Scripting and Computer Environments (CSE 505)
Assignment 5
Deadline: 6th November 2014, 9 pm

Guidelines/Instructions:

1. Be careful about your submissions. You must strictly follow the upload format. Failure to do so will make you lose points or may even fetch you a zero.
2. Follow message formats as specified. It is recommended that you copy paste the messages that you are required to print as errors and warnings to avoid penalties. Note – Print messages without quotes.
3. Plagiarism will not be tolerated. Even a single question copied will fetch you 0 in the complete assignment.
4. Unless explicitly mentioned in the question, You should write your python scripts in a file with name <question#>.py . e.g. For Question 1, it should be 1.py
5. You need to do first 3 questions in the lab and remaining as the assignment.
6. You have to upload all the questions on both, the evaluator and the courses portal.
7. For uploading on the courses, follow the given format:

- Create a folder with the name <rollno>_assign5 and place all your python scripts in that folder. e.g. 2013055XX_assign5
- Create a .tar.gz file with the name <rollno>_assign5.tar.gz containing the folder above. e.g. 2013055XX_assign5.tar.gz
- Validate your file (Thanks to Q9 you did in assignment3 :))

1.
Write a python script to check if the input is palindrome.(no validation needed)
Take input in loop and break when the input is -1.

Print Yes/No respectively.

Note: Use Iterative approach (not recursive !).
Sample Input/Output :
lovlean
No
arora
Yes
parle-G
No
1 1
Yes
-1

2.
Write a python script that does the division of the given two command line arguments.

- If Number of Input arguments!=2, raise "IndexError" and in handle of this particular error, print "Invalid No of Arguments"
- If Inputs are not numeric, manually raise "TypeError" and in handle of this particular error, print "Invalid Type of Arguments"
- If second argument is 0, manually raise "ZeroDivisionError" and in handle of this particular error, print "Second Argument can't be zero"
- If all of the above succeed, print the result of division (integer value).

Sample Input1:
2.py

Sample Output 1:
Invalid No of Arguments

Sample Input2:
2.py 4 2

Sample Output 2:
2

3.
Write a python script that takes string and print it in the form as shown in examples.

If the given input string contains some space that should be omitted while printing i.e. Hello World will be considered as HelloWorld only. You are not supposed to omit any special characters (except space) . If input string contains only spaces, directly print 'Invalid Input!' (without quotes)

There should be no extra spaces in the output.

Input:
Line1-> No of Testcases(tc)(No need to validate it)
Line2-> String1.
Line3....tc+1-> String2...

Sample Input:
2
Hello
Hi Bye

Sample Output:
HelloolleH
Hell lleH
Hel leH
He eH
H H
HiByeeyBiH
HiBy yBiH
HiB BiH
Hi iH
H H

4.

Manish and Gaurav are the room partners and they will be leaving college once they are done with their studies. So they have decided to note down everything they have in their room so they can split between them later(batwara :P).
If the thing can be equally split they both will get half-half, otherwise it will go to the charity. (charity here means the nearby rooms, the juniors).

The input file contains the information in the format <Item_Name>:<Count> e.g. Mirror:1.
The item can appear multiple number of times in the input file so you have treat on the basis of total count. i.e. If there are following two entries in the input.txt
Table:1
Table:1
So, There are two tables and it can be split.

You have to generate two files, one file containing the items that can be split between them and other file containing the items that will go to the charity.
The items should be sorted (alphabetically by item names) in the both output files and it will contains only item names and not the count.

Take the input file as the first command line argument and path of the output directory as the second argument.
Note:
1) If the output directory doesn't exists your script has to create it.
2) The name of the output file should be "split.txt", file containing list of items that can be split and the "charity.txt", file containing list of items that can't be split. These output file will be created inside the specified output folder.
3) If there is no item to split, the split.txt should be created and empty, similarly for the charity.txt

Assume Valid Inputs.

Sample Input:
File: arg1
Table:1
Bed:2
Mirror:1
Pen:3
Table:1

Sample Output:
File 1: arg2/split.txt
Bed
Table

File 2: arg2/charity.txt
Pen
Mirror

5.

a) Write a module file 5a.py which has below mentioned functions.

Function1: To check if the given three values satisfy the triangle inequality property.
Name: is_satisfying _inequality
Input: As function arguments, three values representing the triangle sides.
Output:Return-1 for invalid arguments(Inputs are not positive real numbers),0 if it is not triangle else 1.

Function2: To check if triangle is right angled triangle. (Assume all inputs are valid.)
Name: is_right_angled_triangle
Input: As function arguments, three values representing the triangle sides.
Output: Return 0 for false, 1 for true.

Function3: To find area of triangle. (Assume all inputs are valid.)
Name: find_area_triangle
Input: As function arguments, three values representing the triangle sides.
Output: Return area(integer value only without any rounding off). Use sqrt function from Math module to calculate sqrt.

b) Write a file that uses the above module file. Name this file as 5b.py

Input:
Line1-> No of Testcases(tc)(No need to validate it)
Line2-> Three sides of traingle1 separated by one space.
Line3....tc+1-> Three sides of traingle2... separated by one space.

Ouput:
For each line of testcase,
Call function1. Print its output in a line.
If function1 returns 1 i.e. it forms a triangle, call function2 and print its output, else dont call and dont print anything.
If function1 returns 1 i.e. it forms a triangle, call function3 and print its output, else dont call and dont print anything.

Sample Input:

```
2
1 2 5
3 3 5
```

Sample Output:

```
0
1
0
4
```

6.

Snehal loves to drink chai. In IIIT, Chai is well known by two names "choti wali" and "badi wali".
She is bit lazy and searches for the nearest canteen from the GH hostel in the IIIT campus. If more than one canteen are at the equal distance then out of them, she will prefer the canteen with the low cost of "choti wali" and if again, more than one canteen have the same cost of "choti wali" then out of them, she will prefer the canteen with the low cost of the "badi wali". If the cost of the "badi wali" is also same then she will be confused and will go to CCD :P.

Input: First argument is the input csv file (.csv) which contains data in the following format(without the angle brackets).
<Canteen Name 1>,<Distance 1>,<Cost of choti chai 1>,<Cost of badi chai 1>
<Canteen Name 2>,<Distance 2>,<Cost of choti chai 2>,<Cost of badi chai 2>

Output:
Name of the canteen Snehal will go and if she will go to CCD, print CCD. If input file is empty or doesn't exists, print on console 'Chai Not found!'

Sample Input1:
File: arg1
Jersy,10,5,6
NV Canteen,10,3,6

Sample Output1:
NV Canteen

Sample Input2:
File: arg1
Jersy,10,5,6
NV Canteen,10,5,6

Sample Output2:
CCD