Week 4: Assignment 1
Mathematician: Hey, can you help me again?

[*Last Updated on:* ***26th April, 2021, 13:00 Hrs***]

Aim

Your mathematician friend again wants to give you a task. He has given two points **(`x1` , `y1`)** and **(`x2` , `y2`)**, where `x1` , `x2` are X-coordinates and `y1` , `y2` are Y-coordinates of these points. Your task is to compute the ***Euclidean distance*** between them with precision upto *`3 decimal places`* .

Your friend is little bit helpful and has provided a skeleton code stub written in Python language. You have to help him achieve this goal so that he can directly test his theorem using output of your code.

Let's help him then!

Given

One file is provided to solve this assigment.

- Skeleton program file: **`assignment1.py`**

Procedure

- Open the skeleton program file, **`assignment1.py`** .
- You will notice pre-written comments included in skeleton program for your assistance to solve the assignment.
- The **`main`** function defines values of `x1` , `y1` , `x2` and `y2` variables.
- It then calls the function **`computeDistance(x1, y1, x2, y2)`** .
- Your task is to complete the function. This function should print the computed distance to the *`STDOUT`* .
- The distance computed should be precise up to **3 decimal places**.
- Update the values of `x1` , `y1` , `x2` and `y2` variables in **`main`** function to test for different cases.

- To run and debug your solution, type the below command in Terminal:

```
$ python3 assignment1.py
```

  This command will run the Python script **`assignment1.py`**.

- Refer the **Expected Output** section below and debug your code to get the correct output.

Expected Output

- For example, the values of variables **`x1`**, **`y1`**, **`x2`** and **`y2`** are defined in **`main`** function are as follows as stated in lines starting with **#**.
- The expected output of program **`assignment1.py`** i.e., print the computed distance upto 3 decimal places is shown below.
- You can test your solution with following values and their expected outputs:

```
# x1 = 1.0, y1 = 1.3, x2 = 4.2, y1 = 4.6
$ python3 assignment1.py
Distance computed: 4.597

# x1 = 5.2, y1 = 10.1, x2 = 5.0, y2 = 10.1
$ python3 assignment1.py
Distance computed: 0.200

# x1 = 10.4, y1 = 5.02, x2 = 5.12, y2 = 10.8
$ python3 assignment1.py
Distance computed: 7.829
```

Grading and Submission Instructions

- Navigate to the folder where the ***ey-mooc-grader-sfc*** application resides.
- To grade your solution, run the **`check`** command of the application as follows:

```
$ ./ey-mooc-grader-sfc check -w 4 -a 1 Week_4/Assignment_1/assignment1.py
```

- This will run your program **`assignment1.py`** against random test cases and grade it. Marks and appropriate remarks will be provided as shown in Figure 1.
- Your program file **`assignment1.py`**, marks scored and remarks will get uploaded to the MOOC portal.

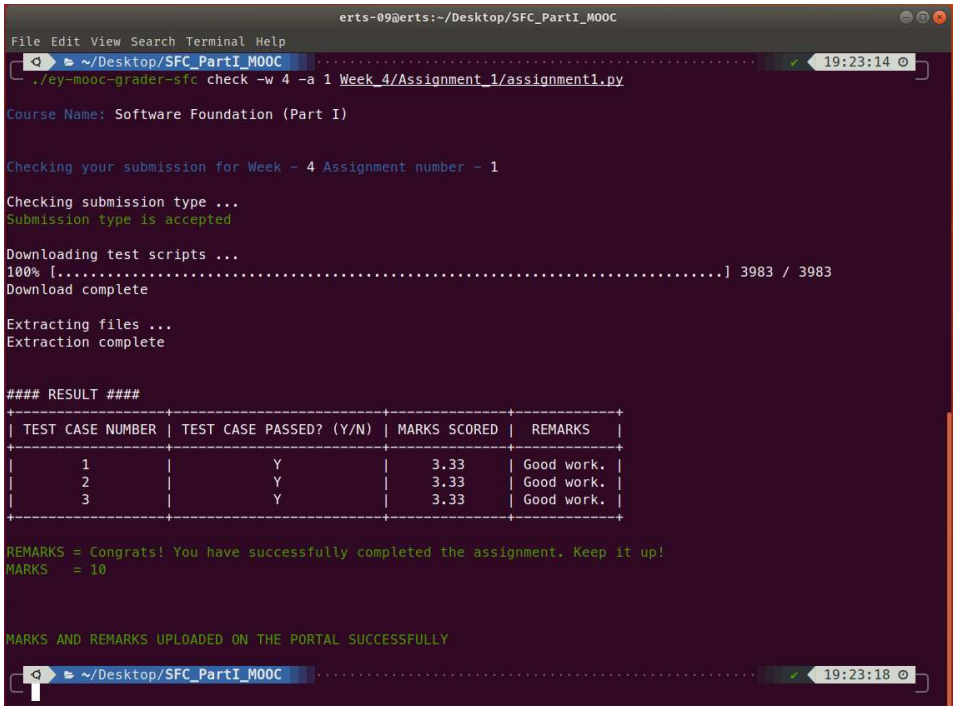

Figure 1: Output of running check command for Week 4 Assignment 1

- You can verify this by running the **`status`** command of the application as given below, refer Figure 2.

```
$ ./ey-mooc-grader-sfc status -w 4 -a 1
```

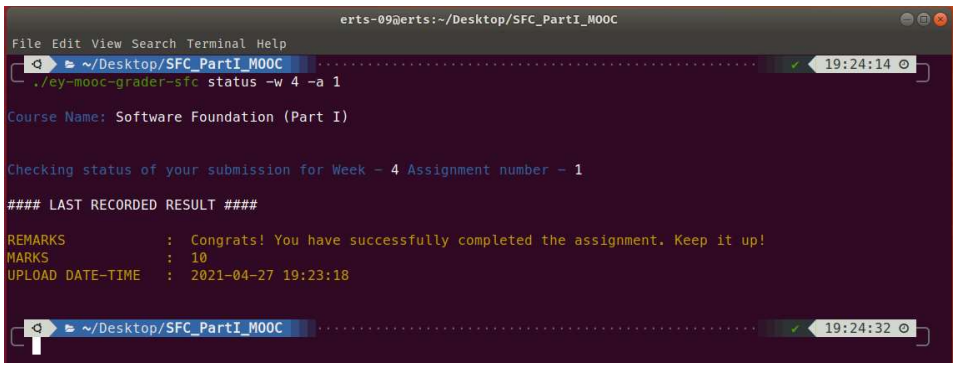

Figure 2: Output of running status command for Week 4 Assignment 1

References

- Official Python documentation of Math module
- Blog on Python Math Module by RealPython

All The Best!