main.cpp

Run

Output

Clear

```cpp
#include <iostream>
#include <algorithm>
using namespace std;

int getSecondLargest(int arr[], int n) {
    sort(arr, arr + n);
    return arr[n - 2];
}

int main() {
    int arr[] = {12, 35, 1, 10, 34, 1};
    int n = sizeof(arr) / sizeof(arr[0]);

    cout << "Given array elements: ";
    for (int i = 0; i < n; i++) {
        cout << arr[i] << ", ";
    }

    cout << "\nThe second largest element: " <<
        getSecondLargest(arr, n);

    return 0;
}
```

```
/tmp/TGEZk3NkLo.o
Given array elements: 12, 35, 1, 10, 34, 1,
The second largest element: 34
```

main.cpp

Run

Output

Clear

```cpp
#include <iostream>

int main() {
    int num1, num2, num3;
    double average;

    std::cout << "Enter three integers: ";
    std::cin >> num1 >> num2 >> num3;

    average = (num1 + num2 + num3) / 3.0;

    std::cout << "Average of the three numbers: "
        " << average << std::endl;

    return 0;
}
```

```
/tmp/TGEZk3NkLo.o
Enter three integers: 1
23
45
Average of the three numbers: 23
```

main.cpp

Run

Output

Clear

```cpp
#include <iostream>

class Complex {
private:
    double real;
    double imag;

public:
    Complex(double r = 0.0, double i = 0.0) :
        real(r), imag(i) {}


    Complex operator+(const Complex& other)
        const {
        return Complex(real + other.real, imag
            + other.imag);
    }

    
    void display() const {
        if (imag >= 0)
            std::cout << real << " + " << imag
                << "i";
        else
            std::cout << real << " - " << -imag
                << "i";
    }
};

int main() {
    Complex num1(2.0, 3.0);
    Complex num2(1.5, 2.5);

    Complex sum = num1 + num2;

    std::cout << "Result of addition: ";
    sum.display();
    std::cout << std::endl;

    return 0;
}

```

```
/tmp/TGEZk3NkLo.o
Result of addition: 3.5 + 5.5i
```

main.cpp

Run

Output

Clear

```cpp
#include <iostream>

class Rectangle {
private:
    double length;
    double width;

public:

    Rectangle(double l, double w) : length(l), width(w) {
        std::cout << "Rectangle object created." << std::endl;
    }

    // Destructor
    ~Rectangle() {
        std::cout << "Rectangle object destroyed." << std::endl;
    }

    double area() {
        return length * width;
    }
};

int main() {

    Rectangle rect(5.0, 3.0);


    std::cout << "Area of the rectangle: " << rect.area() << std::endl;

    return 0;
}

```

```
/tmp/TGEZk3NkLo.o
Rectangle object created.
Area of the rectangle: 15
Rectangle object destroyed.
```

main.cpp

Run

```cpp
#include <iostream>

using namespace std;

int main() {
    int num1, num2;

    cout << "Enter two positive integers: ";
    cin >> num1 >> num2;

    int gcd;

    do {
        if (num1 > num2) {
            num1 -= num2;
        } else {
            num2 -= num1;
        }
    } while (num1 != num2);

    gcd = num1;

    cout << "The GCD of " << num1 << " and " <<
        num2 << " is " << gcd << endl;

    return 0;
}
```

Output

Clear

```
/tmp/TGEZk3NkLo.o
Enter two positive integers: 23
24
The GCD of 1 and 1 is 1
```

main.cpp

Run

Output

Clear

```cpp
#include <iostream>

using namespace std;

int main() {
    int num;
    bool isPrime = true;

    cout << "Enter a positive integer: ";
    cin >> num;

    // 0 and 1 are not prime numbers
    if (num <= 1) {
        isPrime = false;
    } else {
        for (int i = 2; i <= num / 2; ++i) {
            if (num % i == 0) {
                isPrime = false;
                break;
            }
        }
    }

    if (isPrime) {
        cout << num << " is a prime number." <<
            endl;
    } else {
        cout << num << " is not a prime number
            ." << endl;
    }

    return 0;
}
```

```
/tmp/I7HYmbJ9vo.o
Enter a positive integer: 7
7 is a prime number.
```