gcc program.c   # Compiles program.c and generates a default executable named a.out **./a.out**   # Runs the compiled program
gcc program.c -o my_program   # Compiles program.c and creates an executable named my_program **./my_program**   # Runs the compiled program
gcc program.c -o input_program # it takes inputs from input1.txt and displays the result in the terminal. **./input_program < input.txt**
gcc program.c -o io_program **./io_program < input.txt > output.txt** # it takes the inputs from input1.txt and creates the myoutput.txt document and writes the result here.
diff output1.txt myoutput.txt # compares the document output1.txt with the document myoutput.txt.
diff --ignore-all-space output1.txt myoutput.txt # compares the document output1.txt with the document myoutput.txt without ignoring the spaces.

QUESTION 1

Write a program that calculates the sum of Fibonacci numbers at odd indices and even indices separately. The program should also calculate the total sum of Fibonacci numbers up to the given number of terms.

1. The program will first ask the user to input a positive integer n, representing the number of Fibonacci numbers to generate.
2. The Fibonacci sequence is a series of numbers where each number is the sum of the two preceding ones. The sequence starts as follows:

Fib(0) = 0 | Fib(1) = 1 | Fib(2) = 0+1=1 | Fib(3) = 1+1=2 | Fib(4) = 1+2=3 | Fib(5) = 2+3=5 ... and so on.

3. The program should display each Fibonacci number along with its index (i.e., Fib(index) = value).
4. The program should calculate the sum of Fibonacci numbers **(USING LOOP)**
    a. **USING SWITCH**
        i. odd indices (e.g., 1, 3, 5, ...)
        ii. even indices (e.g., 0, 2, 4, ...).
5. The sum of Fibonacci numbers at **odd indices and even indices should be computed separately**, and these sums should be displayed.
6. Finally, the program should compute and **display the total sum of all Fibonacci numbers** up to n terms, which is the sum of both the even and odd indexed sums.

Note: It is mandatory to use a **LOOP & SWITCH.**

<u>Input</u>	<u>Output</u>
Enter the number of Fibonacci numbers: 5	**Sum of Fibonacci numbers at odd indices: 3** **Sum of Fibonacci numbers at even indices: 4** **Total sum of Fibonacci numbers: 7**
Enter the number of Fibonacci numbers: 7	**Sum of Fibonacci numbers at odd indices: 8** **Sum of Fibonacci numbers at even indices: 12** **Total sum of Fibonacci numbers: 20**