

LAB EXERCISE

For a particular illness a patient should take 3 drugs every day: **Drug A, drug B and drug C**. According to his age and his gender the following table describes the necessary quantity.

Write down a program that allows to calculate and print the quantities of the three drugs if a user enters his age and his gender.

| Age range | A | B | C |
|---------------------------|-------|-------|-----------------|
| age < 12 | 30 mg | 2A mg | $20 + B - 1.5K$ |
| $12 \leq \text{age} < 60$ | 40 mg | 4A mg | $40 + 2B - 3K$ |
| age ≥ 60 | 35 mg | 3A mg | $30 + B - 2.5K$ |

Figure 1: How to calculate drug quantity

K = A / 2 for Male ('M'),
 A / 3 for Female ('F')

Write 3 functions and a main function. Do not use any library other than **stdio**.

Function 1: (20 pts)

- **Function name:** CalculateA
- **Function parameter:** 1 **int** parameter named "age"
- **Return type:** **double**
- See *Figure 1* to figure out what it does.

Function 2: (20 pts)

- **Function name:** CalculateB
- **Function parameter:** 1 **int** parameter named "age"
- **Return type:** **double**
- See *Figure 1* to figure out what it does.

Function 3: (40 pts)

- **Function name:** CalculateC
- **Function parameter:** 1 **int** parameter named "age" and 1 **char** parameter named "gender"
- **Return type:** **double**
- See *Figure 1* to figure out what it does.

The main function:

- Ask 2 values from the user: *age* (int) and *gender* (char). (5 pts)
- Call the functions to calculate the quantity of each drug the patient should take depending on his age and gender. (10 pts)
- Print the quantity of each drug as in the examples below. (5 pts)
- Do the printf and scanf operations **only** in the main function.

Examples:

```
dergonul@DESKTOP-3J2QH5K:~$ ./a.out
5 M
30.000000 60.000000 57.500000
dergonul@DESKTOP-3J2QH5K:~$ ./a.out
15 M
40.000000 160.000000 300.000000
dergonul@DESKTOP-3J2QH5K:~$ ./a.out
65 M
35.000000 105.000000 91.250000
dergonul@DESKTOP-3J2QH5K:~$ ./a.out
5 F
30.000000 60.000000 65.000000
dergonul@DESKTOP-3J2QH5K:~$ ./a.out
15 F
40.000000 160.000000 320.000000
dergonul@DESKTOP-3J2QH5K:~$ ./a.out
65 F
35.000000 105.000000 105.833333
```