**Assignment-5 [Questions]**

**1]** Write a Python program which can compute the factorial of a given numbers. The results should be printed in a comma-separated sequence on a single line.

**2]** Write a Python program which accepts a sequence of comma-separated numbers from console and generates a list and a tuple which contains every number. Suppose the following input is supplied to the program.

**3]** Write a Python program that calculates and prints the value accordingly 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 the variable whose values should be input to your program on a comma-separated sequence. Example: Let us assume the following comma-separated input sequence is given to the program: 100,150,180.*

*The output of the program should be: 18,22,24.*

**4]** Write a Python 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:*

*Output: bag, hello, without, world*

**5]** Write a Python program which accepts a sequence of comma-separated 4 digit binary numbers as its input and then check whether they are divisible by 5 or not. The numbers that are divisible by 5 are to be printed in a comma-separated sequence.

*Example: 0100,0011,1010,1001.*

*Then the output should be: 1010.*

*Notes: Assume the data is input by the console.*

*Hints: In case of input data being supplied to the question, it should be assumed to be a console input.*

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

*D 100*

*W200*

*D means deposit while W means withdrawal.*

**7]** You are required to write a Python program to sort the (name, age, height) tuples by ascending order where name is string, age and height are numbers. The tuples are input by console. The sort criteria is:

*1: Sort based on name;*

*2: Then sort based on age;*

*3: Then sort by score;*

*The priority is that name > age > score.*

*If the following tuples are given as input to the program:*

*Tom, 19, 80*

*John, 20, 90*

*Jony, 17, 91*

*Jony, 17, 93*

*Json, 21, 85*

*Then the output of the program should be:*

*[(‘John’, ‘20’, ‘90’), (‘Jony’, ‘17’, ‘91’), (‘Jony’, ‘17’, ‘93’), (‘Json’, ‘21’, ‘85’), (‘Tom’, ‘19’, ‘80’)]*

*We use itemgetter to enable multiple sort keys.*

**8]** A robot moves in a plane starting from the original point (0,0). The robot can move towards UP, DOWN, LEFT and RIGHT with a given steps. The trace of robot movement is shown as the following:

*UP 5*

*DOWN 3*

*LEFT 3*

*RIGHT 2*

The numbers after the direction are steps. Please write a program to compute the distance from current position after a sequence of movement and original point. If the distance is a float, then just print the nearest integer.

Example:

If the following tuples are given as input to the program:

UP 5

DOWN 3

LEFT 3

RIGHT 2

Then, the output of the program should be: 2

**9]** Write a Python program to compute the frequency of the words from the input. The output should after sorting the key alphanumerically. Suppose the following input is supplied to the program:

*Input: 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*