1. Write a program in C to convert a decimal number to a binary number using the function.  
    Test Data:

Input any decimal number:65

Expected Output:

The Binary value is : 1000001

1. Given an integer x, return true *if* x *is a* ***palindrome*** *, and* false *otherwise*.

**Example 1:**

**Input:** x = 121

**Output:** true

**Explanation:** 121 reads as 121 from left to right and from right to left.

**Example 2:**

**Input:** x = -121

**Output:** false

**Explanation:** From left to right, it reads -121. From right to left, it becomes 121-. Therefore it is not a palindrome.

**Example 3:**

**Input:** x = 10

**Output:** false

**Explanation:** Reads 01 from right to left. Therefore it is not a palindrome.

3 .Implement pow(x, n), which calculates x raised to the power n (i.e., xn).

**Example 1:**

**Input:** x = 2.00000, n = 10

**Output:** 1024.00000

**Example 2:**

**Input:** x = 2.10000, n = 3

**Output:** 9.26100

4. You are climbing a staircase. It takes n steps to reach the top.

Each time you can either climb 1 or 2 steps. In how many distinct ways can you climb to the top?

**Example 1:**

**Input:** n = 2

**Output:** 2

**Explanation:** There are two ways to climb to the top.

1. 1 step + 1 step

2. 2 steps

**Example 2:**

**Input:** n = 3

**Output:** 3

**Explanation:** There are three ways to climb to the top.

1. 1 step + 1 step + 1 step

2. 1 step + 2 steps

3. 2 steps + 1 step

5. Given a sorted array of distinct integers and a target value, return the index if the target is found. If not, return the index where it would be if it were inserted in order.

**Example 1:**

**Input:** nums = [1,3,5,6], target = 5

**Output:** 2

**Example 2:**

**Input:** nums = [1,3,5,6], target = 2

**Output:** 1

**Example 3:**

**Input:** nums = [1,3,5,6], target = 7

**Output:** 4