SET-1

1. A disk drive shows T bytes and U bytes as free and used space respectively. If you delete a file of size O bytes and create a new file of size H bytes then how many free bytes will the disk have? Here T, U, O and H are user-entered values. Write a program in python to find the same
2. Write a Python program that accepts a hyphen separated sequence of words as input and prints the words in a hyphen-separated sequence after sorting them alphabetically.

   Sample Items: green-red-yellow-black-white

   Expected Result: black-green-red-white-yellow
3. Write a program to create a new file name ‘mydata.txt’ and write your name, phone no, roll no and your branch in that file separated by space.

SET-2

1. The mumbai city local train system carries 2,75,000 people each day. The train system observes 15% growth in rainy season only for a particular period (in months) entered by user. How many people does the train system carry each year? Write a program in python for the same.
2. Create first dictionary name ‘ASC_Value’ in python using loop in which keys are alphabets (Lower case letters) and values are their corresponding ASCII code. Print the final dictionary items in separated lines. Also read your first name and calculate your ASCII score (add ASCII code of each character of your name) using that dictionary ASC_Value.
3. There is a file name ‘DATA.txt’ which stores some data. Write a program that read the content of that file and count how many lines, words, alphabets and digits are there in this file.

SET-3

1. Mr. Samuel Gene is purchasing items for his relatives. He has purchased the following items:
   - 3 shirts, at the rate of 680 rupees
   - 1 computer game, at the rate of 750 rupees
   - 2 bracelets, at the rate of 230 rupees

   Write a program to find the total cost. Later he returned one of the bracelet for a full refund and one shirt at a loss of 50%. Find the total cost after refund using the same program
2. Create a File name ‘info.txt’ that stores n random generated numbers in separate lines. After that read the content of this file and print average of these n numbers.
3. Given a string, return a "rotated right" version where the last n chars are moved to the start. The string length will be at least 2.

   right2("Hello",2) → "loHel"

   right2("java",3) → "avaj"

   right2("Hi",3) → "Hi"

SET-4

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:

   Input: without,hello,bag,world

   Then, the output should be:

   bag,hello,without,world

2. Write a Python program that count number of upper case and lower case letters in a given file name ‘data.txt’ using function name COUNT_CASE() that accepts file data as input and return the number of uppercase letters and lowercase letters.

   Sample Data in file: 'The quick Brow Fox'

   Expected Output:

   No. of Upper case characters: 3
   No. of Lower case Characters: 12

3. Write a program to create a dictionary name ‘data’ which stores 10 students name along with their marks in Python Programming subject. Print dictionary items in separated line and then average marks obtained by these 10 students in this subject in last line.

SET-5

1. Write a program to read a string from user and print only duplicate characters of a that string using function DUPLICATE()

2. Salesperson Rita drives 2,052 miles in N days, stopping at 2 towns each day. How many miles does she average between the setups. Write a program in python for the same where value of N is provided by user

3. There is a file name ‘file1.txt’ with some content written into it. Read file name from user and Create 2 new file from that as ‘file2.txt which contains only alphabets and file3.txt which stores only numbers.

SET- 6

1. Write a Python program to create a list which stores square of each number between a and b (both included) using function. Function name is SQUARE_SEQUENCE() which accepts two numbers and return a list.
2. Write a program that accepts a sequence of whitespace separated words as input and prints the words after removing all duplicate words and sorting them alphanumerically.

   Input supplied to the program:

   hello world and practice makes perfect and hello world again

   Then, the output should be:

   again and hello makes perfect practice world

3. Write a program to compute the frequency of the words from the input. The output should output after sorting the key alphanumerically.

   Input supplied to the program:

   New to Python or choosing between Python 2 and Python 3? Read Python 2 or Python 3.

   Then, the output should be:

   2:2
   3.:1
   3?:1
   New:1
   Python:5
   Read:1
   and:1
   between:1
   choosing:1
   or:2
   to:1

SET- 7

1. Write a program in python to check the occurrences of each element of a string using dictionary. A space separated string of elements will be provided by user
2. Write a function Bubble_Sort() to sort a list inputted by user.
3. Write a program to Interchange the contents of two files file1.txt and file2.txt

SET-8

1. Write a program that calculates and calculate the value according to the given formula:

   Q = Square root of [(2 * C * D)/H]

   Following are the fixed values of C and H: C is 50. H is 30.

   D is a list whose values should be input to your program in a comma separated sequence.

   Create a new list of calculated Q for each value of D

   Example

   Comma separated input sequence is given to the program:

   100,150,180

   The output of the program should be:

   18,22,24

2. Write the program where the user enters a string and a substring. You have to print the number of times that the substring occurs in the given string. String traversal will take place from left to right, not from right to left.

   NOTE: String letters are case-insensitive.

3. Write the program to print the multiplication table from 1 to 10 in file table.txt as each multiple of a number separated by space and every table will be in new line.

SET- 9

1. Change the Keys of the given dictionary in Upper case and value should be same.

D = {‘first’: ‘this is first value ’,’second’: ‘This is second value ’,’GLa’:’GLA University, Mathura ’}

D1 = {‘FIRST’: ‘this is first value ’,’SECOND’: ‘This is second value ’,’GLA’:’GLA University, Mathura ’}

2. There is a file name ‘data.txt’ that stores approximately 20 lines. Write a program to create a new file name ‘updated.txt’ that stores only odd numbered line from ‘data.txt’
3. Write a program in python to push all zeroes at the end of the list of N length, where list and length is provided by user.

SET- 10

1. There are two file ‘file1.txt’ and ‘file2.txt’. Write a program to create a new file name ‘file3.txt’ that stores lines alternatively (one from file1 and one from file2) from both files. If content of any file finished in between then copy the remaining content of another file.
2. Write a program which create a dictionary using function in which keys are numbers between 1 and N (both included) and the values are square of keys. Print each item in separate lines. The function name is SQUARE() which accepts a number and return final dictionary.
3. There are 10 students in a class. Some students’ names are same to other students. Write a python program to print the names that occur more than one time. The file name will be given by user where all names are written in a file as new line.

SET-11

1. Write a program to perform Addition of two matrices entered by user of size r1 x c1 and r2 x c2.
2. Write a function intreverse(n) that takes as input a positive integer n and returns the integer obtained by reversing the digits in n.

   Here are some examples of how your function should work.

   ```
   >>> intreverse(783)
   387
   >>> intreverse(242789)
   987242
   >>> intreverse(3)
   3
   ```
3. Create a Dictionary with key as a number between a and b and values as its square. Print each item of dictionary in separated lines.

SET-12

1. Read your name and check whether it is lucky name or not using function Lucky_Name(). Name is lucky name only if it contains all vowels (Not case sensitive)
2. Write a function matched(s) that takes as input a string s and checks if the brackets "(" and ")" in s are matched: that is, every "(" has a matching ")" after it and every ")" has a matching "(" before it. Your function should ignore all other symbols that appear in s. Your function should return True if s has matched brackets and False if it does not.

Here are some examples to show how your function should work.

```
>>> matched("zb%78")
True
>>> matched("(7)(a")
False
>>> matched("a)*(?")
False
>>> matched("((jkl)78(A)&l(8(dd(FJI:),):)?)")
True
```

3. There is class of n students stored in a dictionary like roll numbers as a key and name as a values. I want to select some students for a trip with a condition as only those are allowed whose either name or roll no is lucky (see que 1 and 2 for definition). Write a program for that.

SET-13

1. Determine if a sentence is a pangram. A pangram is a sentence using every letter of the alphabet at least once. The best known English pangram is:

"The quick brown fox jumps over the lazy dog".

The alphabet used consists of ASCII letters A to Z, inclusive, and is case insensitive. Input will not contain non-ASCII symbols.

2. Mr Khan is very lucky and having very good love life and so he decided to help numbers also to find their perfect love. According to him two numbers are in love with each other if their bitwise-xor and sum are equal.

For example: bitwise-xor of 160 and 75 is 235 and their sum is also 235. Hence 160 and 75 are perfect for each other. On the other hand the bitwise-xor of 32 and 63 is 31 but their sum is 95. Hence 32 and 63 are not perfect for each other.

Write a program to help Mr. Khan in his task to Create a function name Perfect_Love()

Which needs 2 numbers and print whether they are perfect for each other or not.

3. Write a program to read a file name data.txt and count number of lines words in each line in that file.

SET- 14

1. A two dimensional matrix can be represented in Python row-wise, as a list of lists: each inner list represents one row of the matrix. For instance, the matrix

```
1 2 3
4 5 6
```

would be represented as [[1,2,3],[4,5,6]].

Write a Python function "matmult(m1,m2)" that takes as input two matrices using this row-wise representation and returns the matrix product m1*m2 using the same representation.

You may assume that the input matrices are well-formed and have compatible dimensions.

For instance:

```
>>> matmult([[1,2],[3,4]],[[1,0],[0,1]])
[[1,2],[3,4]]

>>> matmult([[1,2,3],[4,5,6]],[[1,4],[2,5],[3,6]])
[[14, 32], [32, 77]]
```

2. Write a program to perform multiplication of two matrices entered by user of size r1 x c1 and r2 x c2.
3. Write a program to check whether a entered name is Magic name or not using function MAGIC_NAME(). Name will be magic name if it is palindrome.

SET- 15:

1. Write a program that computes the net amount of a bank account based a transaction log from console input. The transaction log format is shown as following:

   D 100

   W 200

   D means deposit while W means withdrawal.

   Suppose the following input is supplied to the program:

   D 300

   D 300

   W 200

   D 100

   Then, the output should be:

   500

2. Define a function which can generate a list where the values are square of numbers between 1 and 20 (both included). Then the function needs to print all values except the first 5 elements in the list.

3. Write a program that accepts a sentence and calculate the number of letters and digits in that sentence.

   Suppose the following input is supplied to the program: hello world! 123

   Then, the output should be:

   LETTERS - 10

   DIGITS - 3

SET- 16

1. Write a program which can filter even numbers in a list by using filter function. The list is:

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

2. Write a program that accepts a sequence of whitespace separated words as input and prints the words after removing all duplicate words and sorting them alphanumerically.

Suppose the following input is supplied to the program:

hello world and practice makes perfect and hello world again

Then, the output should be:

again and hello makes perfect practice world

3 . Define a Python function "alternating(l)" that returns True if the values in the input list alternately go up and down (in a strict manner).

For instance:

```
>>> alternating([])
True

>>> alternating([1,3,2,3,1,5])
True

>>> alternating([3,2,3,1,5])
True

>>> alternating([3,2,2,1,5])
False

>>> alternating([3,2,1,3,5])
False
```