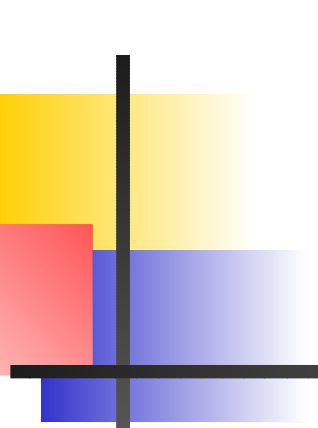




SWITCH STATEMENT IN C++

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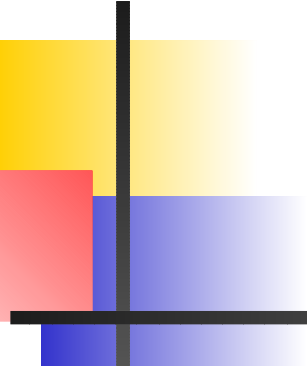
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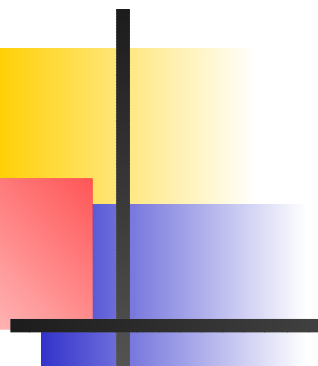
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Definition

A switch statement 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 switch variable)

switch (switch variable name)

{

case a value of the switch variable :

{

Block of statements—II;

break;

}

case another value of the switch variable :

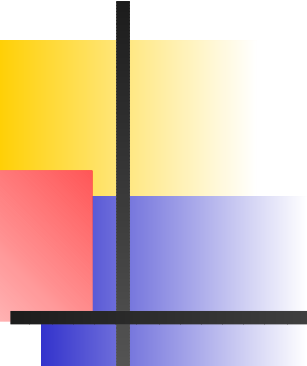
{

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;  
}
```