

Topic : The 'else if' Ladder Statement

Syntax:

```
if (Expression)
{
    .....
    ..... Statements;
}
else if (Expression)
{
    .....
    ..... Statements;
}
else if (Expression)
{
    .....
    ..... Statements;
}
else if (Expression)
{
    .....
    ..... Statements;
}
else
{
    .....
    ..... Statements;
}
```

The else if ladder is a control structure which provides the multiple expression or condition checking facility. In this structure, statements are executed top to downward. As soon as a true condition is found, the statements associated with it are executed and the rest of the ladder is bypassed. If non of the conditions is true, the final else statement will be executed. The final else acts as a default condition

/* Q1: Write a C program to check whether the given character is vowel or consonant by using else if ladder. */

```
#include<stdio.h>
#include<conio.h>
void main()
{
    char x;
    clrscr();
    printf("Enter a character:");
    scanf("%c", &x);
    if ( x=='a' || x=='A' )
    {
        printf("Vowel");
    }
    else if ( x=='e' || x=='E' )
    {
        printf("Vowel");
    }
    else if ( x=='i' || x=='I' )
    {
        printf("Vowel");
    }
    else if ( x=='o' || x=='O' )
    {
        printf("Vowel");
    }
    else if ( x=='u' || x=='U' )
    {
        printf("Vowel");
    }
    else
    {
        printf("Consonant");
    }
    getch();
}
```

/* Q2: Write a C program to find out the roots of a quadratic equation by using else if ladder. */

```

#include<stdio.h>
#include<conio.h>
#include<math.h>
void main()
{
    int a,b,c,d;
    float r1,r2,real,imag;
    clrscr();
    printf("Enter the value of a,b,c:");
    scanf("%d%d%d",&a,&b,&c);
    d=b*b-4*a*c;
    if(d==0)
    {
        printf("The roots are real and equal");
        r1=(-b)/(2.0*a);
        r2=r1;
        printf("The roots are : %f and %f",r1,r2);
    }
    else if (d<0)
    {
        printf("The roots are imaginary");
        real=(-b)/(2*a);
        d=(-d);
        imag=sqrt(d)/(2*a);
        printf("Root1= %f+i%f",real,imag);
        printf("Root2=%f-i%f",real,imag);
    }
    else
    {
        printf("The roots are real and unequal");
        r1=(-b+sqrt(d))/(2*a);
        r2=(-b-sqrt(d))/(2*a);
        printf("The roots are : %f and %f",r1,r2);
    }
    getch();
}

```