


BASIC PROGRAMS

1. Write a c program to find factorial of a given number

Aim: To find factorial of a given number



The screenshot shows a C program in a code editor with a 'main.c' tab. The code calculates the factorial of a user-input number. The output window on the right shows the program's execution: it prompts for a positive integer, receives '4', and outputs 'Factorial of 4 = 24'. A success message '=== Code Execution Successful ===' is also displayed.

```
1  #include <stdio.h>
2
3- int main() {
4      int num, i;
5      unsigned long long factorial = 1;
6
7      printf("Enter a positive integer: ");
8      scanf("%d", &num);
9
10     if (num < 0) {
11         printf("Factorial is not defined for negative numbers\n");
12     } else {
13         for (i = 1; i <= num; i++) {
14             factorial *= i;
15         }
16         printf("Factorial of %d = %llu\n", num, factorial);
17     }
18
19     return 0;
20 }
21
```

Output

Enter a positive integer: 4
Factorial of 4 = 24

=== Code Execution Successful ===

RESULT

The factorial of the given number is successfully executed and the output is verified.

2. Write a c program to find greatest among three numbers

Aim: To find greatest of three numbers

main.c	Output
<pre>1 #include <stdio.h> 2 3 int main() { 4 int a, b, c; 5 6 printf("Enter three numbers: "); 7 scanf("%d %d %d", &a, &b, &c); 8 9 if (a >= b && a >= c) 10 printf("Greatest number is %d\n", a); 11 else if (b >= a && b >= c) 12 printf("Greatest number is %d\n", b); 13 else 14 printf("Greatest number is %d\n", c); 15 16 return 0; 17 } 18</pre>	<pre>Enter three numbers: 4 5 7 Greatest number is 7 === Code Execution Successful ===</pre>

RESULT

The greatest of three numbers program is successfully executed and the output is verified.

3. Write a c program to find leap year

Aim: To find leap year

main.c	Output
<pre>1 #include <stdio.h> 2 3 int main() { 4 int year; 5 6 printf("Enter a year: "); 7 scanf("%d", &year); 8 9 if ((year % 4 == 0 && year % 100 != 0) (year % 400 == 0)) 10 printf("%d is a leap year.\n", year); 11 else 12 printf("%d is not a leap year.\n", year); 13 14 return 0; 15 } 16</pre>	<pre>Enter a year: 2025 2025 is not a leap year. === Code Execution Successful ===</pre>

RESULT

The leap year program is successfully executed and the output is verified.

4. Write a c program to find prime number

Aim: To find prime number

main.c	Output
<pre>1 #include <stdio.h> 2 3 int main() { 4 int num, i, isPrime = 1; 5 6 printf("Enter a number: "); 7 scanf("%d", &num); 8 9 if (num <= 1) 10 isPrime = 0; 11 else { 12 for (i = 2; i <= num / 2; i++) { 13 if (num % i == 0) { 14 isPrime = 0; 15 break; 16 } 17 } 18 } 19 20 if (isPrime) 21 printf("%d is a prime number.\n", num); 22 else 23 printf("%d is not a prime number.\n", num); 24 25 return 0; 26 } 27</pre>	<pre>Enter a number: 2 2 is a prime number. === Code Execution Successful ===</pre>

RESULT

The prime number program is successfully executed and the output is verified.

5. Write a c program to find fibonacci series

Aim: To find Fibonacci series

main.c	Output
<pre>1 #include <stdio.h> 2 3 int main() { 4 int n, i; 5 int a = 0, b = 1, next; 6 7 printf("Enter the number of terms: "); 8 scanf("%d", &n); 9 10 for (i = 1; i <= n; i++) { 11 printf("%d ", a); 12 next = a + b; 13 a = b; 14 b = next; 15 } 16 17 return 0; 18 } 19</pre>	<pre>Enter the number of terms: 5 0 1 1 2 3 === Code Execution Successful ===</pre>

RESULT

The program Fibonacci series is successfully executed and the output is verified.

6. Write a c program to find max numbers in given n numbers

Aim: To find max numbers in given n numbers

main.c	Output
<pre>1 #include <stdio.h> 2 3 int main() { 4 int n, i, num, max; 5 6 printf("Enter how many numbers: "); 7 scanf("%d", &n); 8 9 printf("Enter number 1: "); 10 scanf("%d", &num); 11 max = num; 12 13 for (i = 2; i <= n; i++) { 14 printf("Enter number %d: ", i); 15 scanf("%d", &num); 16 if (num > max) 17 max = num; 18 } 19 20 printf("Maximum number is %d\n", max); 21 22 return 0; 23 } 24</pre>	<pre>Enter how many numbers: 4 Enter number 1: 2 Enter number 2: 45 Enter number 3: 56 Enter number 4: 12 Maximum number is 56 === Code Execution Successful ===</pre>

RESULT

The program max numbers is successfully executed and the output is verified.

7. Write a c program to find the sum of array elements

Aim: To find the sum of array elements

main.c	Output
<pre>1 #include <stdio.h> 2 3 int main() { 4 int n, i, sum = 0; 5 int arr[100]; 6 7 printf("Enter number of elements: "); 8 scanf("%d", &n); 9 10 for (i = 0; i < n; i++) { 11 printf("Enter element %d: ", i + 1); 12 scanf("%d", &arr[i]); 13 sum += arr[i]; 14 } 15 16 printf("Sum of array elements = %d\n", sum); 17 18 return 0; 19 } 20</pre>	<pre>Enter number of elements: 4 Enter element 1: 4 Enter element 2: 5 Enter element 3: 3 Enter element 4: 2 Sum of array elements = 14 === Code Execution Successful ===</pre>

RESULT

The program sum of array elements is successfully executed and the output is verified.

8. Write a c program to find a number is odd or even

Aim: To find a number is odd or even

main.c	Output
<pre>1 #include <stdio.h> 2 3 int main() { 4 int num; 5 6 printf("Enter a number: "); 7 scanf("%d", &num); 8 9 if (num % 2 == 0) 10 printf("%d is even.\n", num); 11 else 12 printf("%d is odd.\n", num); 13 14 return 0; 15 } 16</pre>	<pre>Enter a number: 7 7 is odd. === Code Execution Successful ===</pre>

RESULT

The program odd or even is successfully executed and the output is verified.

9. Write a c program to perform arithmetic operations

Aim: To perform arithmetic operations

main.c	Output
<pre>1 #include <stdio.h> 2 3 int main() { 4 float a, b; 5 6 printf("Enter two numbers: "); 7 scanf("%f %f", &a, &b); 8 9 printf("Addition = %.2f\n", a + b); 10 printf("Subtraction = %.2f\n", a - b); 11 printf("Multiplication = %.2f\n", a * b); 12 13 if (b != 0) 14 printf("Division = %.2f\n", a / b); 15 else 16 printf("Division by zero is not allowed.\n"); 17 18 return 0; 19 } 20</pre>	<pre>Enter two numbers: 7 6 Addition = 13.00 Subtraction = 1.00 Multiplication = 42.00 Division = 1.17 === Code Execution Successful ===</pre>

RESULT

The program arithmetic operations is successfully executed and the output is verified.

10. Write a c program for swapping the numbers

Aim: To write a program for swapping the numbers

main.c

Share

Run

```
1 #include <stdio.h>
2
3 int main() {
4     int a, b;
5
6     printf("Enter two numbers: ");
7     scanf("%d %d", &a, &b);
8
9     a = a + b;
10    b = a - b;
11    a = a - b;
12
13    printf("After swapping: a = %d, b = %d\n", a, b);
14
15    return 0;
16 }
17
```

Output

Clear

Enter two numbers: 4 5
After swapping: a = 5, b = 4

=== Code Execution Successful ===

RESULT

The program swapping is successfully executed and the output is verified.