

30.12.2020

**CENG113**  
**Programming Basics**  
**HOMEWORK #4**

1

**DUE DATE: 10.01.2021 - 23:59**

You are expected to write a Python program for a game about an ancient hero that is half-god. In order to become immortal, he is challenged to complete 5 tasks.



**Figure 1:** The map of the world

In Figure 1, you can see the map of the game world. At the beginning of the game, the hero starts his journey from his home. He also has a pegasus companion with whom he can travel to the given task's destinations.

In the given TaskList.txt, you can find each task's distance from his home by foot, by pegasus and the needed HP to kill the monster of the task. TaskList.txt is structured as shown below:

TaskName	DistanceByFoot	DistanceByPegasus	HPToKill
Task1	-1	400	50
Task2	-1	500	100
Task3	600	500	75
Task4	1000	500	50
Task5	900	700	80



2

You have to read TaskList.txt, and create a nested list named task\_list that has each task as a list:

```
task_list = [[Task1,-1,400,50],[Task2,-1,500,100]....]
```

As you can see from the TaskList file, if there is no route to go to the given task by foot, the distance is given as -1. Therefore, you have to use Pegasus in order to reach these destinations.

In the beginning of the game, **the hero has 3000HP, while the pegasus has 550HP.**

The hero can walk at the speed of **20km/hour**. The pegasus can fly at the speed of **50km/hour**. For each hour of the journey, the hero loses **10HP**, while the pegasus loses **15HP**.

At the end of each task, the hero must return to his home and continue from there.

After completing each task, the program should **remove that task** from the task list.

At each turn, the program should display **the remaining tasks** and their distances from the hero's home, and ask for the hero's next move.

★ You should write **remove\_task(task\_list)** and **print\_remaining\_tasks(task\_list)** in a recursive manner.

The program finishes when there is **no task left** ("Congratulations, you have completed the task." message is printed), or the **HP of the hero is not enough to kill the monster of the task** or the **HP of the hero and pegasus is not enough to travel to the given destination** ("Game Over" is printed).

If the user succeeds the game, you have to ask his/her name and save the user's name with the time the game took to finish. Also, you have to show the Hall of Fame at the end of each successful game which shows the best 3 results so far.

### IMPORTANT NOTES:

- User inputs are case insensitive.
- Be careful about **invalid** inputs! Ask each question over and over again until a valid input is entered.
- There is no grader.py given to you in this homework, since this homework will be graded manually. However, you can test your code with the example scenario given below.

### Submission Rules:

STUDENTS WHO DO NOT FOLLOW THESE RULES WILL BE GRADED AS 0.

1. You should submit your assignments through Microsoft Teams until the due date.
2. Your homework should be named as **CENG113\_hw4\_studentID.py** (ie: CENG113\_hw4\_123456789).
3. Use comments in your code, otherwise you will **lose** some points.



4. Write your **student ID** as a comment **at the beginning of your code**.

5. Instead of sending private messages to assistants, ask your questions from the assistant section.

**Note:** Violation of any submission rule may end up with point deduction up to 100 points. Any kind of cheating including teamwork will be penalized.

**An example scenario for the game world (user inputs are given in bold):**

Welcome to Hero's 5 Labors!  
 Remaining HP for Hero : 3000  
 Remaining HP for Pegasus: 550  
 Here are the tasks left that hero needs to complete:

TaskName	ByFootDistance	ByPegasus	HPNeeded
Task1	-1 km	400 km	50
Task2	-1 km	500 km	100
Task3	600 km	500 km	75
Task4	1000 km	500 km	50
Task5	900 km	700 km	80

Where should Hero go next? **Task1**

How do you want to travel?(Foot/Pegasus) **foot**

You cannot go there by foot.

How do you want to travel?(Foot/Pegasus) **pegasus**

Hero defeated the monster.

Time passed : 8 hour

Remaining HP for Hero : 2950

Remaining HP for Pegasus: 430

How do you want to go home?(Foot/Pegasus) **Pega**

Invalid input

How do you want to go home?(Foot/Pegasus) **Pegasus**

Hero arrived home.

Time passed : 16 hour

Remaining HP for Hero : 2950

Remaining HP for Pegasus: 310

Here are the tasks left that hero needs to complete:

TaskName	ByFootDistance	ByPegasus	HPNeeded
Task2	-1 km	500 km	100
Task3	600 km	500 km	75
Task4	1000 km	500 km	50
Task5	900 km	700 km	80

Where should Hero go next? **Task2**

How do you want to travel?(Foot/Pegasus) **foot**

You cannot go there by foot.

How do you want to travel?(Foot/Pegasus) **pegasus**

Hero defeated the monster.

Time passed : 26 hour

Remaining HP for Hero : 2850



4

Remaining HP for Pegasus: 160

How do you want to go home?(Foot/Pegasus)**foot**  
You cannot go there by foot.  
How do you want to go home?(Foot/Pegasus)**pegasus**  
Hero arrived home.  
Time passed : 36 hour

Remaining HP for Hero : 2850  
Remaining HP for Pegasus: 10

Here are the tasks left that hero needs to complete:

TaskName	ByFootDistance	ByPegasus	HPNeeded
Task3	600 km	500 km	75
Task4	1000 km	500 km	50
Task5	900 km	700 km	80

Where should Hero go next? **Task3**  
How do you want to travel?(Foot/Pegasus)**pegasus**  
Pegasus does not have enough HP.  
How do you want to travel?(Foot/Pegasus)**foot**  
Hero defeated the monster.  
Time passed : 66 hour

Remaining HP for Hero : 2475  
Remaining HP for Pegasus: 10

How do you want to go home?(Foot/Pegasus)**foot**  
Hero arrived home.  
Time passed : 96 hour

Remaining HP for Hero : 2175  
Remaining HP for Pegasus: 10

Here are the tasks left that hero needs to complete:

TaskName	ByFootDistance	ByPegasus	HPNeeded
Task4	1000 km	500 km	50
Task5	900 km	700 km	80

Where should Hero go next? **Task5**  
How do you want to travel?(Foot/Pegasus)**pegasus**  
Pegasus does not have enough HP.  
How do you want to travel?(Foot/Pegasus)**foot**  
Hero defeated the monster.  
Time passed : 141 hour

Remaining HP for Hero : 1645  
Remaining HP for Pegasus: 10

How do you want to go home?(Foot/Pegasus)**foot**  
Hero arrived home.  
Time passed : 186 hour

Remaining HP for Hero : 1195  
Remaining HP for Pegasus: 10

Here are the tasks left that hero needs to complete:



(5)

TaskName	ByFootDistance	ByPegasus	HPNeeded
Task4	1000 km	500 km	50

Where should Hero go next? **Task1**

Invalid input

Where should Hero go next? **Task4**

How do you want to travel?(Foot/Pegasus)**foot**

Hero defeated the monster.

Time passed : 236 hour

Remaining HP for Hero : 645

Remaining HP for Pegasus: 10

How do you want to go home?(Foot/Pegasus)**foot**

Hero arrived home.

Time passed : 286 hour

Congratulations, you have completed the task.

What is your name : **Damla**

Hall Of Fame

Name	Finish Time
Damla	286 hour