

EECS 2032E

FALL 2021

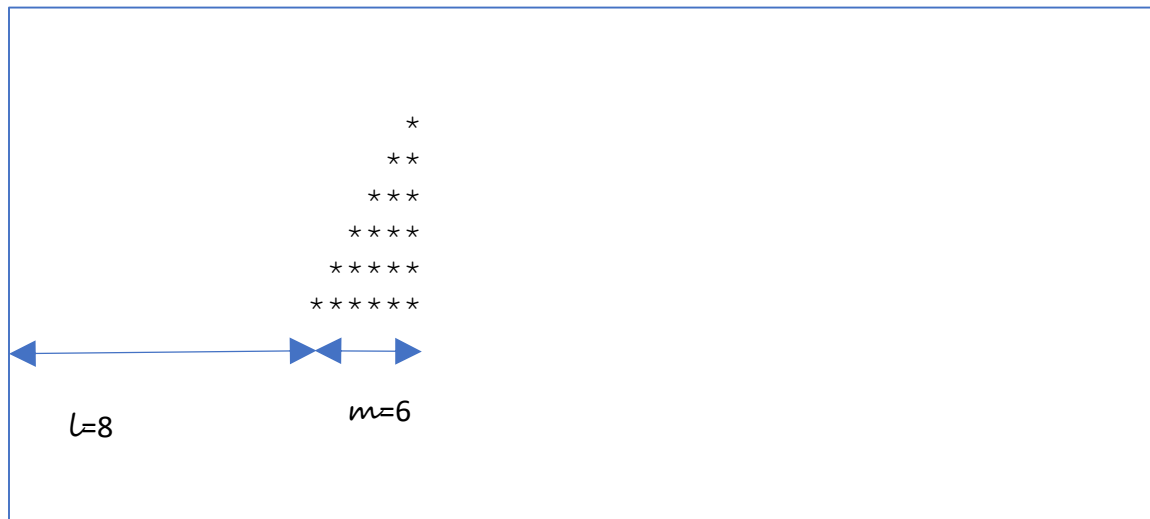
LAB 5

Objective:

The objective of this lab is to write small C programs and to get you familiar with loops and conditional statement.

Problem 1

Write a C program that displays a right angle triangle on the monitor. The triangle is a solid triangle filled with '*'. The input to the program are two integers, l and m . l represents the distance from the left edge of the monitor to the beginning of the last row of the triangle. m is the length of the last row of the triangle. Each row length is 1 less than the row below it, the width of the first row is 1. The figure below shows a triangle with $l=5$, $m=8$.



Submit as lab5_1.c

Problem 2

Write a C program that calculate the annual value of an investment. The program starts by reading the amount of money to be invested, then the number of years for the investment. Then it reads the interest rate for every year. Every year the money grows with the interest rate for this particular year. The taxes will be deducted, the remaining money after taxes are invested with the interest for the following year and so on.

The taxes are calculated as follows (Taxes are on the profit only), if the profit:

Up to \$5000.00	No taxes
>\$5000.00 and <= 10000.00	10% on the part over the \$5000.00
> \$10000.00	20% on the part over \$10,000.00 and 10% on \$5000.00

The input to the program is as follows

One line contains the amount of money to be invested

The second line contains the number of years

Followed by the interest year by year. The interest is a floating point number that is divided by a 100 to produce the actual rate. For example, if the interest rate is 8.3, that means 8.3%

An example is given below

INPUT

123534.00

4

12.1 -2.3 5.6 7.1

That means the initial money to be invested is \$123,534.00 the period is 4 years, the interest rate for the four years are 12.1%, -2.3%, 5.6%, and 7.1% (of course a negative rate means loss).

OUTPUT

The output is displayed as follows (every year is on a separate line)

The value after year n is: x

Where n is the year, and x is the value displayed with 2 decimal digits

There is a tab after is

For the above input, the output should be

The value after year 1 is: 136992.09

The value after year 2 is: 133841.28

The value after year 3 is: 141086.88

The value after year 4 is: 150600.61

Submit as lab5_2.c

BONUS + 10%

Do the same problem, but without the number of years as input, the number of rates is the number of years

Submit as lab5_2b.c