



## LAB # 8

### Conditional Statements (Switch Cases)

#### Objective:

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- To learn and use the switch statement in conditional statements

#### Theory:

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##### The switch Statement

We have already seen how if statements can affect the branching of a program during execution. Another way to do this is using the switch statement. It is also a conditional statement. The switch statement uses the value of an integer expression to determine which group of statements to branch through. The sample program below illustrates the syntax.

##### Sample Program:

```
#include <iostream>
using namespace std;
int main()
{ char grade;
  cout << "What grade did you earn in Programming I?" << endl;
  cin >> grade;
  switch( grade ) // This is where the switch statement begins
  { case 'A':cout << "an A - excellent work!" << endl;
    break;
    case 'B':cout << "you got a B - good job" << endl;
    break;
    case 'C':cout << "earning a C is satisfactory" << endl;
    break;
    case 'D':cout << "while D is passing, there is a problem" << endl;
    break;
    case 'F':cout << "you failed - better luck next time" << endl;
    break;
    default:cout << "You did not enter an A, B, C, D, or F" << endl; }
  return 0; }
```

Note the use of the curly braces that enclose the cases and the use of break; after each case. Also, consider the variable grade. It is defined as a character data type and the case statements have character arguments such as 'B'. This seems to contradict what we said above, namely that the switch statement uses the value of integer expressions to determine branching. However, this apparent contradiction is resolved by the compiler automatically converting character data into the integer data type. Finally, notice the role of the default statement. The default branch is followed if none of the case expressions match the given switch expression.

#### Character & string comparisons:



So far, relational operators have been used to compare numeric constants and variables.

Characters and string objects can also be compared with the same operators. For example:

```
char letter = 'F'; string word = "passed";
switch(letter)
{ case 'A': cout << "Your grade is A." << endl;
break;
case 'B': cout << "Your grade is B." << endl;
break;
case 'C': cout << "Your grade is C." << endl;
break;
case 'D': cout << "Your grade is D." << endl;
break;
case 'F': word = "failed";
break;
default: cout << "You did not enter an A,B,C,D or F" << endl; }
if (word == "passed")
cout << "You passed" << endl;
else
cout << "You failed" << endl;
```

### Lab Task:

Do task 8.1, 8.2 and 8.3 given in file attached on LMS and attach your source code and output window with this file. And write your observation with lab task.

### Post Lab:

The University of Guinness charges \$3000 per semester for in-state tuition and \$4500 per semester for out-of-state tuition. In addition, room and board is \$2500 per semester for in-state students and \$3500 per semester for out-of-state students. Write a program that prompts the user for their residential status (i.e., in-state or out-of-state) and whether they require room and board (Y or N). The program should then compute and output their bill for that semester.

Use the sample output below:

Sample Run 1:

**Please input "I" if you are in-state or "O" if you are out-of-state:**

I

**Please input "Y" if you require room and board and "N" if you do not:**

N

**Your total bill for this semester is \$3000**

Sample Run 2:

**Please input "I" if you are in-state or "O" if you are out-of-state:**

O

**Please input "Y" if you require room and board and "N" if you do not:**

Y

**Your total bill for this semester is \$8000**

### Learning Outcomes:

Upon successful completion of the lab, students will be able to:

LO1: **To work with conditional statements using switch/case statements.**