SWITCH STATEMENT IN C++

S. Rajasekar
School of Physics
Bharathidasan University
Tiruchirapalli - 620 024
email: rajasekar@cnld.bdu.ac.in
srj.bdu@gmail.com

Definition

A switch statment is useful when one out of a set of alternative is to be taken based on the value of an expression or a variable. It is an alternative for if-else.

General Form

```
Block of statements–I (Assigning integer values to the swtich variable)
switch (switch variable name)
{
   case a value of the switch variable :
      {
         Block of statements–II;
         break;
      }
   case another value of the switch variable :
      {
         Block of statements–III;
         break;
      }
   - - - - -
   - - - - -
}
```

Switch Statement

The block of statements–I assigns integer values to the switch case variable for various possible cases i.e. branches. Control is transferred to B.S–II or III etc depending on the value of the switch variable name.

Example

Write a program to find the roots of a quadratic equation using switch statements.

```
// Program to find the roots of quadratic equation ax**2+bx+c=0.
# include ⟨iostream.h⟩
# include ⟨math.h⟩
# include ⟨conio.h⟩
main ()
{
    int discdesign;
    double a, b, c, disc, xr1, xr2, xim;
    cin>>a>>b>>c;
    if (a==0)
    {
        cout << “The given equation is not a quadratic equation"<<endl;
        return 0;
     }
    disc = b*b−4.0*a*c;
    if(disc<0) discsign = −1;
    if(disc>0) discsign = 1;
    if(disc==0) discsign = 0;
```

Example

```
switch (discsign)
{
    case −1 : {
                    xim = sqrt(-disc)/(2.0*a);
                    xr1 = −b/(2.0*a);
                    cout << “The roots are complex conjugate and are"<<endl;
                    cout << “xr1 ="<<xr1<<“+i"<<xim<<endl;
                    cout << “xr2 ="<<xr2<<“−i"<<xim<<endl;
                    break;
                }
    case 1 : {
                    xr1 = (−b+sqrt(disc)/(2.0*a);
                    xr2 = (−b-sqrt(disc)/(2.0*a);
                    cout << “The roots are real, unequal and are"<<endl;
                    cout << “xr1 ="<<xr1<<endl;
                    cout << “xr2 ="<<xr2<<endl;
                    break;
                }
```

Example

```
        case 0 : {
                        xr1 = −b/(2.0*a);
                        xr2 = −b/(2.0*a);
                        cout << “The roots are real, equal and are"<<endl;
                        cout << “xr1 ="<<xr1<<endl;
                        cout << “xr2 ="<<xr2<<endl;
                        break;
                    }
return 1;
 }
```