1. **Write a C program to arrange numbers using Selection Sort.**

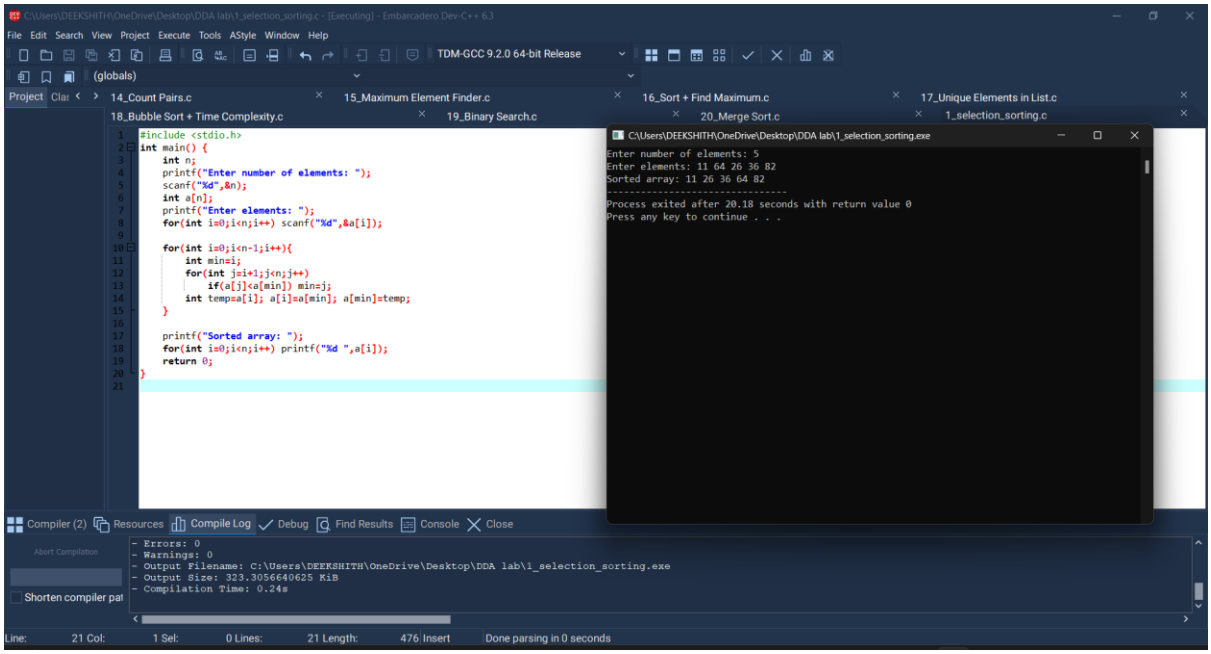
Aim: To write a C program to sort a given list of numbers using Selection Sort .

Algorithm:

1. Take numbers in an array
2. Find the smallest number and put it first
3. Repeat for the remaining numbers
4. Print the sorted array

Input: 11 64 26 36 82

Output: 11 26 36 64 82



2. Duplicate in a instruction.

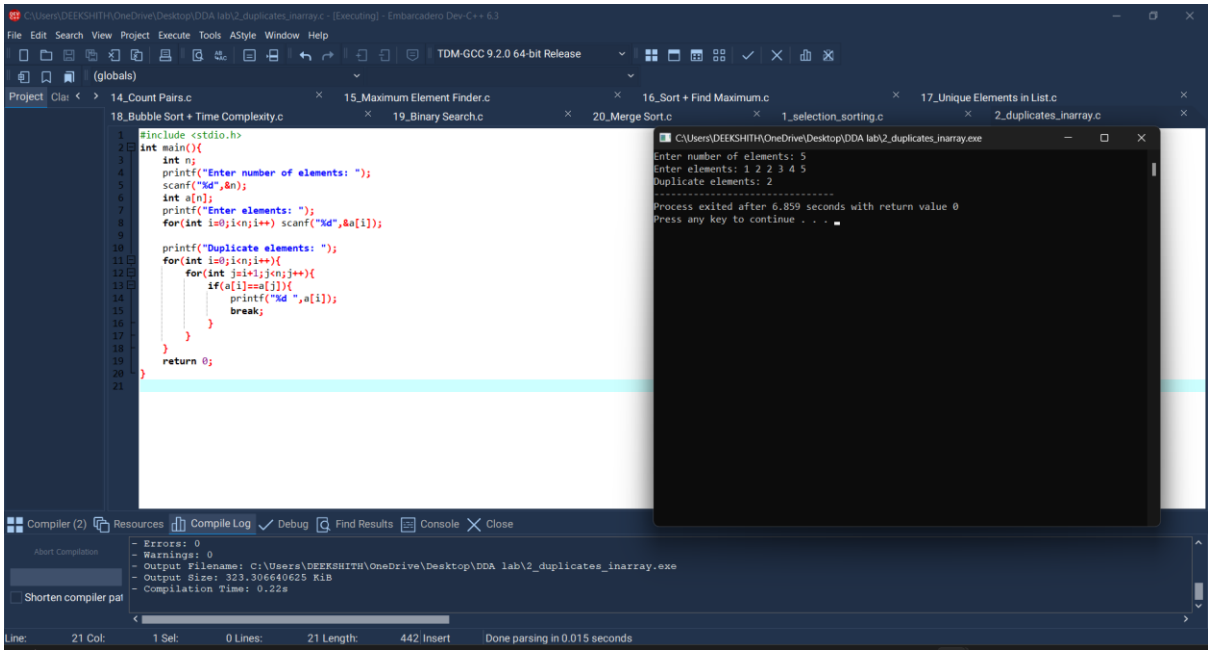
Aim:
To write a C program to find duplicate elements in an array.

Algorithm:

1. Start
2. Read n numbers into array
3. Compare each element with others
4. If any two are equal, print as duplicate
5. Stop

Input: 1 2 2 3 4 5

Output:2



3. Bigger Number in a Series.

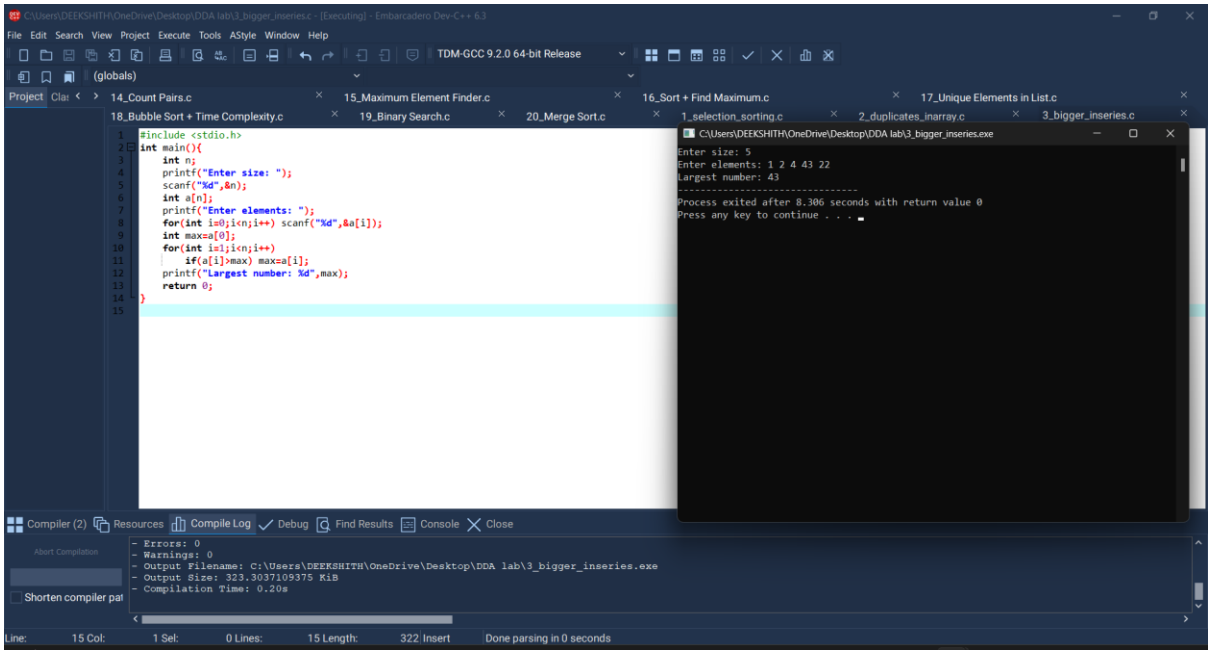
Aim:
To write a C program to find the largest number from given numbers.

Algorithm:

1. Start
2. Read n numbers
3. Assume first number as max
4. Compare each number with max
5. If bigger, update max
6. Print max
7. Stop

Input: 1 2 4 43 22

Output: 43



4. Recursion – Factorial of a Given Number.

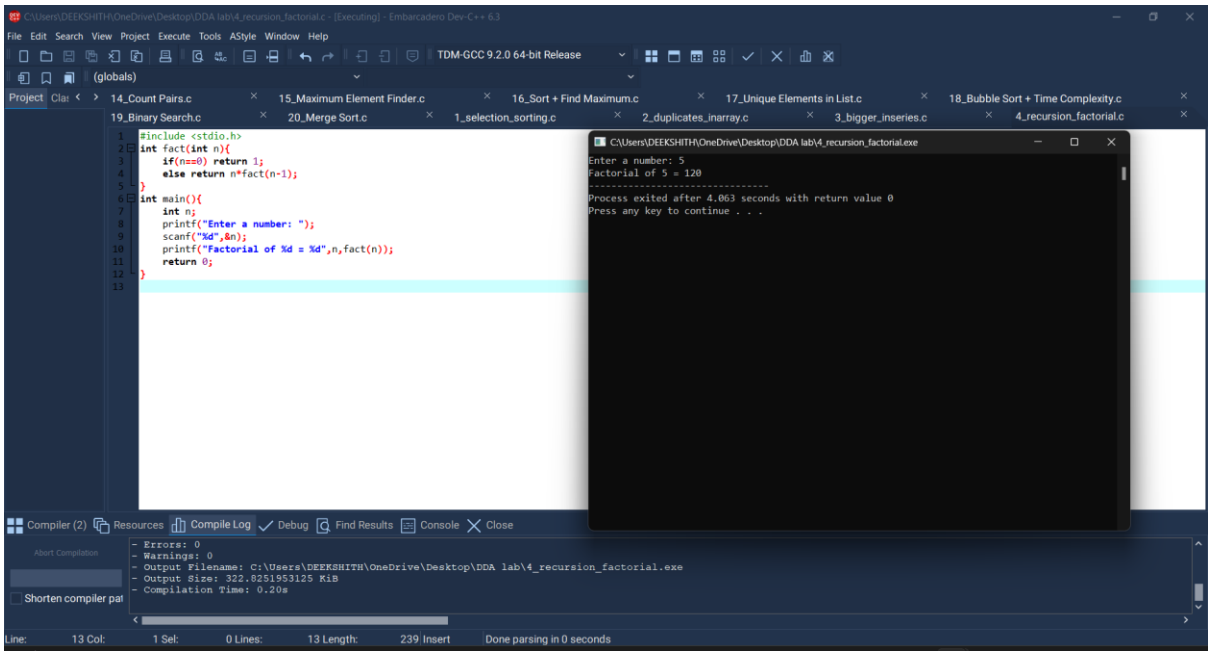
Aim:
To write a C program to find the factorial of a number using recursion.

Algorithm:

1. Start
2. Read a number n
3. If n==0 or n==1 → return 1
4. Else return n * factorial(n-1)
5. Print result
6. Stop

Input: 5

Output: 120



5. Fibonacci Series.

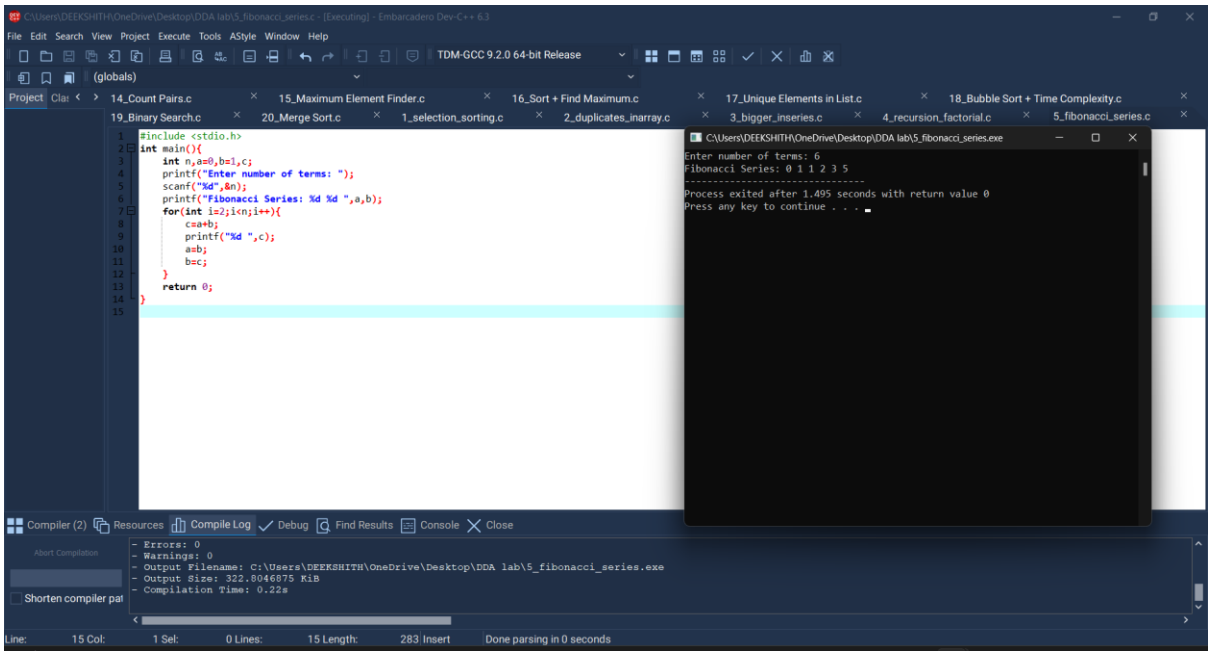
Aim:
To write a C program to generate the Fibonacci series.

Algorithm:

1. Start
2. Read n terms
3. Initialize t1=0, t2=1
4. Print t1 and t2
5. Repeat for remaining terms: next = t1+t2, print, update t1=t2, t2=next
6. Stop

Input: 6

Output: 0 1 1 2 3 5



6. Two Order Homogeneous Recursion.

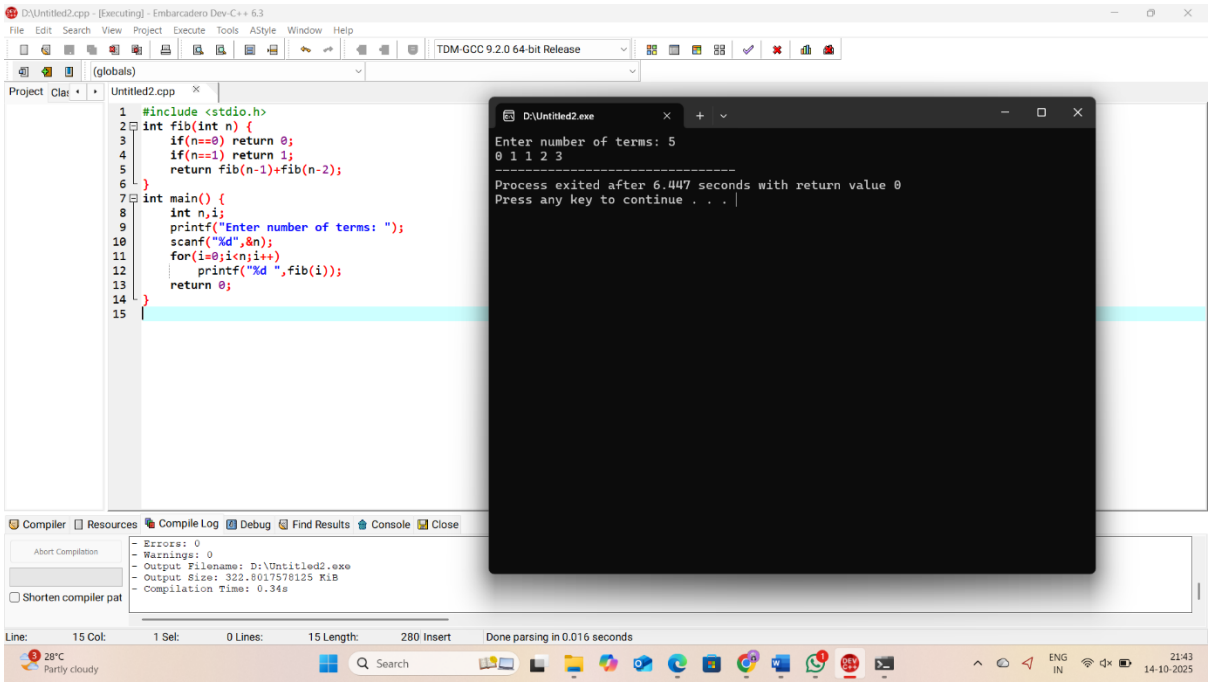
Aim:
To write a C program using recursion for a second-order homogeneous recurrence relation.

Algorithm:

1. Start
2. Define recursive relation: F(n)=F(n-1)+F(n-2)
3. Base cases: F(0)=0, F(1)=1
4. Print terms using recursion
5. Stop

Input: terms=5

Output: 0 1 1 2 3



7. Leap Year

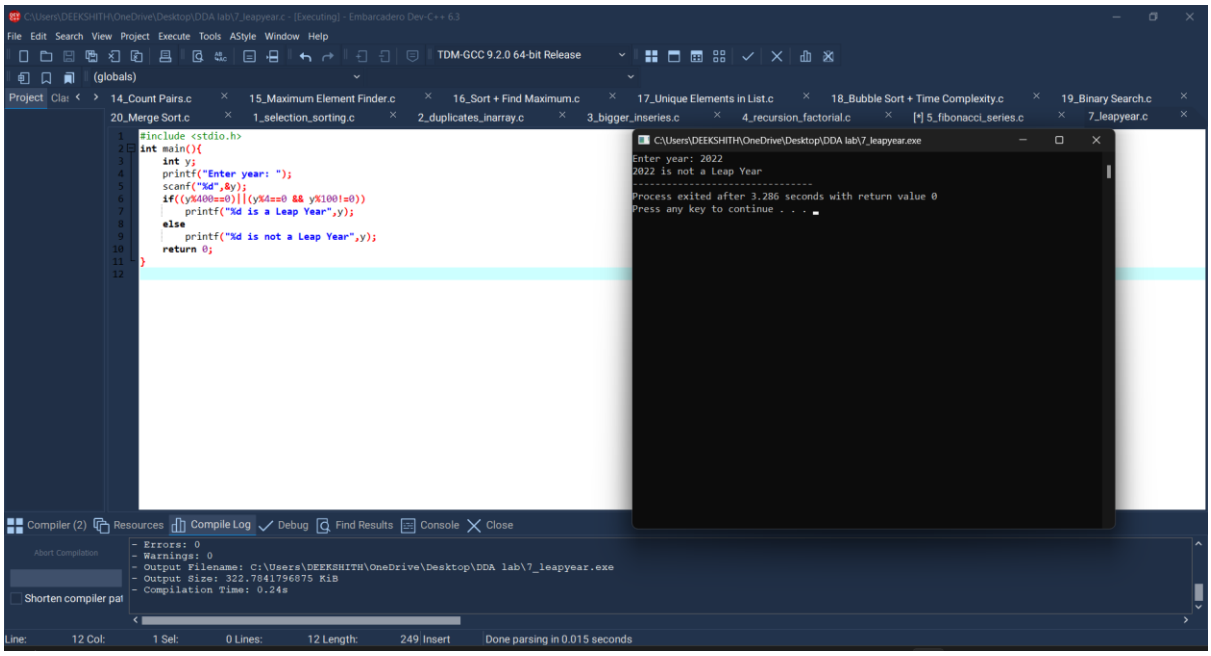
Aim:
To write a C program to check whether a year is a leap year.

Algorithm:

1. Start
2. Read year
3. If divisible by 400 → leap year
4. Else if divisible by 4 but not by 100 → leap year
5. Else not a leap year
6. Stop

Input: year=2022

Output: 2022 is not a leap year



8. Swapping of Numbers.

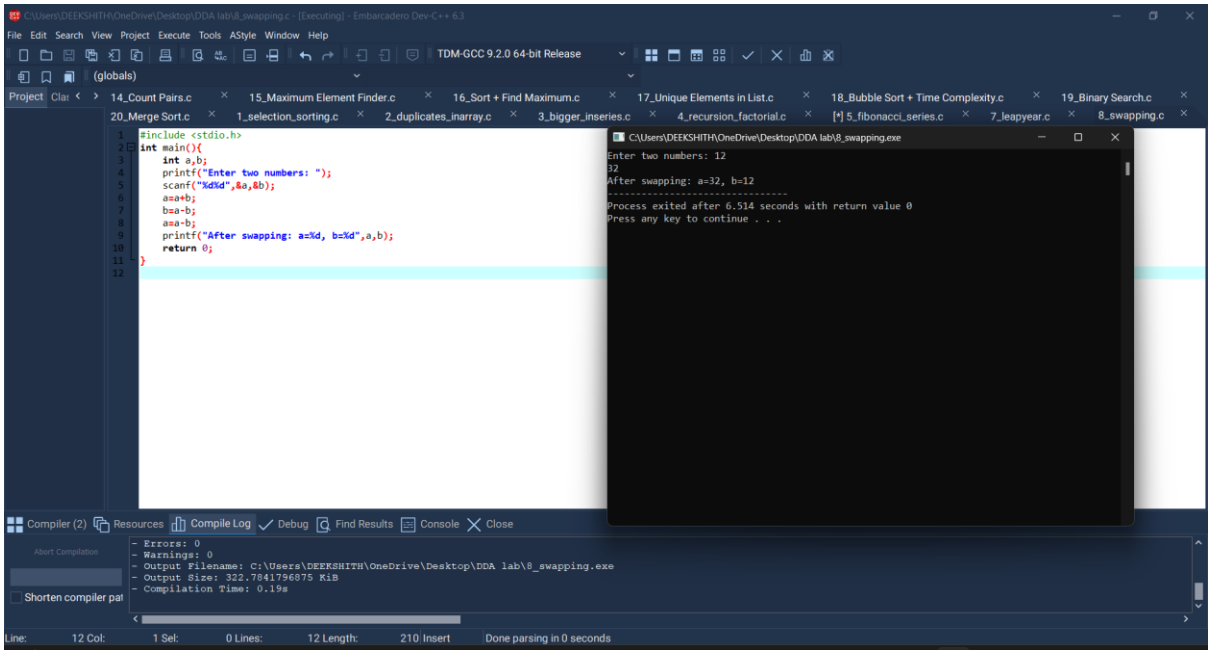
Aim:
To write a C program to swap two numbers.

Algorithm:

1. Start
2. Read two numbers a and b
3. Swap using temp variable (or without)
4. Print swapped values
5. Stop

Input: a=12 b=32

Output: a=32 b=12



9. Identifying Palindrome

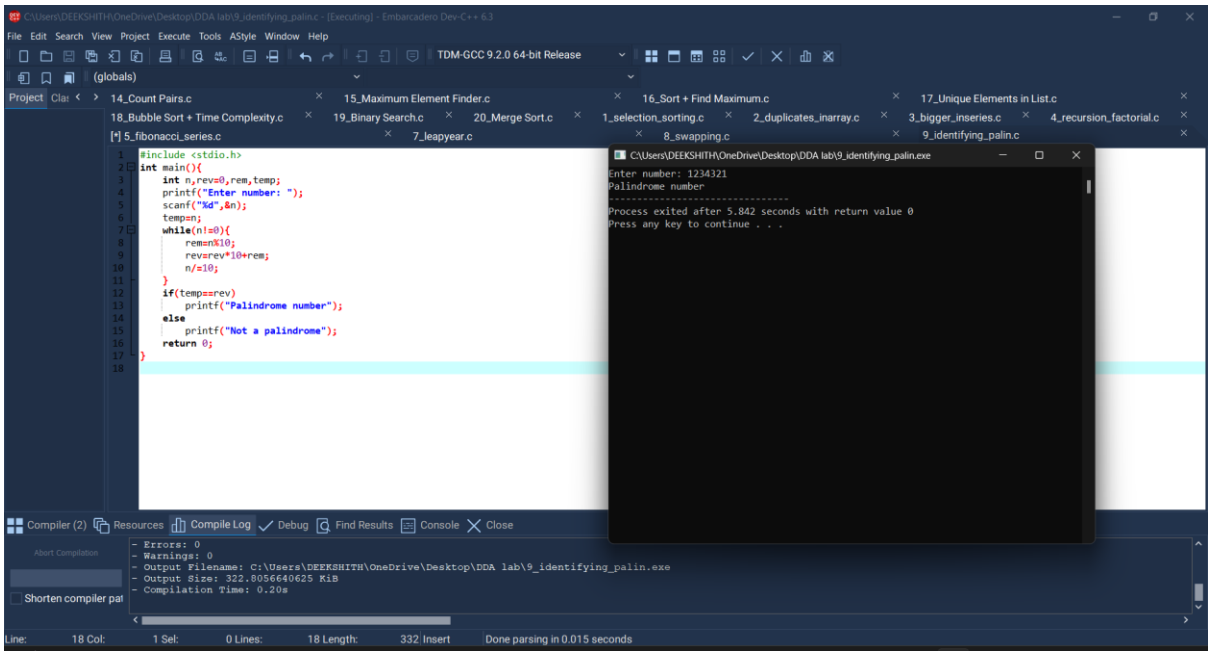
Aim:
To write a C program to check whether a number is a palindrome.

Algorithm:

1. Start
2. Read a number n
3. Reverse digits of n
4. If reverse = original → palindrome
5. Else not palindrome
6. Stop

Input: 1234321

Output: palindrome number



10. Prime Number

Aim:
To write a C program to check whether a number is prime.

Algorithm:

1. Start
2. Read n
3. If n<=1 → not prime
4. Check divisibility from 2 to n/2
5. If divisible → not prime
6. Else → prime
7. Stop

Input: 37

Output: prime number