



main.cpp

```
1 #include <iostream>
2 using namespace std;
3
4 bool isPrime(int num, int i) {
5     if (num <= 2)
6         return (num == 2) ? true : false;
7     if (num % i == 0)
8         return false;
9     if (i * i > num)
10        return true;
11    return isPrime(num, i + 1);
12 }
13
14 int main() {
15     int num;
16     cout << "Enter a number: ";
17     cin >> num;
18     if (isPrime(num, 2))
19         cout << num << " is a prime number.";
20     else
21         cout << num << " is not a prime number.";
22     return 0;
23 }
24
25
26
```



input

Enter a number: 13
13 is a prime number.

...Program finished with exit code 0
Press ENTER to exit console.



main.cpp

```
1 #include <iostream>
2 #include <string.h>
3 using namespace std;
4
5 void reverseStr(char* str, int start, int end) {
6     if (start >= end)
7         return;
8     swap(str[start], str[end]);
9     reverseStr(str, start + 1, end - 1);
10 }
11
12 int main() {
13     char str[100];
14     cout << "Enter a string: ";
15     cin >> str;
16     reverseStr(str, 0, strlen(str) - 1);
17     cout << "Reversed string: " << str;
18     return 0;
19 }
20
```



input

Enter a string: premalu
Reversed string: ulamerp

...Program finished with exit code 0
Press ENTER to exit console.



main.cpp

```
5     if (num <= 2)
6         return (num == 2) ? true : false;
7     if (num % i == 0)
8         return false;
9     if (i * i > num)
10        return true;
11    return isPrime(num, i + 1);
12 }
13
14 void printPrimes(int n, int current) {
15     if (current > n)
16         return;
17     if (isPrime(current, 2))
18         cout << current << " ";
19     printPrimes(n, current + 1);
20 }
21
22 int main() {
23     int n;
24     cout << "Enter the limit: ";
25     cin >> n;
26     printPrimes(n, 2);
27     return 0;
28 }
29
30
31
```

```
Enter the limit: 20
2 3 5 7 11 13 17 19

...Program finished with exit code 0
Press ENTER to exit console.
```



main.cpp

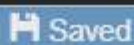
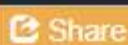
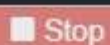
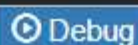
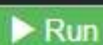
```
1 #include <iostream>
2 using namespace std;
3
4 void strCopy(char* source, char* dest, int index) {
5     dest[index] = source[index];
6     if (source[index] == '\0')
7         return;
8     strCopy(source, dest, index + 1);
9 }
10
11 int main() {
12     char source[100], dest[100];
13     cout << "Enter a string: ";
14     cin >> source;
15     strCopy(source, dest, 0);
16     cout << "Copied string: " << dest;
17     return 0;
18 }
19
20
```



input

Enter a string: happy
Copied string: happy

...Program finished with exit code 0
Press ENTER to exit console.



main.cpp

```
1  #include <iostream>
2  using namespace std;
3
4  int factorial(int n) {
5      if (n <= 1)
6          return 1;
7      return n * factorial(n - 1);
8  }
9
10 int main() {
11     int n;
12     cout << "Enter a number: ";
13     cin >> n;
14     cout << "Factorial: " << factorial(n);
15     return 0;
16 }
17
```



Enter a number: 5

Factorial: 120

...Program finished with exit code 0

Press ENTER to exit console.



main.cpp

```
1  #include <iostream>
2  using namespace std;
3
4  int findLargest(int arr[], int n) {
5      if (n == 1)
6          return arr[0];
7      return max(arr[n-1], findLargest(arr, n-1));
8  }
9
10 int main() {
11     int n;
12     cout << "Enter number of elements: ";
13     cin >> n;
14     int arr[n];
15     cout << "Enter elements: ";
16     for (int i = 0; i < n; i++)
17         cin >> arr[i];
18     cout << "Largest element: " << findLargest(arr, n);
19     return 0;
20 }
21
22
23
```



input

```
Enter number of elements: 5
Enter elements: 1 5 25 75 99
Largest element: 99
```

```
...Program finished with exit code 0
Press ENTER to exit console.
```



main.cpp

```
1  #include <iostream>
2  using namespace std;
3
4  int gcd(int a, int b) {
5      if (b == 0)
6          return a;
7      return gcd(b, a % b);
8  }
9
10 int main() {
11     int a, b;
12     cout << "Enter two numbers: ";
13     cin >> a >> b;
14     cout << "GCD: " << gcd(a, b);
15     return 0;
16 }
17
18
19
```



input

```
Enter two numbers: 12
24
GCD: 12

...Program finished with exit code 0
Press ENTER to exit console.
```



main.cpp

```
1  #include <iostream>
2  using namespace std;
3
4  int fib(int n) {
5      if (n <= 1)
6          return n;
7      return fib(n - 1) + fib(n - 2);
8  }
9
10 int main() {
11     int n;
12     cout << "Enter the number of terms: ";
13     cin >> n;
14     for (int i = 0; i < n; i++)
15         cout << fib(i) << " ";
16     return 0;
17 }
18
19
20
```



input

```
Enter the number of terms: 5
0 1 1 2 3

...Program finished with exit code 0
Press ENTER to exit console.
```




main.cpp

```
1 #include <iostream>
2 #include <cmath>
3 using namespace std;
4
5 int power(int num, int p) {
6     if (p == 0) return 1;
7     return num * power(num, p - 1);
8 }
9 int sumOfPoweredDigits(int num, int len) {
10     if (num == 0) return 0;
11     return power(num % 10, len) + sumOfPoweredDigits(num / 10, len);
12 }
13
14
15 bool isArmstrong(int num) {
16     int len = to_string(num).length();
17     int sum = sumOfPoweredDigits(num, len);
18     return sum == num;
19 }
20
21 int main() {
22     int num;
23     cout << "Enter a number: ";
24     cin >> num;
25
26     if (isArmstrong(num))
27         cout << num << " is an Armstrong number." << endl;
```



input

```
Enter a number: 153
153 is an Armstrong number.

...Program finished with exit code 0
Press ENTER to exit console.
```



main.cpp

```
1 #include <iostream>
2 #include<string.h>
3 using namespace std;
4
5 bool isPalindrome(char* str, int start, int end) {
6     if (start >= end)
7         return true;
8     if (str[start] != str[end])
9         return false;
10    return isPalindrome(str, start + 1, end - 1);
11 }
12
13 int main() {
14     char str[100];
15     cout << "Enter a string: ";
16     cin >> str;
17     if (isPalindrome(str, 0, strlen(str) - 1))
18         cout << str << " is a palindrome.";
19     else
20         cout << str << " is not a palindrome.";
21     return 0;
22 }
23
24
```



input

Enter a string: madam
madam is a palindrome.

...Program finished with exit code 0
Press ENTER to exit console.