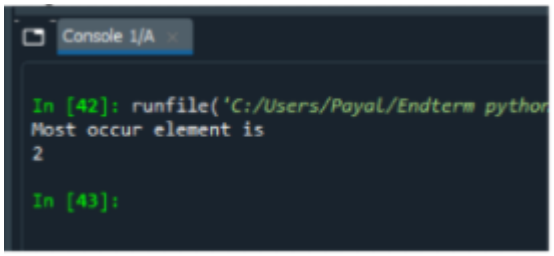
5) Write Python Program to find the most occurring number in a string using Regex

```
import re

from collections import Counter

def _count_occr_number(_input_str):

#This Program will return the max occurred number but

# if there is no number which occured morethan 1 time then it will return the last one and

#same for same number of occurrence it will return last number which is occured more .

arr = re.findall(r'[0-9]+', _input_str)

max = 0

max_num = 0

c = Counter(arr)# counter will store all the number with

# their frequencies

for x in list(c.keys()):

if c[x] >= max:

max = c[x]

max_num = int(x)

return max_num

input = input(str("Enter String.... "))

print(_count_occr_number(input))
```



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6) Write Python Program to Check if email address valid or not using RegEx

```
# Python program to validate an Email


# import re module


# re module provides support

# for regular expressions

import re


# Make a regular expression

# for validating an Email

regex = '^(\w|\.|\_|\-)+[@](\w|\_|\-|\.)+[.]\w{2,3}$'


# Define a function for

# for validating an Email



def check(email):


        # pass the regular expression

        # and the string in search() method

        if(re.search(regex, email)):

                print("Valid Email")


        else:

                print("Invalid Email")



# Driver Code

if __name__ == '__main__':
```

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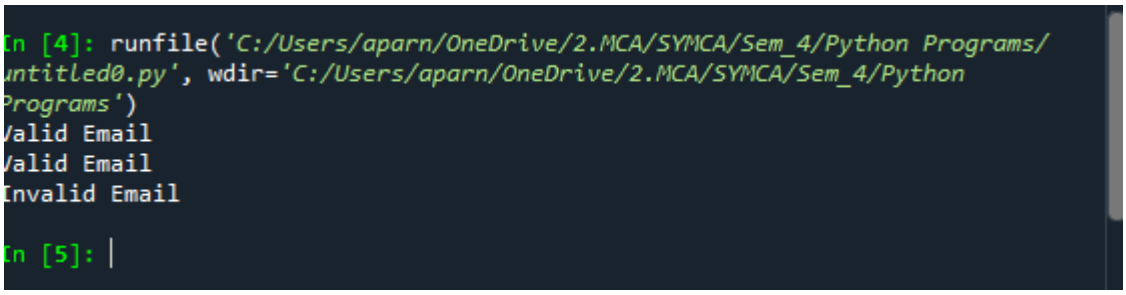
```
# Enter the email

email = "aparna.likhitkar@gmail.com"


# calling run function

check(email)


email = "my.ownsite@our-earth.org"

check(email)


email = "ap326.com"

check(email)
```



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7) Write Python program to find files having a particular extension using RegEx

```
# import library
import re


# list of different types of file
filenames = ["hello.html", "hii.xml",
                        "computer.txt", "pic.jpg"]


for file in filenames:
        # search given pattern in the line
        match = re.search("\.xml$", file)


        # if match is found
        if match:
                print("The file ending with .xml is:",
                        file)
```

```
In [5]: runfile('C:/Users/aparn/OneDrive/2.MCA/SYMCA/Sem_4/Python Programs/
untitled0.py', wdir='C:/Users/aparn/OneDrive/2.MCA/SYMCA/Sem_4/Python
Programs')
The file ending with .xml is: hii.xml

In [6]:
```

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8) Write Python program to read file word by word and read character by character from a file

```
# Python program to read
# file word by word

# opening the text file
with open('file.txt','r') as file:

    # reading each line
    for line in file:

        # reading each word
        for word in line.split():

            # displaying the words
            print(word)
```

```
In [6]: runfile('C:/Users/aparn/OneDrive/2.MCA/SYMCA/Sem_4/Python Programs/
untitled0.py', wdir='C:/Users/aparn/OneDrive/2.MCA/SYMCA/Sem_4/Python
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information
```

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9) Python – Get number of characters, words, spaces and lines in a file

```
Def counter(fname):
        num_words = 0
        num_lines = 0
        num_charc = 0
        num_spaces = 0
        with open(fname, 'r') as f:
                for line in f:

                        num_lines += 1

                        word = 'y'

                        for letter in line:

                                if (letter != ' ' and word == 'Y'):

                                        num_words += 1

                                        word = 'N'

                                elif (letter == ' '):

                                        num_spaces += 1

                                        word = 'Y'
```

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```
                for i in letter:

                    if(i !=" " and i !="\n"):

                        num_charc += 1


    print("Number of words in text file: ", num_words)


    print("Number of lines in text file: ", num_lines)


    print('Number of characters in text file: ', num_charc)


    print('Number of spaces in text file: ', num_spaces)

# Driver Code:
if __name__ == '__main__':
    fname = 'file.txt'
    try:
        counter(fname)
    except:
        print('File not found')
```

```
In [8]: runfile('C:/Users/aparn/OneDrive/2.MCA/SYMCA/Sem_4/Python Programs/untitled0.py', wdir='C:/Users/aparn/One
Number of words in text file:  14
Number of lines in text file:  3
Number of characters in text file:  60
Number of spaces in text file:  12

In [9]:
```

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10) Python program to Count the Number of occurrences of a key-value pair in a text file

```
f = open("file.txt", "r")
d = dict()

for res in f:

        res = res.strip()


        res = res.lower()


        lines = res.split()

        for line in lines:

                if line in d:


                        d[line] = d[line]+1
                else:


                        d[line] = 1

f.close()
```

```
# Printing Result

for key in list(d.keys()):

        print("The count of {} is {}".format(key,d[key]))
```

```
In [9]: runfile('C:/Users/aparn/OneDrive/2.MCA/SYMCA/Sem_4/Python Programs/untitled0.py',
The count of python is 2
The count of is is 2
The count of esay is 1
The count of language is 1
The count of pyton is 1
The count of the is 2
The count of task is 1
The count of to is 1
The count of read is 1
The count of information is 1
```

11) Python Program to obtain the line number in which given word is present

```
df = open("file.txt")



read = df.read()


df.seek(0)

read

print(read)

# create empty list

arr = []



line = 1

for word in read:

        if word == '\n':

                line += 1

print("Number of lines in file is: ", line)


for i in range(line):
```

```
        arr.append(df.readline())


def findline(word):
        for i in range(len(arr)):
                if word in arr[i]:
                        print(i+1, end=", ")



findline("Hello")
```

```
In [11]: runfile('C:/Users/aparn/OneDrive/2.MCA/SYMCA/Sem_4/Python Programs/
untitled0.py', wdir='C:/Users/aparn/OneDrive/2.MCA/SYMCA/Sem_4/Python
Programs')
python is esay language
python
pyton the task is to read the information
Number of lines in file is:  3

In [12]:
```

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12) Write a NumPy program to create a 4x4 array, now create a new array from the said array swapping first and last, second and third columns.

```
import numpy as np

nums = np.arange(16, dtype='int').reshape(-1, 4)

print("Original array:")

print(nums)

print("\nNew array after swapping first and last columns of the said array:")

new_nums = nums[:, ::-1]

print(new_nums)
```

```
In [12]: runfile('C:/Users/aparn/OneDrive/2.MCA/SYMCA/Sem_4/Python Programs/
untitled0.py', wdir='C:/Users/aparn/OneDrive/2.MCA/SYMCA/Sem_4/Python
Programs')
Original array:
[[ 0  1  2  3]
 [ 4  5  6  7]
 [ 8  9 10 11]
 [12 13 14 15]]

New array after swapping first and last columns of the said array:
[[ 3  2  1  0]
 [ 7  6  5  4]
 [11 10  9  8]
 [15 14 13 12]]

In [13]:
```

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13) Write a NumPy program to sort a given array by row and column in ascending order.

```
import numpy as np
nums = np.array([[5.54, 3.38, 7.99],
        [3.54, 4.38, 6.99],
        [1.54, 2.39, 9.29]])
print("Original array:")
print(nums)
print("\nSort the said array by row in ascending order:")
print(np.sort(nums))
print("\nSort the said array by column in ascending order:")
print(np.sort(nums, axis=0))
```

```
In [13]: runfile('C:/Users/aparn/OneDrive/2.MCA/SYMCA/Sem_4/Python Programs/
untitled0.py', wdir='C:/Users/aparn/OneDrive/2.MCA/SYMCA/Sem_4/Python
Programs')
Original array:
[[5.54 3.38 7.99]
 [3.54 4.38 6.99]
 [1.54 2.39 9.29]]

Sort the said array by row in ascending order:
[[3.38 5.54 7.99]
 [3.54 4.38 6.99]
 [1.54 2.39 9.29]]

Sort the said array by column in ascending order:
[[1.54 2.39 6.99]
 [3.54 3.38 7.99]
 [5.54 4.38 9.29]]
```

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14) Write a NumPy program to create a new array of given shape (5,6) and type, filled with zeros.

```
import numpy as np

nums = np.zeros(shape=(5, 6), dtype='int')

print("Original array:")

print(nums)

nums[::2, ::2] = 3

nums[1::2, ::2] = 7

print("\nNew array:")

print(nums)
```

```
In [14]: runfile('C:/Users/aparn/OneDrive/2.MCA/SYMCA/Sem_4/Python Programs/
untitled0.py', wdir='C:/Users/aparn/OneDrive/2.MCA/SYMCA/Sem_4/Python
Programs')
Original array:
[[0 0 0 0 0 0]
 [0 0 0 0 0 0]
 [0 0 0 0 0 0]
 [0 0 0 0 0 0]
 [0 0 0 0 0 0]]

New array:
[[3 0 3 0 3 0]
 [7 0 7 0 7 0]
 [3 0 3 0 3 0]
 [7 0 7 0 7 0]
 [3 0 3 0 3 0]]
```

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15) Write a NumPy program to check two random arrays are equal or not.

```
import numpy as np

x = np.random.randint(0,2,6)

print("First array:")

print(x)

y = np.random.randint(0,2,6)

print("Second array:")

print(y)

print("Test above two arrays are equal or not!")

array_equal = np.allclose(x, y)

print(array_equal)
```

```
In [15]: runfile('C:/Users/aparn/OneDrive/2.MCA/SYMCA/Sem_4/Python Programs/
untitled0.py', wdir='C:/Users/aparn/OneDrive/2.MCA/SYMCA/Sem_4/Python
Programs')
First array:
[1 0 0 1 0 0]
Second array:
[0 1 1 0 0 0]
Test above two arrays are equal or not!
False
```

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16) Write a NumPy program to find the most frequent value in an array. Sample Output: Original array: [6 9 5 1 7 5 1 0 1 5 5 0 8 9 0 7 0 7 6 5 1 1 9 5 3 8 7 9 6 3 4 5 9 7 2 7 0 2 2 6] Most frequent value in the above array: 5

```
import numpy as np

x = np.random.randint(0, 10, 40)

print("Original array:")

print(x)

print("Most frequent value in the above array:")

print(np.bincount(x).argmax())
```

```
In [16]: runfile('C:/Users/aparn/OneDrive/2.MCA/SYMCA/Sem_4/Python Programs/
untitled0.py', wdir='C:/Users/aparn/OneDrive/2.MCA/SYMCA/Sem_4/Python
Programs')
Original array:
[8 0 2 2 5 2 5 2 9 7 0 4 2 3 5 8 5 8 6 7 2 1 3 0 2 8 7 1 6 3 2 4 1 3 7 2 1
 0 0 6]
Most frequent value in the above array:
2
```

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17) Write a Pandas program to add, subtract, multiple and divide two Pandas Series. Sample Series: [2, 4, 6, 8, 10], [1, 3, 5, 7, 9]

```
import pandas as pd
ds1 = pd.Series([2, 4, 6, 8, 10])
ds2 = pd.Series([1, 3, 5, 7, 9])
ds = ds1 + ds2
print("Add two Series:")
print(ds)
print("Subtract two Series:")
ds = ds1 - ds2
print(ds)
print("Multiply two Series:")
ds = ds1 * ds2
print(ds)
print("Divide Series1 by Series2:")
ds = ds1 / ds2
print(ds)
```

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```
In [17]: runfile('C:/Users/aparn/OneDrive/2.MCA/SYMCA/Sem_4/Python Programs/
untitled0.py', wdir='C:/Users/aparn/OneDrive/2.MCA/SYMCA/Sem_4/Python
Programs')
Add two Series:
0     3
1     7
2    11
3    15
4    19
dtype: int64
Subtract two Series:
0    1
1    1
2    1
3    1
4    1
dtype: int64
Multiply two Series:
0     2
1    12
2    30
3    56
4    90
dtype: int64
Divide Series1 by Series2:
0    2.000000
1    1.333333
2    1.200000
3    1.142857
4    1.111111
dtype: float64
```

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18) Write a python program which show the insert operation on mysql DB

```
import mysql.connector

#Create the connection object

myconn = mysql.connector.connect(host = "localhost", user = "root",passwd = "aparna",database = "PythonDB")

#creating the cursor object

cur = myconn.cursor()

sql = "insert into Employee(name, id, salary, dept_id, branch_name) values (%s, %s, %s, %s, %s)"


#The row values are provided in the form of tuple

val = ("John", 110, 25000.00, 201, "Newyork")


try:

   #inserting the values into the table

   cur.execute(sql,val)


   #commit the transaction

   myconn.commit()


except:

   myconn.rollback()


print(cur.rowcount,"record inserted!")

myconn.close()
```

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19) Write a python program which show the update operation on mysql DB

```
import mysql.connector

mydb = mysql.connector.connect(
  host="localhost",
  user="yourusername",
  password="yourpassword",
  database="mydatabase"
)

mycursor = mydb.cursor()

sql = "UPDATE customers SET address = 'Canyon 123' WHERE address =
'Valley 345'"

mycursor.execute(sql)

mydb.commit()

print(mycursor.rowcount, "record(s) affected")
```

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20) Write a python program which show the Delete operation on mysql DB

```
import mysql.connector

mydb = mysql.connector.connect(
  host="localhost",
  user="yourusername",
  password="yourpassword",
  database="mydatabase"
)

mycursor = mydb.cursor()

sql = "DELETE FROM customers WHERE address = 'Mountain 21'"

mycursor.execute(sql)

mydb.commit()

print(mycursor.rowcount, "record(s) deleted")
```