HOMEWORK 1

1. Write a C program that asks the user for the side lengths of 2 rectangles. The program finds which rectangle is bigger and prints the result on the screen. If any negative values are entered, the program displays "Negative value entered" and terminates.

   Sample run:
   Enter the side lenghts of the 1. rectangle: 5 7
   Enter the side lenghts of the 2. rectangle: 2 7
   The 1. rectangle is bigger.

2. Write a C program that asks the user to enter a temperature value *t* as a floating point number. The program should print:
   - "The weather's cold" if t<5,
   - "The weather's warm" if 5<t<20,
   - "The weather's hot" if t>20

   Sample run:
   Enter the temperature: 27.3
   The weather is hot.

3. A store applies discount depending on the amount of money spent. The discount percentages are given below:

Money Spent	Discount Percentage
0-100$	2%
101-300$	4%
301+ $	10%

   Write a C program that asks the user to enter the amount of money they spent shopping. Then the program calculates the respective discount percentage and prints the amount they should pay on the screen.

   Sample run:
   Enter the amount of money spent: 100
   Discount is 2%, the amount you must pay is 98.

4. The piecewise function y=f(x) is given below:

$$f(x) = \begin{cases} -x, & x < 0 \\ x^2, & 0 \le x \le 100 \\ x^2 - 50, & x > 100 \end{cases}$$

   Write a C program that asks the user to enter an integer, calculates the value of y=f(x) for that integer and prints the result on the screen.

Sample run:
Enter an integer: 20
f(x) = 400