

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	<u>if statement</u> An 'if' statement consists of a boolean expression followed by one or more statements.
2	<u>if...else statement</u> An 'if' statement can be followed by an optional 'else' statement, which executes when the boolean expression is false.
3	<u>switch statement</u> A 'switch' statement allows a variable to be tested for equality against a list of values.
4	<u>nested if statements</u> You can use one 'if' or 'else if' statement inside another 'if' or 'else if' statement(s).
5	<u>nested switch statements</u> 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 DETERMINE WHICH OF THE NUMBERS AMONG A AND B ARE LESSER OR GREATER OR EQUAL TO A

```

1 #include<iostream>
2 using namespace std;
3
4
5 int main() {
6     int a, b;
7
8     cout << "Enter value for a: ";
9     cin >> a;
10
11     cout << "Enter value for b: ";
12     cin >> b;
13
14     if (a > b) {
15         cout << "a is greater than b" << endl;
16     } else if (a < b) {
17         cout << "a is less than b" << endl;
18     } else {
19         cout << "a is equal to b" << endl;
20     }
21
22     return 0;
23 }
24
25 //PS C:\Users\asus\Desktop\cds> cd "C:\Users\asus\Desktop\cds\" ; if ($?) { g++ if.cpp -o if } ; if ($?) { .\if }
26 //output:
27 //Enter value for a: 5
28 //Enter value for b: 6
29 // a is less than b

```

2: nested if statements

```

C++ nestedif.cpp >...
1 //name:sai sankar jena
2 //23070123112
3 //entc b2
4 #include <iostream>
5 using namespace std;
6
7 int main() {
8     int m2,cds;
9
10    cout << "Enter the score for m2: ";
11    cin >> m2;
12    cout << "Enter the score for cds: ";
13    cin >> cds;
14    if (m2 >= 45) {
15        if (cds >= 45) {
16            cout << "Pass in both " << endl;
17        }
18
19        else {
20            cout << "Pass in m2 but fail in cds," << endl;
21        }
22    } else {
23
24        if (cds >= 45) {
25            cout << "Fail in M2 but pass in cds" << endl;
26        } else {
27            cout << "Fail in all" << endl;
28        }
29    }
30
31    return 0;
32 }
33
34 //PS C:\Users\asus\Desktop\cds> cd "C:\Users\asus\Desktop\cds\" ; if ($?) { g++ nestedif.cpp -o nestedif } ; if ($?) { .\nestedif }
35 //Enter the score for m2: 25
36 //Enter the score for cds: 45
37 //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

```
view go run terminal help
C++ if.cpp C++ nestedif.cpp C++ month.cpp X C++ bytes.cpp
C++ month.cpp > main()
1 //name:sai sankar jena
2 //23070123112
3 //entc b2
4 #include <iostream>
5 using namespace std;
6 #include <iostream>
7 using namespace std;
8
9 int main() {
10 int month;
11 cout << "enter number for month ";
12 cin >> month;
13 switch (month) {
14 case 1:
15     cout << "January";
16     break;
17 case 2:
18     cout << "February";
19     break;
20 case 3:
21     cout << "March";
22     break;
23 case 4:
24     cout << "April";
25     break;
26 case 5:
27     cout << "May";
28     break;
29 case 6:
30     cout << "June";
31     break;
32 case 7:
33     cout << "July";
34     break;
35 case 8:
36     cout << "August";
37     break;
38 case 9:
39     cout << "September";
40     break;
41 case 10:
42     cout << "October";
43     break;
44 case 11:
45     cout << "November";
46     break;
47 case 12:
48     cout << "December";
49     break;
50 default:
51     cout << "Invalid input.";
52     break;
53 }
54 return 0;
55 }
56 //PS C:\Users\asus\Desktop\cds> cd "c:\Users\asus\Desktop\cds\" ; if ($?) { g++ month.cpp -o month } ; if ($?) { .\month }
57 //enter number for month 5
58 //May
```

4.default

USING DEFAULT TO PROVE A CASE FOR POSITIVE AND NEGATIVE STATEMENTS

```
1 //name:sai sankar jena
2 //23070123112
3 //entc b2
4 #include <iostream>
5 using namespace std;
6
7
8 int main() {
9 int number;
10
11 cout << "Enter a number: ";
12 cin >> number;
13 switch (number)
14 {
15 case 0:
16     cout << "The number is zero." << endl;
17     break;
18 default:
19     if (number > 0) {
20         cout << "The number is positive." << endl;
21     } else {
22         cout << "The number is negative." << endl;
23     }
24     break;
25 }
26
27 return 0;
28 }
29 //PS C:\Users\asus\Desktop\cds> cd "c:\Users\asus\Desktop\cds\" ; if ($?) { g++ default.cpp -o default } ; if ($?) { .\default }
30 //Enter a number: 5
31 //The number is positive.
```

5.CALCULATOR

```
C++ if.cpp C++ nestedif.cpp C++ month.cpp 1 C++ calculator.cpp X C++ bytes.cpp
C++ calculator.cpp > ...
1 //name:sai sankar jena
2 //23070123112
3 //entc b2
4 #include <iostream>
5 using namespace std;
6
7 int main() {
8     char op;
9     double num1, num2;
10
11
12     cout << "Enter operator (+, -, *, /): ";
13     cin >> op;
14     cout << "Enter two numbers: ";
15     cin >> num1 >> num2;
16     switch (op) {
17         case '+':
18             cout << "Result: " << num1 + num2;
19             break;
20         case '-':
21             cout << "Result: " << num1 - num2;
22             break;
23         case '*':
24             cout << "Result: " << num1 * num2;
25             break;
26         case '/':
27             if (num2 != 0) {
28                 cout << "Result: " << num1 / num2;
29             } else {
30                 cout << "Error.";
31             }
32             break;
33         default:
34             cout << "Error: Invalid.";
35             break;
36     }
37
38     return 0;
39 }
40 //PS C:\Users\asus\Desktop\cds> cd "c:\Users\asus\Desktop\cds\" ; if ($?) { g++ calculator.cpp -o calculator } ; if ($?) { .\
41 //Enter operator (+, -, *, /): *
42 //Enter two numbers: 5
43 //6
44 //Result: 30
45
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