Lab # 4

Relational and logical operator

Switch Statement

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 case.

Switch case statements are a substitute for long if statements that compare a variable to several integral values

* The switch statement is a multiway branch statement. It provides an easy way to dispatch execution to different parts of code based on the value of the expression.
* Switch is a control statement that allows a value to change control of execution.

Syntax:

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

}

**Important Points about Switch Case Statements:**

1. The expression provided in the switch should result in a**constant value** otherwise it would not be valid.  
   **Valid expressions for switch:**
2. // Constant expressions allowed
3. switch(1+2+23)

switch(1\*2+3%4)

**Invalid switch expressions for switch:**

// Variable expression not allowed

switch(ab+cd)

switch(a+b+c)

1. Duplicate case values are not allowed.
2. The default statement is optional.Even if the switch case statement do not have a default statement,  
   it would run without any problem.
3. The break statement is used inside the switch to terminate a statement sequence. When a break statement is reached, the switch terminates, and the flow of control jumps to the next line following the switch statement.
4. The break statement is optional. If omitted, execution will continue on into the next case. The flow of control will fall through to subsequent cases until a break is reached.
5. Nesting of switch statements are allowed, which means you can have switch statements inside another switch. However nested switch statements should be avoided as it makes program more complex and less readable.

Flowchart :

switch-case-in-java

Example:

|  |
| --- |
| #include <stdio.h>  int main()  {     int x = 2;     switch (x)     {         case 1: printf("Choice is 1");                 break;         case 2: printf("Choice is 2");                  break;         case 3: printf("Choice is 3");                 break;         default: printf("Choice other than 1, 2 and 3");                  break;     }     return 0;  } |

Output :

Choice is 2

Tasks :

1. Write a program to check whether a number is positive, negative or zero?
2. Write a program to check whether a character is uppercase or lower case?
3. [Write a program to input marks of five subjects Physics, Chemistry, Biology, Mathematics and Computer. Calculate percentage and grade according to following:](https://codeforwin.org/2015/05/c-program-to-enter-student-marks-and-calculate-percentage-and-grade.html)  
   Percentage >= 90% : Grade A  
   Percentage >= 80% : Grade B  
   Percentage >= 70% : Grade C  
   Percentage >= 60% : Grade D  
   Percentage >= 40% : Grade E  
   Percentage < 40% : Grade F
4. Write a program to check whether a number is even or odd ?