CSE412L - Artificial intelligence lab

Spring-2021

Lab final

Time: 3 hours

1. Write a python program that will take an integer as input and will print the summation of the following series up to that term:

$$1/2^2 + 2^2/3 + 3/4^2 + 4^2/5 + \dots \dots \dots$$

Sample Input:	**Sample Output:**
4	4.97

2. Write a python program that will take number of rows as input and print the following star pattern as output.

Sample Input:	**Sample Output:**
Enter number of rows: 5	

3. Write a python program that takes a string as input and returns that string in reverse order, with the opposite case.

Sample Input:	**Sample Output:**
Hello World	DLROw OLLEh
NaHiD	dIhAn
Python	NOHTYp

4. Write a python program that measures the distance of a vacuum cleaner from starting position.
    - Suppose, the vacuum cleaner starts from [0,0] location
    - The movements of the vacuum cleaner are given as follows:

      UP 3, DOWN 1

      (Here directions are followed by the number of steps taken in that directions)

    - The formula for measuring the distance between points is:

$$D = \sqrt{(Y_2 - Y_1)^2 + (X_2 - X_1)^2}$$

Sample Input:	**Sample Output:**
UP 2 DOWN 3 LEFT 4 RIGHT 5 DOWN 2 UP 5	2.24

Submission instructions:

1. Ready the following files.
   183-15-XXXXX-problem1.py
   183-15-XXXXX-output1.jpg
   183-15-XXXXX-problem2.py
   183-15-XXXXX-output2.jpg
   183-15-XXXXX-problem3.py
   183-15-XXXXX-output3.jpg
   183-15-XXXXX-problem4.py
   183-15-XXXXX-output4.jpg
2. Then, save the files as a zip file with your student id as name. For example:
   183-15-XXXXX.zip