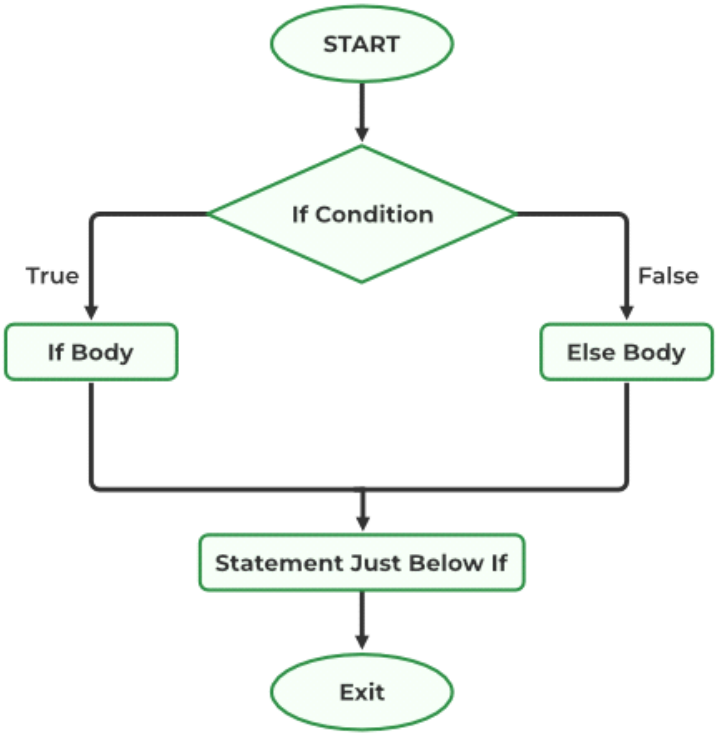
Conditionals

13 August 2024 20:48

Conditionals check for specific conditions to execute code inside them if they match they work else they won't.

1. If - else if - else Conditionals



Syntax :

```
if (condition1) {
  // block of code to be executed if condition1 is true
} else if (condition2) {
  // block of code to be executed if the condition1 is false and condition2 is true
} else {
  // block of code to be executed if the condition1 is false and condition2 is false
}
```

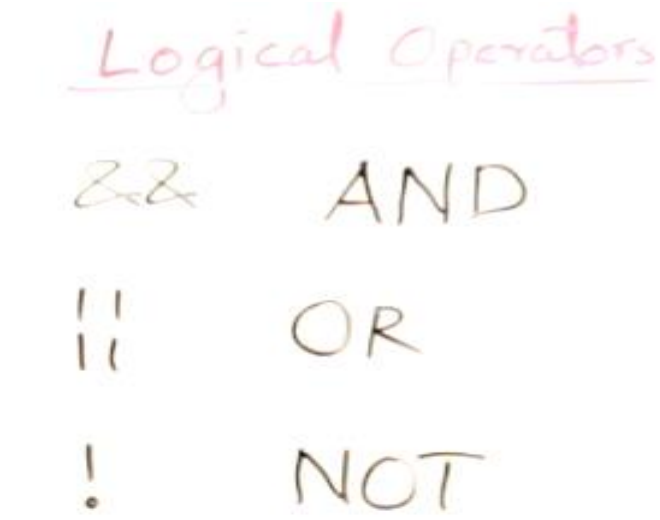
Questions

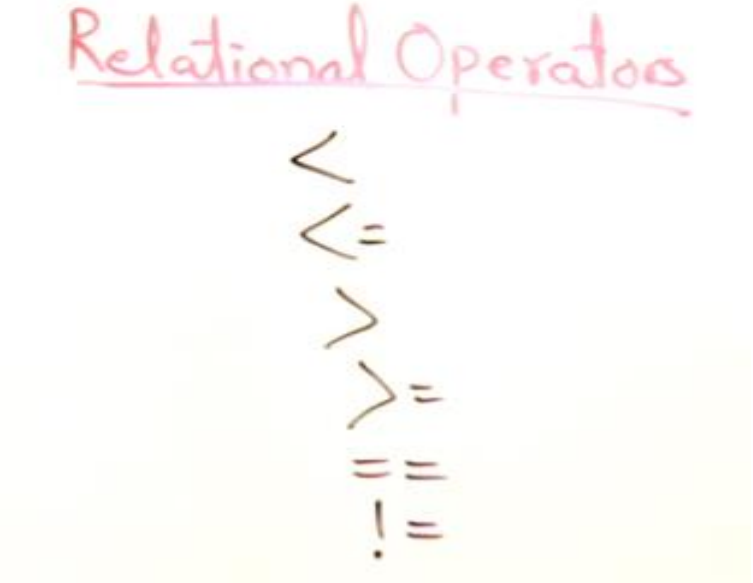
1. Write a program to find if number exists in array or not.

Ans.

```
#include<iostream>
using namespace std;
bool find(int arr[], int n, int target) {
    for(int i = 0; i < n; i++) {
        if (arr[i] == target) {
            return true;  // Return true if target is found
        }
```

```
    }
    return false;  // Return false if target is not found after
checking all elements
}
int main() {
    int arr[5] = {1,2,3,4,5};
    int x;
    cin>>x;
    if (find(arr,5,x)){
        cout<<"True"<<endl;
    } else {
        cout<<"False"<<endl;
    }
    return 0;
}
```





Compound conditionals are a way to test two conditions in just one statement.

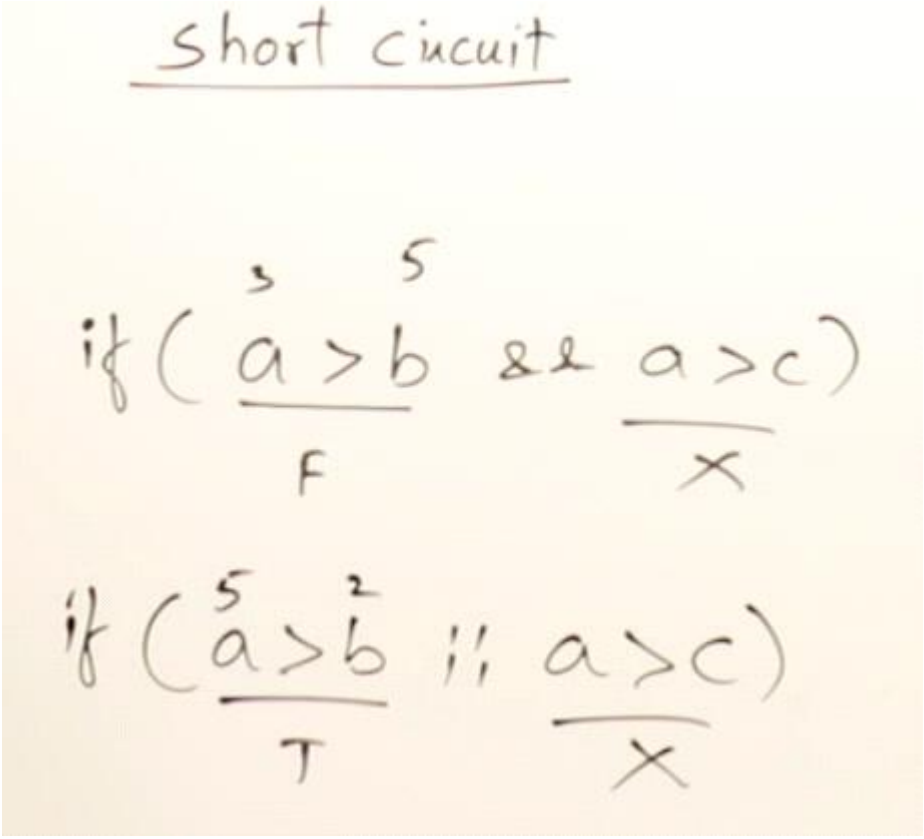
```
#include <iostream>
int main() {
    int age = 25;
    bool hasID = true;
```

```
    bool isMember = false;
    // Compound conditional statement using AND (&&) and OR (||)
    if ((age >= 18 && hasID) || isMember) {
        std::cout << "Access granted." << std::endl;
    } else {
        std::cout << "Access denied." << std::endl;
    }
    return 0;
}
```

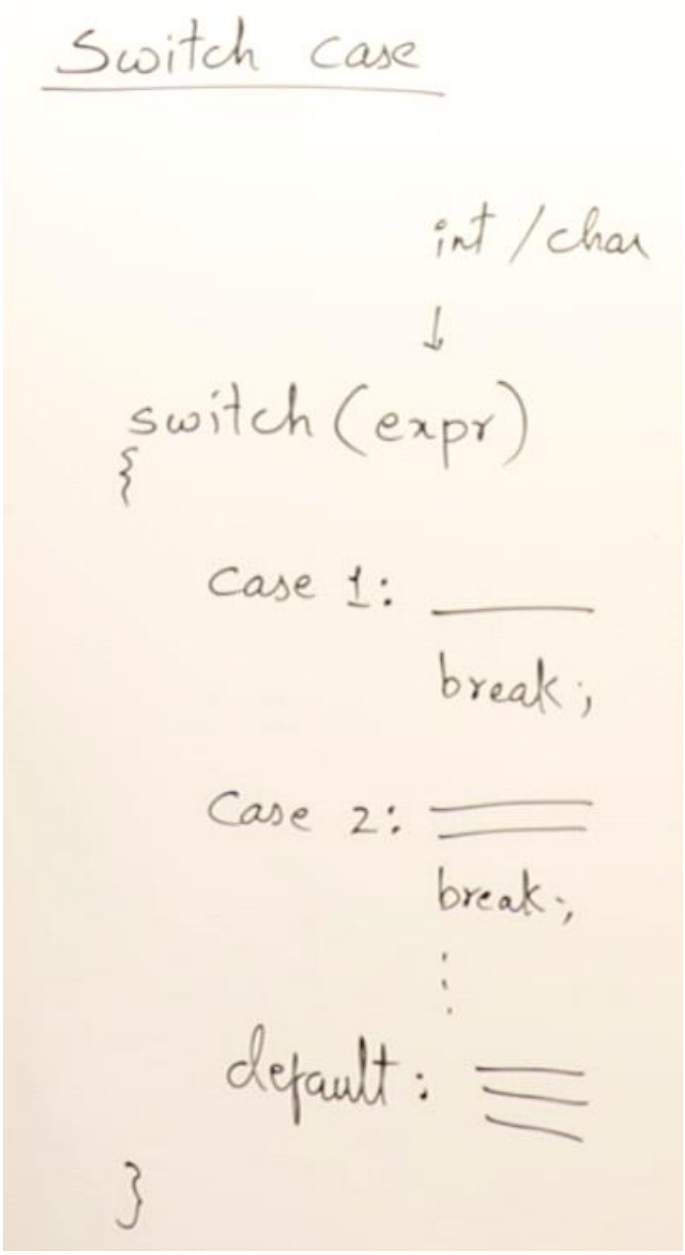
Note : if-else if-else conditions can also be nested.

Short Circuit

in And, if first condition is false it will not check second one and in OR, if first is correct then it will not check second one.



Switch-case Conditionals



Q1. Write a switch case taking input between 1-7 and print the day of week.

Ans.

```
#include <iostream>
using namespace std;
int main() {
    int day;
    cout << "Enter a number (1-7): ";
    cin >> day;
    switch(day) {
        case 1:
            cout << "Monday" << endl;
            break;
        case 2:
            cout << "Tuesday" << endl;
            break;
        case 3:
            cout << "Wednesday" << endl;
            break;
        case 4:
            cout << "Thursday" << endl;
```

```
            break;
        case 5:
            cout << "Friday" << endl;
            break;
        case 6:
            cout << "Saturday" << endl;
            break;
        case 7:
            cout << "Sunday" << endl;
            break;
        default:
            cout << "Invalid input! Please enter a number between 1
and 7." << endl;
    }
    return 0;
}
```

Ques. Write a program to find if a leap year or not.

Ans.

```
#include<iostream>
using namespace std;
int main() {
    int n;
    cout<<"Enter a year : ";
    cin>>n;
    if (n % 4 == 0){
        if (n % 100 == 0){
            if (n % 400 == 0){
                cout<<"Leap Year"<<endl;
            } else {
                cout<<"Not a Leap Year"<<endl;
            }
        } else {
            cout<<"Leap Year"<<endl;
        }
    } else {
        cout<<"Not a Leap Year"<<endl;
    }
    return 0;
}
```