



## C++ Exercises



1. Write a program that uses a for loop to print the numbers 1 to 10.
2. Write a program that uses a for loop to print the even numbers from 2 to 20.
3. Write a program that uses a for loop to print the numbers from 10 down to 1.
4. Write a program that uses a for loop to print the odd numbers from 1 to 15.
5. Write a program that uses a for loop to calculate the sum of the numbers 1 to 100.
6. Write a program that uses a for loop to calculate the product of the numbers 1 to 10.
7. Write a program that uses a for loop to calculate the factorial of a number entered by the user.
8. Write a program that uses a for loop to find the largest number in an array of integers.
9. Write a program that uses a for loop to find the smallest number in an array of integers.
10. Write a program that uses a for loop to print the Fibonacci sequence up to a specified number.



## C++ Exercises and Solution



1. Write a program that uses a for loop to print the numbers 1 to 10.

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

int main() {
    for(int i=1; i<=10; i++) {
        cout << i << " ";
    }
    return 0;
}
```

2. Write a program that uses a for loop to print the even numbers from 2 to 20.

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

int main() {
    for(int i=2; i<=20; i+=2) {
        cout << i << " ";
    }
    return 0;
}
```

3. Write a program that uses a for loop to print the numbers from 10 down to 1.

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

int main() {
    int sum = 0;
```

```
for(int i=1; i<=100; i++) {  
    sum += i;  
}  
cout << "The sum is: " << sum << endl;  
return 0;  
}
```

4. Write a program that uses a for loop to print the odd numbers from 1 to 15.

```
#include <iostream>  
using namespace std;  
  
int main() {  
    int num, factorial = 1;  
    cout << "Enter a number: ";  
    cin >> num;  
    for(int i=1; i<=num; i++) {  
        factorial *= i;  
    }  
    cout << "The factorial of " << num << " is: " << factorial << endl;  
    return 0;  
}
```

5. Write a program that uses a for loop to calculate the sum of the numbers 1 to 100.

```
#include <iostream>  
using namespace std;  
  
int main() {  
    int num;  
    cout << "Enter a number: ";  
    cin >> num;  
    for(int i=1; i<=10; i++) {  
        cout << num << " x " << i << " = " << num*i << endl;  
    }  
}
```

```
return 0;
}
```

6. Write a program that uses a for loop to calculate the product of the numbers 1 to 10.

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

int main() {
    int product = 1;
    for (int i = 1; i <= 10; i++) {
        product *= i;
    }
    cout << "Product of numbers 1 to 10 is: " << product << endl;
    return 0;
}
```

7. Write a program that uses a for loop to calculate the factorial of a number entered by the user.

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

int main() {
    int num, factorial = 1;
    cout << "Enter a number: ";
    cin >> num;
    for (int i = 1; i <= num; i++) {
        factorial *= i;
    }
    cout << "Factorial of " << num << " is: " << factorial << endl;
    return 0;
}
```

8. Write a program that uses a for loop to find the largest number in an array of integers.

```
#include <iostream>
```

```
using namespace std;
```

```
int main() {  
    int arr[] = {10, 20, 5, 25, 30};  
    int max_num = arr[0];  
    for (int i = 1; i < 5; i++) {  
        if (arr[i] > max_num) {  
            max_num = arr[i];  
        }  
    }  
    cout << "The largest number in the array is: " << max_num << endl;  
    return 0;  
}
```

9. Write a program that uses a for loop to find the smallest number in an array of integers.

```
#include <iostream>
```

```
using namespace std;
```

```
int main() {  
    int arr[] = {10, 20, 5, 25, 30};  
    int min_num = arr[0];  
    for (int i = 1; i < 5; i++) {  
        if (arr[i] < min_num) {  
            min_num = arr[i];  
        }  
    }  
    cout << "The smallest number in the array is: " << min_num << endl;  
    return 0;  
}
```

10. Write a program that uses a for loop to print the Fibonacci sequence up to a specified number.

```
#include <iostream>
```

```
using namespace std;
```

```
int main() {  
    int num, a = 0, b = 1, c = 0;  
    cout << "Enter a number: ";  
    cin >> num;  
    cout << "Fibonacci sequence up to " << num << " is: ";  
    for (int i = 1; c <= num; i++) {  
        if (i == 1) {  
            cout << a << " ";  
        }  
        else if (i == 2) {  
            cout << b << " ";  
        }  
        else {  
            c = a + b;  
            a = b;  
            b = c;  
            if (c <= num) {  
                cout << c << " ";  
            }  
        }  
    }  
    cout << endl;  
    return 0;  
}
```