CS-114 - Fundamental of Programing

Lab Manual # 06

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Lab Manual # 06
Selection structures (II)

Objective:

This lab is about the selection structure and understanding the types of selection structure.

Description:

Selection: decisions, branching; when there are 2 or more alternatives. There are three types of selection structure:

- if
- if...else
- switch

Nested if else:

In C++ we can use if statement in another else block or we can also include if block in another if block.

Syntax : C++ Nested If

```
if( boolean_expression 1)
{
   // Executes when the boolean expression 1 is true
   if(boolean_expression 2)
   {
      // Executes when the boolean expression 2 is true
   }
}
```

Example : Nested If

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

int main()
{
    int age = 87;

    if(age>60){

        if(age>100){
            cout << "why are you stil alive?"
        }

    }else{
        cout << "you are young, get a job" << endl;
    }

    return 0;
```

We can nest else if…else in the similar way as you have nested if statement.

Example : Nested If-else

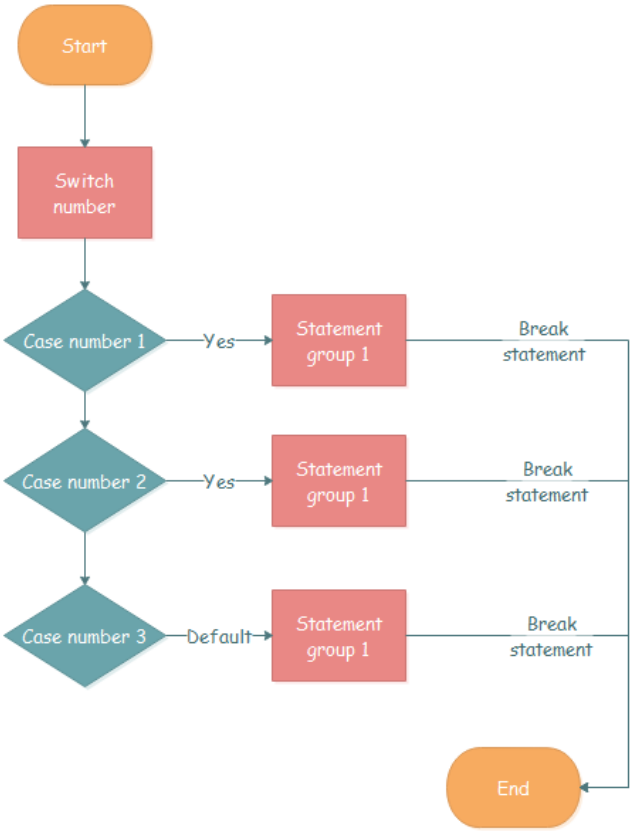
```
#include <iostream>
using namespace std;


int main ()
{
   int marks = 55;
   if( marks >= 80) {
      cout << "U are 1st class !!";
   }
   else {
      if( marks >= 60) {
          cout << "U are 2nd class !!";
      }
      else {
```

```
        if( marks >= 40) {
          cout << "U are 3rd class !!";
        }
        else {
          cout << "U are fail !!";
        }
      }
   }
   return 0;
}
```

Switch Statement:

Switch case statements are a substitute for long if statements. A switch statement allows a variable to be tested for equality against a list of values. Each value is called a case, and the variable being switched on is checked for each switch case.

```
switch (n)
{
    case 1: // code to be executed if n = 1;
        break;
    case 2: // code to be executed if n = 2;
        break;
    default: // code to be executed if n doesn't match any cases
}
```


Start
Switch number
Case number 1
Yes
Statement group 1
Break statement
Case number 2
Yes
Statement group 1
Break statement
Case number 3
Default
Statement group 1
Break statement
End

Lab Task:

1. Write C++ Program to make a Simple Calculator to Add, Subtract, Multiply or Divide Using switch...case.
2. Write C++ program print total number of days in a month using switch case.
3. Write C++ program to take two integer value from user check if both values are equal or not, if both are not equal then print the greater value use nested if else.
4. Write a C program to read the value of an integer m and display the value of n is 1 when m is larger than 0, 0 when m is 0 and -1 when m is less than 0 use nested if-else.
5. Write a C program to check whether a number is positive, negative or zero using switch case.

Home Task:

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1. Write a C program print total number of days in a month using switch case.
2. Write a C program to check whether an alphabet is vowel or consonant using switch case.
3. Check whether the number entered by the user is positive or not. If it is positive then calculate how many digits the number have.
4. Write a program that asks the user to input a two digit number (i.e. from 10-99), then prints the English word for the number. Make use of switch statement.
   Example:
   Enter a two-digit number: 74
   You entered the number Seventy four.

Useful links for practice

https://www.w3schools.com/
https://www.codecademy.com/learn/learn-c-plus-plus