



Week 4: Assignment 1

Mathematician: Hey, can you help me again?

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

- Aim
- Given
- Procedure
- Expected Output
- Grading and Submission Instructions
- References

Aim

Your mathematician friend again wants to give you a task. He has given two points (x_1 , y_1) and (x_2 , y_2), where x_1 , x_2 are X-coordinates and y_1 , y_2 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 assignment.

- 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 x_1 , y_1 , x_2 and y_2 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 x_1 , y_1 , x_2 and y_2 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, y2 = 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.

```

erts-09@erts:~/Desktop/SFC_PartI_MOOC
File Edit View Search Terminal Help
~/Desktop/SFC_PartI_MOOC
./ey-mooc-grader-sfc check -w 4 -a 1 Week_4/Assignment_1/assignment1.py
Course Name: Software Foundation (Part I)

Checking your submission for Week - 4 Assignment number - 1

Checking submission type ...
Submission type is accepted

Downloading test scripts ...
100% [.....] 3983 / 3983
Download complete

Extracting files ...
Extraction complete

#### RESULT ####
+-----+-----+-----+-----+
| TEST CASE NUMBER | TEST CASE PASSED? (Y/N) | MARKS SCORED | REMARKS |
+-----+-----+-----+-----+
| 1 | Y | 3.33 | Good work. |
| 2 | Y | 3.33 | Good work. |
| 3 | Y | 3.33 | Good work. |
+-----+-----+-----+-----+

REMARKS = Congrats! You have successfully completed the assignment. Keep it up!
MARKS = 10

MARKS AND REMARKS UPLOADED ON THE PORTAL SUCCESSFULLY

```

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
```

```

erts-09@erts:~/Desktop/SFC_PartI_MOOC
File Edit View Search Terminal Help
~/Desktop/SFC_PartI_MOOC
./ey-mooc-grader-sfc status -w 4 -a 1
Course Name: Software Foundation (Part I)

Checking status of your submission for Week - 4 Assignment number - 1

#### LAST RECORDED RESULT ####

REMARKS      : Congrats! You have successfully completed the assignment. Keep it up!
MARKS        : 10
UPLOAD DATE-TIME : 2021-04-27 19:23:18

```

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!