Expt 5 - C++ decision making statements

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Aim: To study and implement C++ decision making statements

Theory:

Sr.No	Statement & Description
1	if statement An 'if' statement consists of a boolean expression followed by one or more statements.
2	if...else statement An 'if' statement can be followed by an optional 'else' statement, which executes when the boolean expression is false.
3	switch statement A 'switch' statement allows a variable to be tested for equality against a list of values.
4	nested if statements You can use one 'if' or 'else if' statement inside another 'if' or 'else if' statement(s).
5	nested switch statements You can use one 'switch' statement inside another 'switch' statement(s).

1:if ,else, else if statement

IN THE FOLLOWING I USED IF ELSE STATEMENTS TO DTERMINE WHICH OF THE NUMBERS AMONG A AND B ARE LESER OR GREATER OR EQUAL TO A

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

int main() {
    int a, b;

    cout << "Enter value for a: ";
    cin >> a;

    cout << "Enter value for b: ";
    cin >> b;

    if (a > b) {
        cout << "a is greater than b" << endl;
    } else if (a < b) {
        cout << "a is less than b" << endl;
    } else {
        cout << "a is equal to b" << endl;
    }

    return 0;
}
//PS C:\Users\asus\Desktop\cds> cd "c:\Users\asus\Desktop\cds\" ; if ($?) { g++ if.cpp -o if } ; if ($?) { .\if }
//output:
//Enter value for a: 5
//Enter value for b: 6
// a is less than b
```

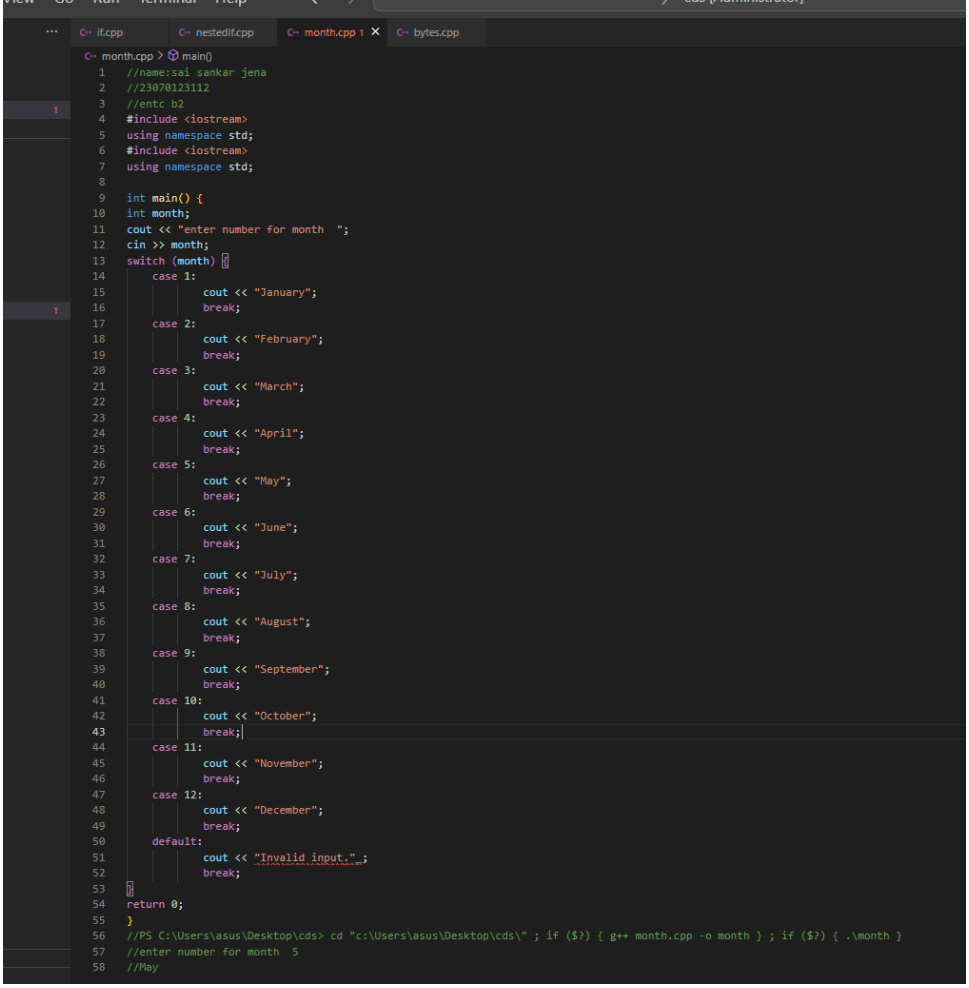
2: nested if statements

nestedif.cpp > ...

```cpp
//name:sai sankar jena
//23070123112
//entc b2
#include <iostream>
using namespace std;

int main() {
    int m2,cds;

    cout << "Enter the score for m2: ";
    cin >> m2;
    cout << "Enter the score for cds: ";
    cin >> cds;
    if (m2 >= 45) {
       if (cds >= 45) {
        cout << "Pass in both " << endl;
        }

        else {
            cout << "Pass in m2 but fail in cds." << endl;
        }
    } else {

        if (cds >= 45) {
            cout << "Fail in M2 but pass in cds" << endl;
        } else {
            cout << "Fail in all" << endl;
        }
    }

    return 0;
}
//PS C:\Users\asus\Desktop\cds> cd "c:\Users\asus\Desktop\cds\" ; if ($?) { g++ nestedif.cpp -o nestedif } ; if ($?) { .\nestedif }
//Enter the score for m2: 25
//Enter the score for cds: 45
//Fail in M2 but pass in cds
```

3.break

BREAK STATEMENTS USING MONTH CODES AND USING SWITCH CASE TO CHOOSE NUMBER FROM 1 TO 12



4.default

USING DEFAULT TO PROVE A CASE FOR POSITIVE AN D BNEGATIVE STATEMENTS

```cpp
//name:sai sankar jena
//23070123112
//entc b2
#include <iostream>
using namespace std;


int main() {
    int number;

    cout << "Enter a number: ";
    cin >> number;
switch (number)
{
    case 0:
        cout << "The number is zero." << endl;
        break;
     default:
        if (number > 0) {
            cout << "The number is positive." << endl;
        } else {
            cout << "The number is negative." << endl;
        }
        break;
 }

 return 0;
}
//PS C:\Users\asus\Desktop\cds> cd "c:\Users\asus\Desktop\cds\" ; if ($?) { g++ default.cpp -o default } ; if ($?) { .\default }
//Enter a number: 5
//The number is positive.
```

5.CALCULATOR

if.cpp | nestedif.cpp | month.cpp 1 | calculator.cpp | bytes.cpp

calculator.cpp > ...

```cpp
//name:sai sankar jena
//23070123112
//entc b2
#include <iostream>
using namespace std;

int main() {
    char op;
    double num1, num2;


    cout << "Enter operator (+, -, *, /): ";
    cin >> op;
    cout << "Enter two numbers: ";
    cin >> num1 >> num2;
    switch (op) {
        case '+':
            cout << "Result: " << num1 + num2;
            break;
        case '-':
            cout << "Result: " << num1 - num2;
            break;
        case '*':
            cout << "Result: " << num1 * num2;
            break;
        case '/':
            if (num2 != 0) {
                cout << "Result: " << num1 / num2;
            } else {
                cout << "Error.";
            }
            break;
        default:
            cout << "Error: Invalid.";
            break;
    }

    return 0;
}
//PS C:\Users\asus\Desktop\cds> cd "c:\Users\asus\Desktop\cds\" ; if ($?) { g++ calculator.cpp -o calculator } ; if ($?) { .\
//Enter operator (+, -, *, /): *
//Enter two numbers: 5
//6
//Result: 30
```

PROBLEMS 1 | OUTPUT | DEBUG CONSOLE | TERMINAL | PORTS

```
    ^~~~
calculator.cpp:12:5: error: 'cin' was not declared in this scope
    cin >> op;
    ^~~
PS C:\Users\asus\Desktop\cds> cd "c:\Users\asus\Desktop\cds\" ; if ($?) { g++ calculator.cpp -o calculator } ; if ($?) { .\calculator }
Enter operator (+, -, *, /): *
Enter two numbers: 5
6
Result: 30
PS C:\Users\asus\Desktop\cds>
```

CODES:


if.exe


default.exe


nestedif.exe


month.exe


calculator.exe


if.cpp


nestedif.cpp


month.cpp


default.cpp


calculator.cpp