Questions for Practice

1. Question

A short distance runner is preparing for the upcoming Olympic game. He went through multiple trial sessions with his coach. The coach recorded the distance ran by the runner and the time taken for the same during each trial session. After all trial sessions, the coach needs to find the runner's speed during each trial session and record all these details in a text file. Write a Python program with the following functions to fulfill the requirement of the coach:

i. A function called `getDistanceTime` that reads in the distance ran in meters and time taken in seconds for a particular trial session. The function should store the distance and time of multiple trial sessions in a single *list* called `distanceTime` and return it.

ii. A function called `calculateSpeed` that accepts the `distanceTime` *list* and calculate the speed for each pair of distance and time for all the trial sessions. The function should store the speed values in another *list* called `speed` and return it.

iii. A function called `trialRecord` that calls the `getDistanceTime` and `calculateSpeed` functions. The `trialRecord` function should then record all details in "Trial_Record.txt" file. Each line in the text file should contain distance ran, time taken and speed for each training session.

After writing all these functions, call the `trialRecord` function in your Python program. Sample input of the program is as follows:

```
Enter distance ran in meters(m) [-1 to end]: 200
Enter time taken in seconds(s): 19.21
Enter distance ran in meters(m) [-1 to end]: 100
Enter time taken in seconds(s): 9.85
Enter distance ran in meters(m) [-1 to end]: 400
Enter time taken in seconds(s): 57.52
Enter distance ran in meters(m) [-1 to end]: 800
Enter time taken in seconds(s): 114.23
Enter distance ran in meters(m) [-1 to end]: 100
```

```
Enter time taken in seconds(s): 9.88


Enter distance ran in meters(m) [-1 to end]: 400
Enter time taken in seconds(s): 57.10
Enter distance ran in meters(m) [-1 to end]: -1
```

Text file written for the above inputs and outputs is given in Figure 1 below:

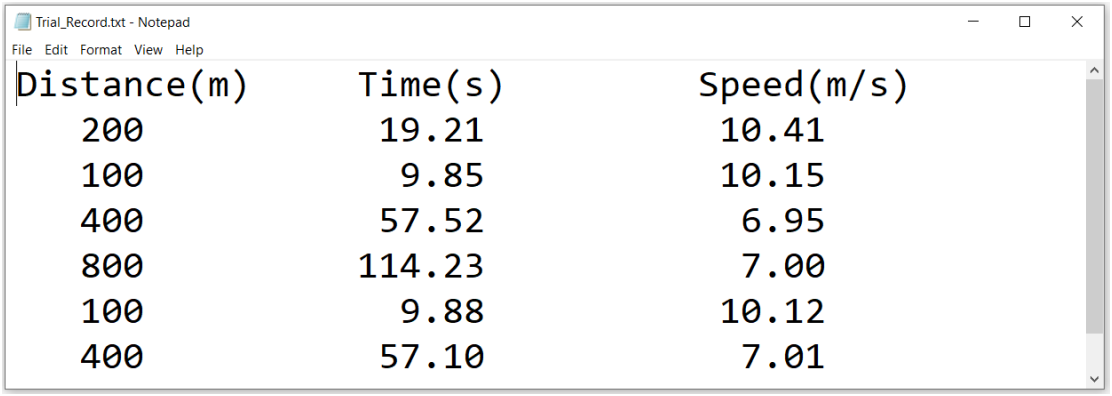

Figure 1: “Trial_Record.txt” File