

Homework #5

Due Date: November 11, 2020, Wednesday, 23:59

FOR Loops: Running Distance Calculator

In the beginning of 2020, an amateur athlete decides to run once every three days for the whole year to increase his stamina.

He runs on the 1st, 4th, 7th ... day of each month. At the beginning of a new month, he always runs on the 1st day of the month, even if three days have not passed since his last run.

On March, April and May he does not run because of the quarantine shutdowns.

He decides to increase the length of his runs systematically: He runs the month number plus half the day number kilometers each day he is active.

For example:

- On June 1st he runs $6 + 1 \times (\frac{1}{2}) = 6.5$ km.
- On June 4th he runs $6 + 4 \times (\frac{1}{2}) = 8$ km.

Write a Python program that will reveal for each month of 2020:

1. For how many days he has been active (how many days has he gone for a run);
2. Total distance he has run that month;
3. For how many days he has run a half marathon (approximately 21.1km) or longer.

If in a month he has run at least a half marathon in a day, your program should print how many times. If not, it should not print anything about this.

Place a blank line after the monthly information for easier readability.

At the end of your program, print the distance he has run in the whole year.

Note that 2020 is a leap year.

Make sure you place comments in your program. Place your name, ID, what this program does and the date this program was written as comments at the top.

Note that this homework is about making best use of FOR loops. Therefore you should not write a code for a month and copy/paste it for the other months.

Sample output is given on the next page. Your screen output should look exactly like this sample.

Sample screen output:

```
MONTH 1
You were active 11 of 31 days.
You have run 99.0 km this month.

MONTH 2

... skipped some lines ...

MONTH 3
You were active 0 of 31 days.
You have run 0.0 km this month.

MONTH 4

... skipped some lines ...

MONTH 9
You were active 10 of 30 days.
You have run 162.5 km this month.
You have run at least a half marathon 2 time(s).

... skipped some lines ...

You have run 1428.0 km in 2020.
```

Name your Python py-file as **h05yourlastname.py** and then upload it to Blackboard Learn at <https://ku.blackboard.com>. Anyone e-mailing his/her homework will lose points!

While doing all your homework assignments, remember that:

- *You should not work together,*
- *You should not give or take any files,*
- *You should not give or take help other than simple verbal hints.*