

Fundamental of Computer Programming

(By Kusal Bista)

Objective: To familiarize with the selective structure statements like if-else and switch statements.

Theory:

Selective Statement:

Selection means executing different section of code depending on a condition or the value of a variable. This is what allows a program to take different courses of action depending on different circumstances. Selective structure are used when we have a number of situation where we may need to change the order of execution of statements based on certain condition .the selective statement must make a decision to take the right path before changing the order of execution.

if statement:

if statement is a powerful decision making statement and it is used to control the flow of execution of statements. It is a two way statement and is used in conjunction with the test expression. It takes the following form:

if(test expression)

The if statement may be implemented in different forms depending on the complexity of conditions to be tested which are

- Simple if statement
- if...else statement
- Nested if...else statement

switch statement:

We have seen that when one of the many alternatives is to be selected we can design a program using if statement to control the selection. However the complexity of such program increseas dramatically when the no. of alternatives inceresses. C has a built in multiway decision statement known as switch. It successively tests the value of an expression against a list of case values. When a match is found the statements associated with that case is executed. The general form is shown below:

switch(expression)

```
{ case constant1:
    Block of case constant1;
    break;
case constant2:
    Block of case constant2;
    break;
case constant3:
    Block of case constant3;
    break;
.....
.....
default:
    default block;
}
next statement(s);
```

Exercise: [5 * 20 = 100]

1. Write a program to read the average temperature of a day in Fahrenheit to print.
 “Nice day” if the temperature is greater than 60 but less than 80.
 “Cold day” if the temperature is 60 or lower.
 “Hot day” if the temperature is 80 higher.
 2. Write a program to read the length and breadth of a room and print area and print.
 “Auditorium” if area >2500
 “Hall” if $500 \leq \text{area} \leq 2500$
 “Big room” if $150 < \text{area} < 500$
 “Small room” if area <= 150
 3. Write a program to read three sides of triangle and print area for valid data and to print “Invalid data” if either one side of the triangle is greater or equals to the sum of other two sides.
 4. Write a program to read three numbers and display the following menu.
 Menu:
 1. Summation
 2. Sum of squares
 3. Sum of cubes
 4. Product and perform tasks as per the user’s choice. (use switch statements)
 5. An organization is dealing in Two items say A and B and provides the commission on of sale of these items according to the following policies:
 - i) Commission rate for item A is 5% up to a sale of Rs. 2,000. If the sale of item A above 2000 then the commission is 6% on the extra sale.
 - ii) For B, 10% up to the sale of Rs 4,000 if the sale is above 4,000 commission rate is 12% on extra sale:
 Given the sales of both items, write a program to compute net commission.
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