IF100 – Fall 2020-2021
Take-Home Exam 1
Due November 6th, 2020, Friday, 23:59 (Sharp Deadline)

Introduction

The aim of this take-home exam is to practice on the basics of programming. You will write a Python program to get some inputs from the user, do some arithmetic operations and display the result as the output to the user.

Description

Let's assume that you want to watch a video series but you don't know your remaining internet quota. So, you need to calculate the total duration of videos that can be watched with the remaining quota. That's why you decided to write a Python program that will take (as input) the internet usage quota in gigabytes, the number of text Whatsapp messages sent from this phone and the video duration watched in minutes. By using the information gathered from the user, the program should calculate and display the video duration that can be watched with the remaining part of the internet quota.

Here are some assumptions:

- Videos will be watched in 480p, and the cost of 1 minute video in that quality (480p) is 7.7 megabytes from the internet quota.
- Whatsapp messages will only contain text and the cost of each message is 1.7 kilobytes from the internet quota. So you may assume that the messages will not contain any image or video; and the length of a message is not important, it always consumes 1.7 kilobytes of your quota.
- You can assume that your internet quota will not go below zero (0) with the given inputs.

Inputs

The program that you will develop needs to take a total of 3 inputs from the user:

1. Quota of the internet plan in gigabytes,
2. Total video viewing time in minutes,
3. Number of messages sent.

You may assume that the user will always enter numeric values for all of these inputs. To be more precise, the first two inputs (internet quota and video viewing time) can be a real number (float), and the third input (number of messages sent) will be in type of integer (int).

Here are some information for the conversions:

- `1 GB is 1024 MB.`
- `1 MB is 1024 KB.`

Output

You need to calculate and display the total duration of the videos that can be watched with the remaining internet quota. The output of your program should be exactly in the following format:

Your remaining internet quota is X GB(s).
You can watch video for h hour(s), m minutes and s second(s).

You should calculate four numbers (*X*, *h*, *m* and *s*) for the output of your program. If you find one of these results as `0`, you should also print that.

Please note that *h* and *m* values must be displayed as integers (without any floating point numbers); however *X* and *s* value must be displayed as a real value with *exactly* two floating point numbers (Hint: use ***format*** function that was explained in the recitation materials).

You may check the "Sample Runs" section given below for some examples.

Sample Runs

Below, we provide some sample runs of the program that you will develop. The *italic* and **bold** phrases are inputs taken from the user. You have to display the required information in the same order and with the same words and characters as below.

Sample Run 1

```
Please enter your internet quota (GB): 10
Please enter your total video viewing time in minutes: 180
Please enter the number of messages you send: 1000
Your remaining internet quota is 8.64 GB(s).
You can watch video for 19 hour(s), 9 minute(s) and 39.27 second(s).
```

Sample Run 2

```
Please enter your internet quota (GB): 5.6
Please enter your total video viewing time in minutes: 34.88
Please enter the number of messages you send: 4325
Your remaining internet quota is 5.33 GB(s).
You can watch video for 11 hour(s), 48 minute(s) and 54.89 second(s).
```

Sample Run 3

```
Please enter your internet quota (GB): 100
Please enter your total video viewing time in minutes: 365.8
Please enter the number of messages you send: 15000
Your remaining internet quota is 97.23 GB(s).
You can watch video for 215 hour(s), 29 minute(s) and 40.03 second(s).
```

Sample Run 4

```
Please enter your internet quota (GB): 0.7
Please enter your total video viewing time in minutes: 60.8
Please enter the number of messages you send: 100
Your remaining internet quota is 0.24 GB(s).
You can watch video for 0 hour(s), 32 minute(s) and 16.16 second(s).
```

How to get help?

You can use GradeChecker (http://sky.sabanciuniv.edu:8080/GradeChecker/) to check your expected grade. Just a reminder, you will see a character ¶ which refers to a newline in your expected output.

What and where to submit?

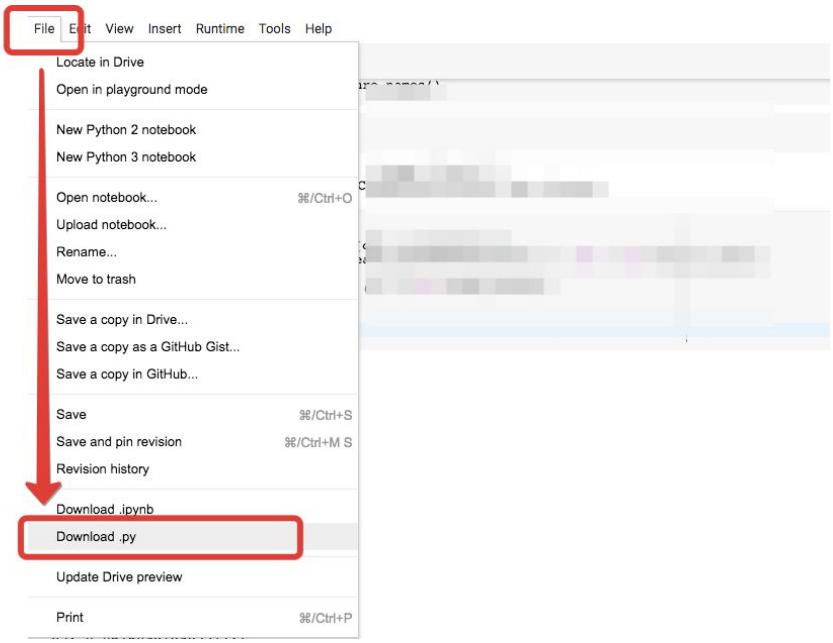
You should prepare (or at least test) your program using Python 3.x.x. We will use Python 3.x.x while testing your take-home exam.

It'd be a good idea to write your name and lastname in the program (as a comment line of course). Do not use any Turkish characters anywhere in your code (not even in comment parts). If your name and last name is "İnanç Arın", and if you want to write it as comment; then you must type it as follows:

 # Inanc Arin

Submission guidelines are below. Since the grading process will be automatic, students are expected to strictly follow these guidelines. If you do not follow these guidelines, your grade will be 0.

- Download your code as *py* file with "File" -> "*Download .py*" as below:



- Name your *py* file that contains your program as follows:

  "username_the1.py"

  For example: if your SUCourse+ username is **"duygukaltop"**, then the name of the *py* file should be: **duygukaltop_the1*.py*** (please only use lowercase letters).

- Please make sure that this file is the latest version of your take-home exam program.

- Submit your work **through SUCourse+ only**! You can use the GradeChecker only to see if your program can produce the correct outputs both in the correct order and in the correct format. It will not be considered as the official submission. You must submit your work to SUCourse+.

General Take-Home Exam Rules

- Successful submission is one of the requirements of the take-home exam. If, for some reason, you cannot successfully submit your take-home exam and we cannot grade it, your grade will be 0.

- There is NO late submission. You need to submit your take-home exam before the deadline. Please be careful that SUCourse+ time and your computer time may have 1-2 minutes differences. You need to take this time difference into consideration.

- Do NOT submit your take-home exam via email or in hardcopy! SUCourse+ is the only way that you can submit your take-home exam.

- If your code does not work because of a syntax error, then we cannot grade it; and thus, your grade will be 0.

- Please do submit your **own** work only. It is really easy to find "similar" programs!

- Plagiarism will not be tolerated. Please check our plagiarism policy given in the syllabus of the course.

Good luck!