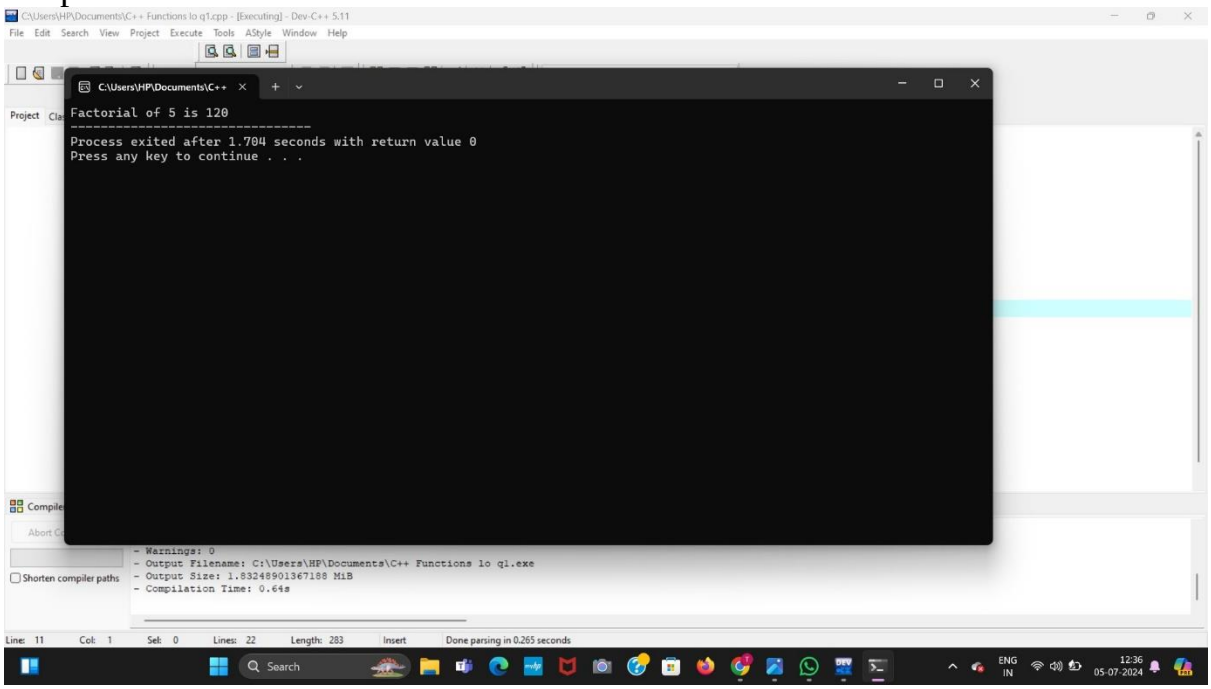
FUNCTIONS

1. Find factorial using function

```
#include<iostream>
using namespace std;
void factorial(int n, int *f)
{
        int i;
        for(i = n; i >= 1; i--)
                *f = (*f) * i;
}
int main()
{
        int num = 5, fact = 1;
        factorial(num, &fact);
        cout << "Factorial of " <<
                        num << " is "<<
                        fact;
        return 0;
}
```

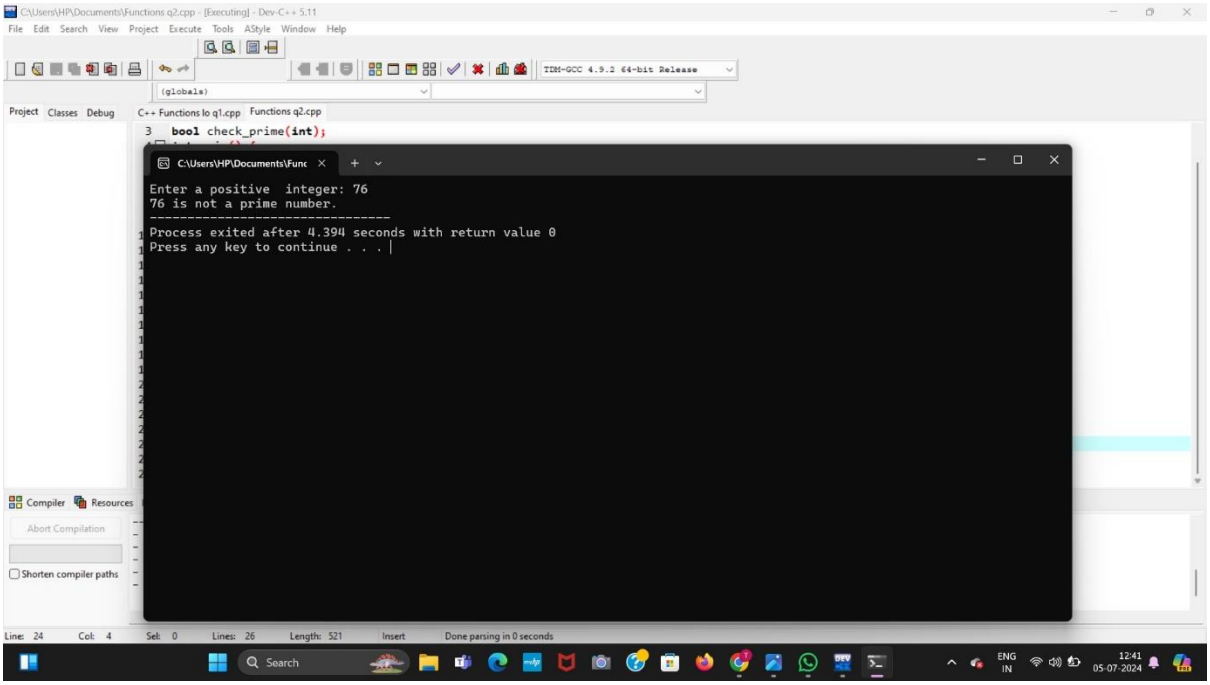
Output:



2. Find prime number using function

```
#include <iostream>
using namespace std;
bool check_prime(int);
int main() {
 int n;
 cout << "Enter a positive  integer: ";
 cin >> n;
 if (check_prime(n))
  cout << n << " is a prime number.";
 else
  cout << n << " is not a prime number.";
 return 0;
}
bool check_prime(int n) {
 bool is_prime = true;
 if (n == 0 || n == 1) {
  is_prime = false;
 }
 for (int i = 2; i <= n / 2; ++i) {
  if (n % i == 0) {
   is_prime = false;
   break;
  }
 }
 return is_prime;
}
```

Output:



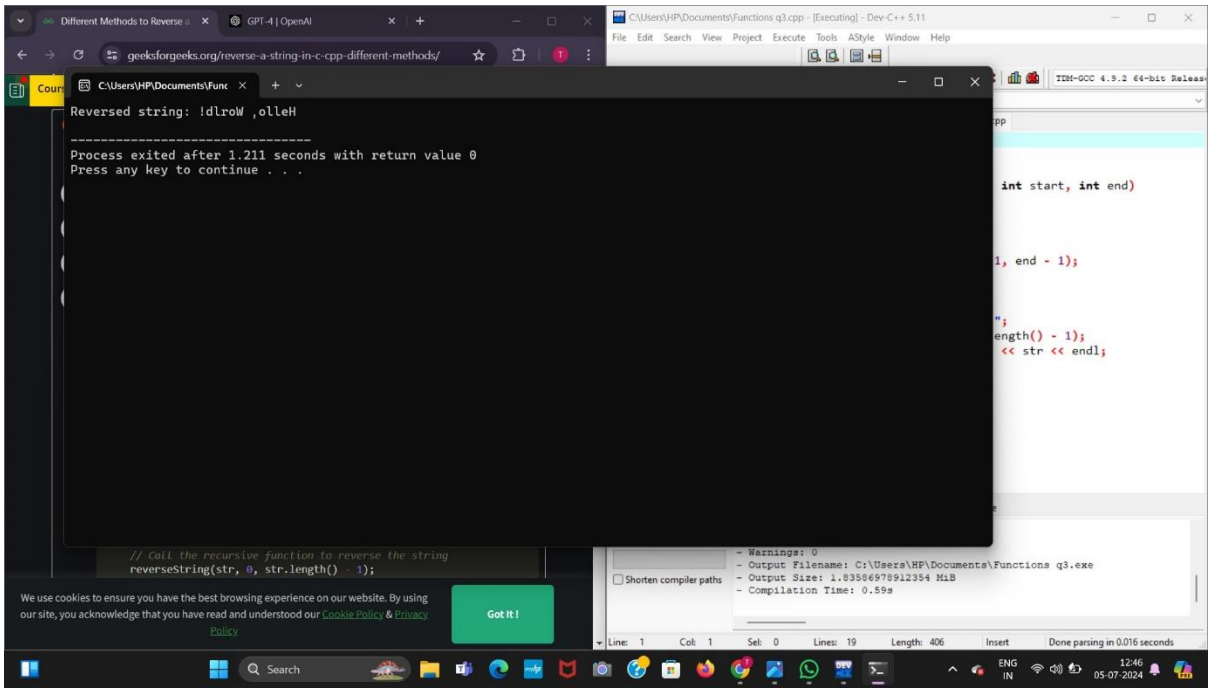
3. Find the reverse of a string using function

```
#include <iostream>
#include <string>
using namespace std;
void reverseString(string& str, int start, int end)
{
   if (start >= end)
      return;
   swap(str[start], str[end]);
   reverseString(str, start + 1, end - 1);
}

int main(){
   string str = "Hello, World!";
   reverseString(str, 0, str.length() - 1);
   cout << "Reversed string: " << str << endl;

   return 0;
}
```

Output:

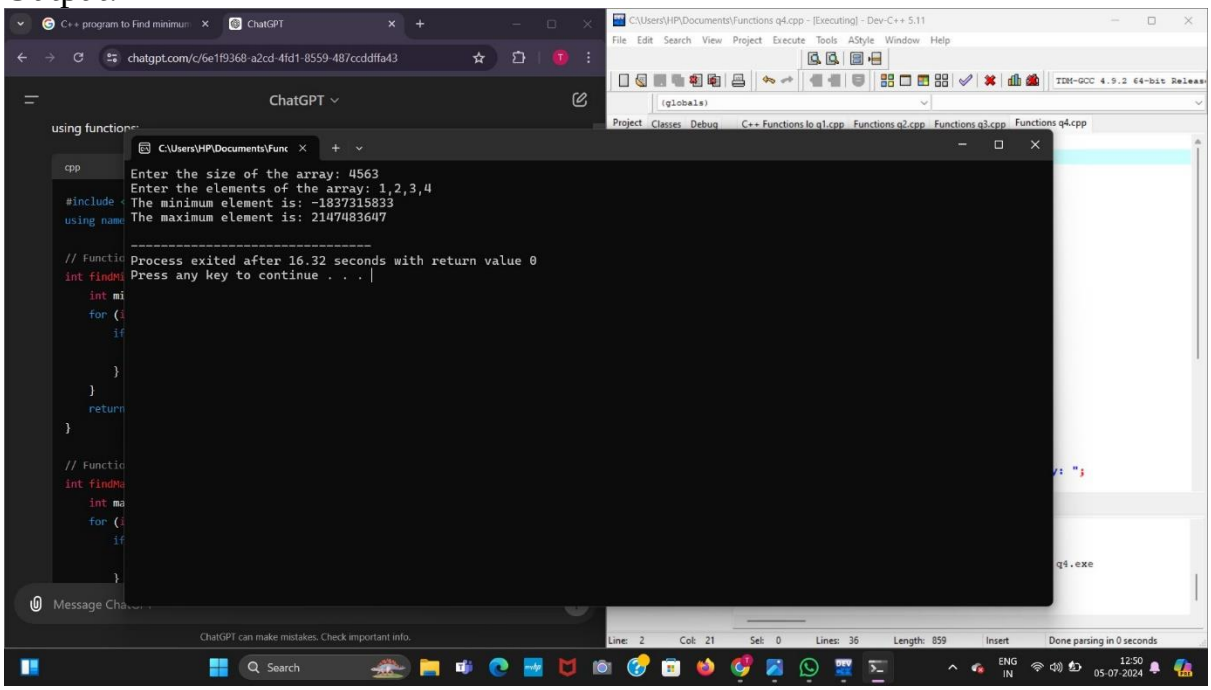


4. Find minimum and maximum element in an array using function

```
#include <iostream>
using namespace std;
int findMin(int arr[], int size) {
  int min = arr[0];
  for (int i = 1; i < size; i++) {
    if (arr[i] < min) {
      min = arr[i];
    }
  }
  return min;
}
int findMax(int arr[], int size) {
  int max = arr[0];
  for (int i = 1; i < size; i++) {
    if (arr[i] > max) {
      max = arr[i];
    }
  }
  return max;
}
int main() {
  int size;
  cout << "Enter the size of the array: ";
  cin >> size;
```

```
    int arr[size];
    cout << "Enter the elements of the array: ";
    for (int i = 0; i < size; i++) {
       cin >> arr[i];
    }
    int min = findMin(arr, size);
    int max = findMax(arr, size);
    cout << "The minimum element is: " << min << endl;
    cout << "The maximum element is: " << max << endl;
    return 0;
}
```

Output:



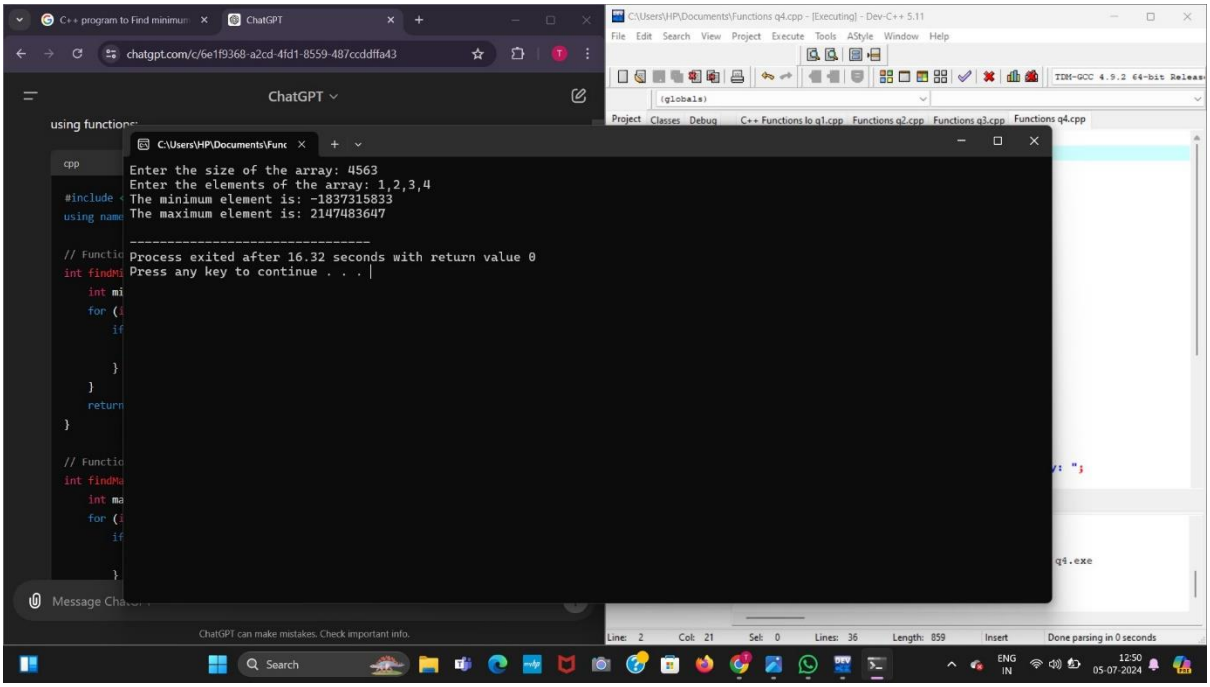
5.Function to count the no of elements in a string

```
#include <iostream>
#include <string>
using namespace std;
int countCharacters(const string &str) {
   return str.length();
}
int main() {
   string inputString;
   cout << "Enter a string: ";
   getline(cin, inputString);
   int count = countCharacters(inputString);
```

```
    cout << "The number of characters in the string is: " << count << endl;

    return 0;
}
```

Output:

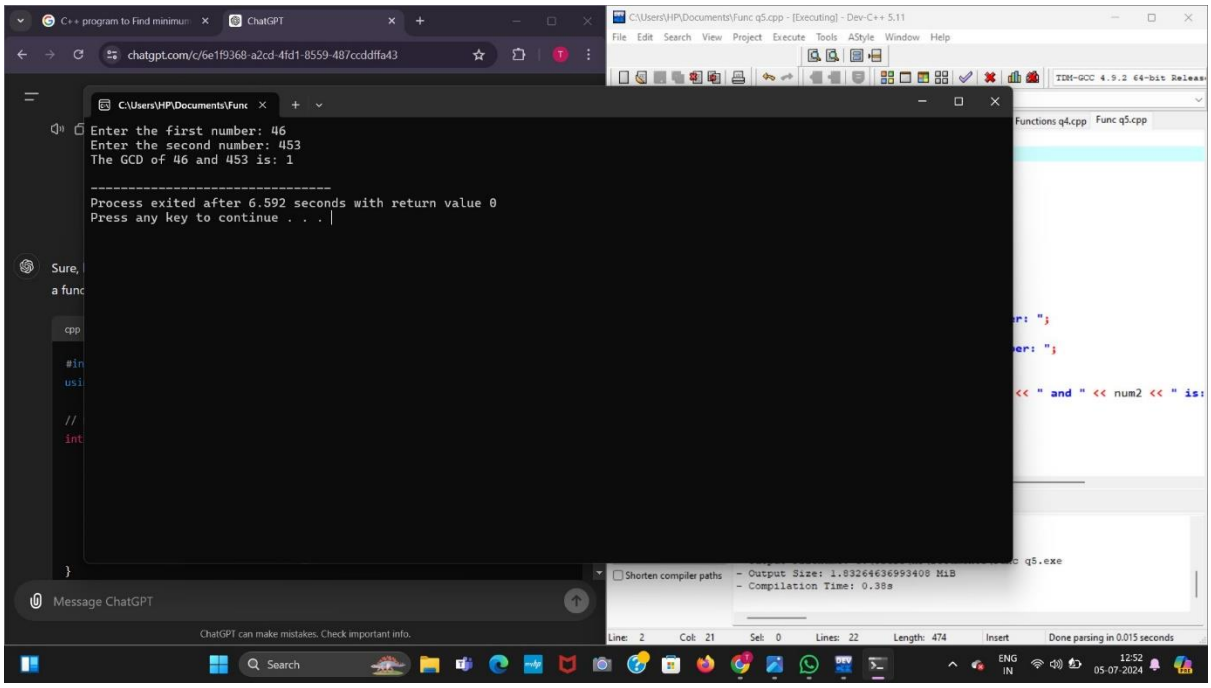


6. Find GCD of two number using function

```
#include <iostream>
using namespace std;
bool check_prime(int);
int main() {
 int n;
 cout << "Enter a positive  integer: ";
 cin >> n;
 if (check_prime(n))
  cout << n << " is a prime number.";
 else
  cout << n << " is not a prime number.";
 return 0;
}
bool check_prime(int n) {
 bool is_prime = true;
 if (n == 0 || n == 1) {
  is_prime = false;
 }
 for (int i = 2; i <= n / 2; ++i) {
  if (n % i == 0) {
```

```
    is_prime = false;
    break;
   }
  }
 return is_prime;
}
```

Output:



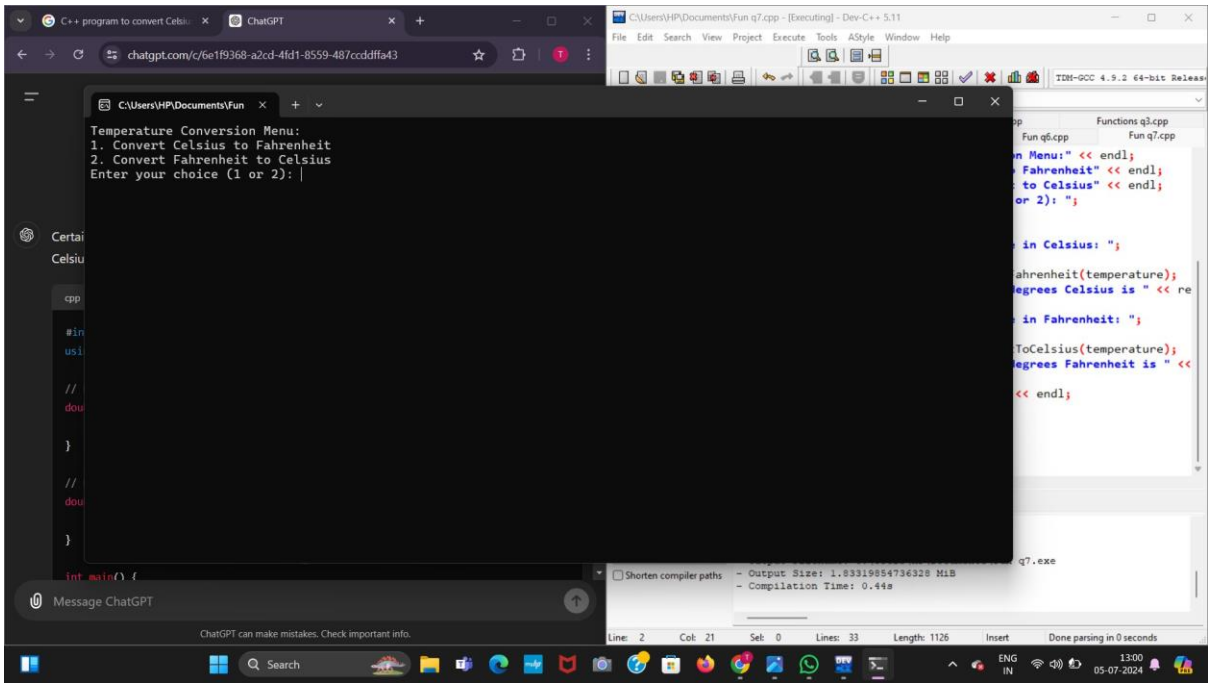
7. Convert Celsius and Fahrenheit using function

```
#include <iostream>
using namespace std;
double celsiusToFahrenheit(double celsius) {
  return (celsius * 9/5) + 32;
}
double fahrenheitToCelsius(double fahrenheit) {
  return (fahrenheit - 32) * 5/9;
}
int main() {
  double temperature;
  int choice;
  cout << "Temperature Conversion Menu:" << endl;
  cout << "1. Convert Celsius to Fahrenheit" << endl;
  cout << "2. Convert Fahrenheit to Celsius" << endl;
  cout << "Enter your choice (1 or 2): ";
  cin >> choice;
  if (choice == 1) {
    cout << "Enter temperature in Celsius: ";
```

```
    cin >> temperature;
    double result = celsiusToFahrenheit(temperature);
    cout << temperature << " degrees Celsius is " << result << " degrees
Fahrenheit." << endl;
  } else if (choice == 2) {
    cout << "Enter temperature in Fahrenheit: ";
    cin >> temperature;
    double result = fahrenheitToCelsius(temperature);
    cout << temperature << " degrees Fahrenheit is " << result << " degrees
Celsius." << endl;
  } else {
    cout << "Invalid choice!" << endl;
  }

  return 0;
}
```

Output:



8. Find the area of a circle using function

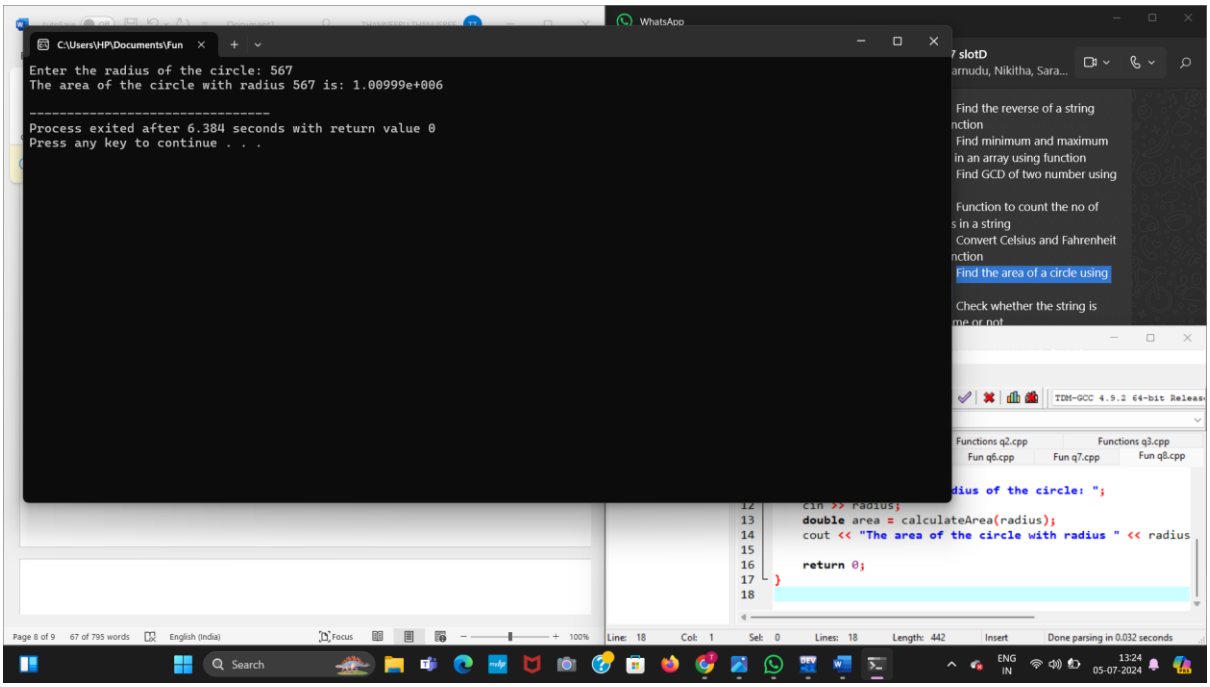
```
#include <iostream>
#include <cmath>
using namespace std;
double calculateArea(double radius) {
  const double PI = 3.14159265358979323846;
  return PI * radius * radius;
```

```
}

int main() {
   double radius;
   cout << "Enter the radius of the circle: ";
   cin >> radius;
   double area = calculateArea(radius);
   cout << "The area of the circle with radius " << radius << " is: " << area << endl;

   return 0;
}
```

Output:



9. Check whether the string is palindrome or not

```
#include <iostream>
#include <string>
#include <algorithm>
using namespace std;
bool isPalindrome(const string &str) {
   int left = 0;
   int right = str.length() - 1;

   while (left < right) {
      if (str[left] != str[right]) {
         return false;
      }
      left++;
```

```
        right--;
    }
    return true;
}

int main() {
    string inputString;
    cout << "Enter a string: ";
    getline(cin, inputString);
    if (isPalindrome(inputString)) {
        cout << "The string \"" << inputString << "\" is a palindrome." << endl;
    } else {
        cout << "The string \"" << inputString << "\" is not a palindrome." << endl;
    }

    return 0;
}
```

Output: