

**COMP-116**  
**Software Development Lab I**  
**Fall 2021**  
**Homework 4**

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**Problem:**

In this assignment, you must follow the Software Development Cycle (phases 2-5) to design and develop a program which calculates the monthly bill for a user subscribed to a fictional movie streaming service called MovieFlix based on the number of movies the user has seen. (Essentially document and describe your plan for the exercise)

Specifically, the MovieFlix charging policy is the following:

- A fixed monthly subscription of 9.99 euros is always charged even if the user did not use MovieFlix at all.
- The first 10 movies are free.
- The next 15 movies are provided for 1.5 euros per movie.
- The next 20 movies are provided for 3 euros per movie.
- Afterwards (> 45) movies are provided for 1 euros per movie.

Note: remember that the total movie bill must be presented with only two decimal digits.

**Software Development Process**

**Phase 2**

**System Analysis**

User is going to enter an amount of the movies the user has seen on a fictional movie streaming service called "MovieFlix".

Program is going to calculate the monthly bill for a user subscribed to a fictional movie streaming service called "MovieFlix".

Example:

- User enters a number "0".
- Programs checking number for a negative value.
- Because  $0 < 10$  bill is going to contain only the price of the subscribe.

## Phase 3

### System Design

Plan:

1. Accepting the number of movies that the user has seen.
2. Checking for negative value.
3. Comparing amount of movies with different levels of fee (10 movie – 0; 15 – 1.5; 20 – 3; >45 – 1).
4. Calculate the bill.
5. Show the bill to a user.

## Phase 4

### Implementation

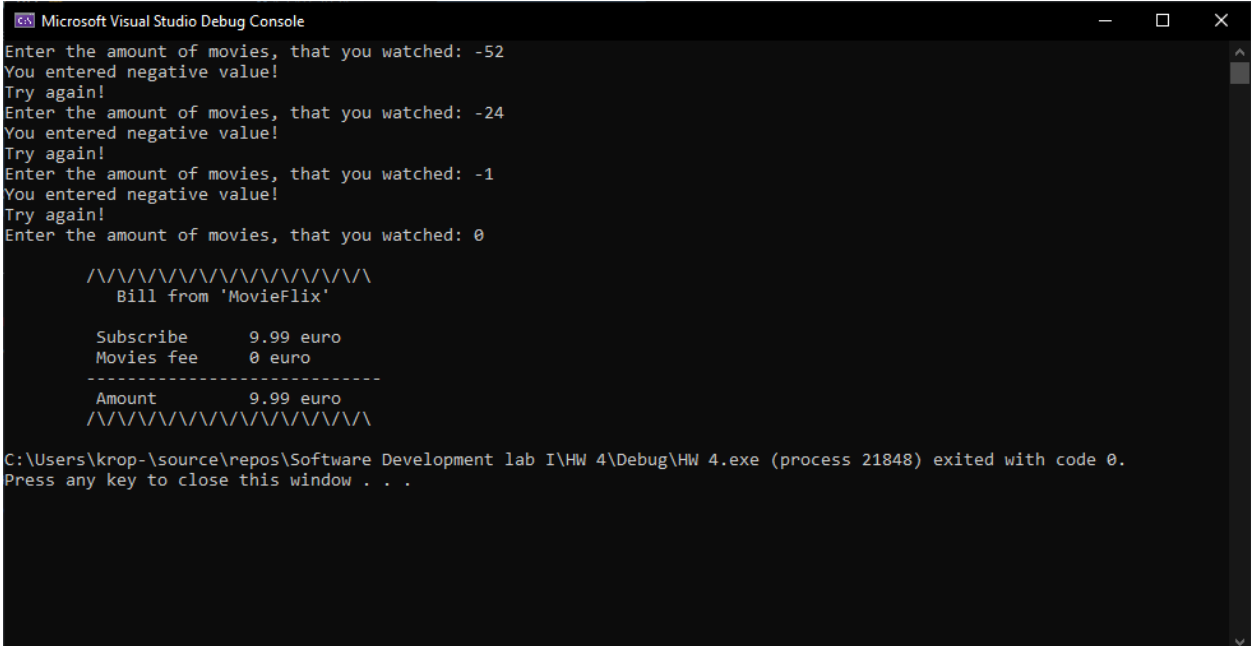
You can find code attached in file: “HW4\_Code.txt”;

## Phase 5

### Testing

Test 1.

### Negative numbers



```
Microsoft Visual Studio Debug Console
Enter the amount of movies, that you watched: -52
You entered negative value!
Try again!
Enter the amount of movies, that you watched: -24
You entered negative value!
Try again!
Enter the amount of movies, that you watched: -1
You entered negative value!
Try again!
Enter the amount of movies, that you watched: 0

  /\ /\ /\ /\ /\ /\ /\ /\ /\ /\ /\
    Bill from 'MovieFlix'

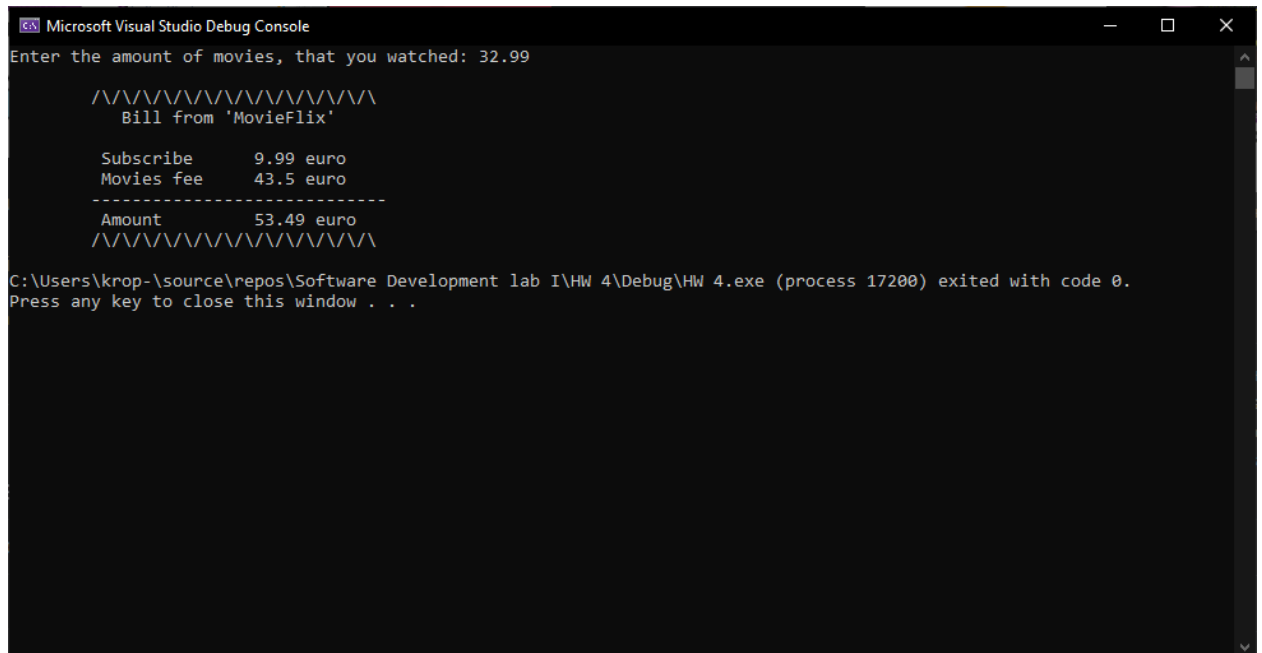
  Subscribe      9.99 euro
  Movies fee     0 euro
  -----
  Amount         9.99 euro
  /\ /\ /\ /\ /\ /\ /\ /\ /\ /\ /\

C:\Users\krop-\source\repos\Software Development lab I\HW 4\Debug\HW 4.exe (process 21848) exited with code 0.
Press any key to close this window . . .
```

Pic 1. The user is going to be in a loop until entering of non-negative value. Successful execution.

## Test 2.

### Rational numbers



```
Microsoft Visual Studio Debug Console
Enter the amount of movies, that you watched: 32.99

  /\ /\ /\ /\ /\ /\ /\ /\ /\ /\
    Bill from 'MovieFlix'

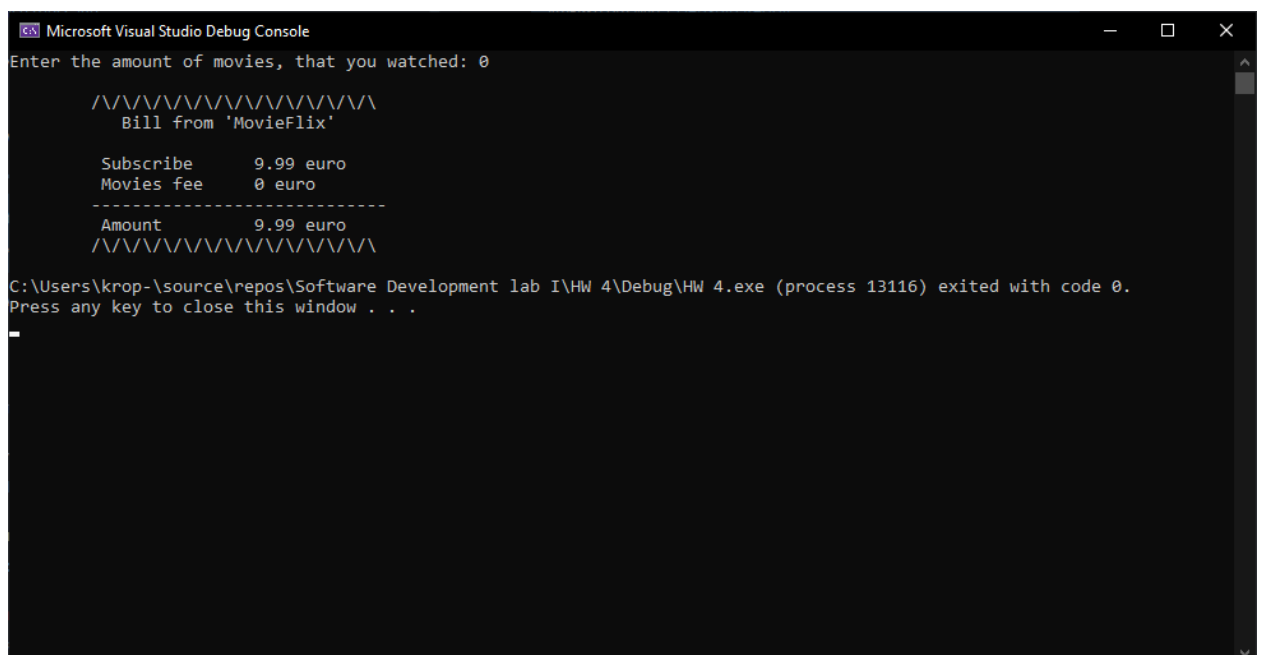
  Subscribe      9.99 euro
  Movies fee     43.5 euro
  -----
  Amount         53.49 euro
  /\ /\ /\ /\ /\ /\ /\ /\ /\ /\

C:\Users\krop-\source\repos\Software Development lab I\HW 4\Debug\HW 4.exe (process 17200) exited with code 0.
Press any key to close this window . . .
```

Pic 2. Value is going to cut a fractional part of a number. Successful execution.

## Test 3.

### Zero



```
Microsoft Visual Studio Debug Console
Enter the amount of movies, that you watched: 0

  /\ /\ /\ /\ /\ /\ /\ /\ /\ /\
    Bill from 'MovieFlix'

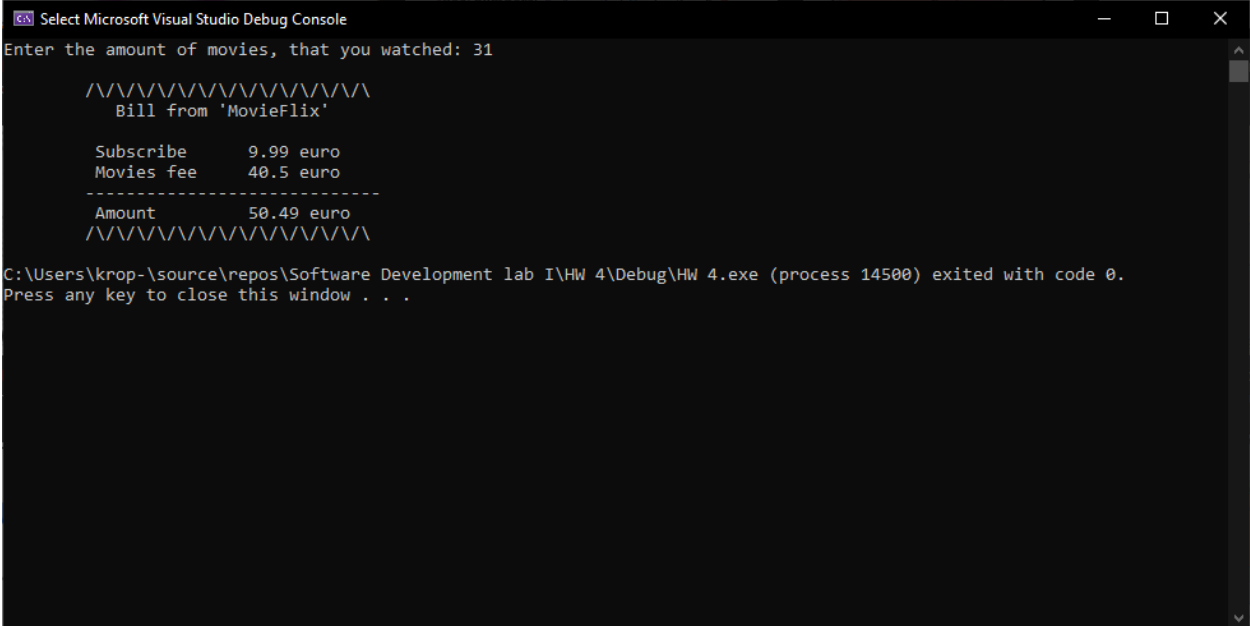
  Subscribe      9.99 euro
  Movies fee      0 euro
  -----
  Amount         9.99 euro
  /\ /\ /\ /\ /\ /\ /\ /\ /\ /\

C:\Users\krop-\source\repos\Software Development lab I\HW 4\Debug\HW 4.exe (process 13116) exited with code 0.
Press any key to close this window . . .
```

Pic 3. Successful execution.

## Test 4.

## Integers



```
Select Microsoft Visual Studio Debug Console
Enter the amount of movies, that you watched: 31

  /\ /\ /\ /\ /\ /\ /\ /\ /\ /\
    Bill from 'MovieFlix'

    Subscribe      9.99 euro
    Movies fee     40.5 euro
    -----
    Amount         50.49 euro
  /\ /\ /\ /\ /\ /\ /\ /\ /\ /\

C:\Users\krop-\source\repos\Software Development lab I\HW 4\Debug\HW 4.exe (process 14500) exited with code 0.
Press any key to close this window . . .
```

Pic 4. Successful execution.