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# BASIC OPERATORS



# Basic Operators

- Java provides set of operators to manipulate values. Such as,
  1. Arithmetic Operator
  2. Relational Operator
  3. Bitwise Operator
  4. Logical Operator
  5. Assignment Operator
  6. Misc Operator



# Basic Operator – Arithmetic Operators

- It is used in mathematical expressions and algebra.

`a=10, b=20`

Addition:

`a + b = 30`

Subtraction:

`a - b = 20`

Multiplication:

`a * b = 200`

Division:

`a / b = 2`

Modulus:

`a % b = 0`

Increment:

`b++ = 21`

Decrement:

`b-- = 19`



# Basic Operator – Relational Operators

- It compare 2 variables.

`a=10, b=20`

Equal to:

`a == b : true`

Not equal to:

`a != b : false`

Greater than:

`a > b : false`

Less than:

`a < b : true`

Greater than or equal to:

`a >= b : false`

Less than or equal to:

`a <= b : true`



# Basic Operator – Bitwise Operators

- Can be applied to the integer types, long, int, short, char, and byte.
- Performs bit-by-bit operation
- Bitwise operator works on bits



# Basic Operator – Bitwise Operators

```
//integer format
```

```
a=60, b=13
```

```
//binary format
```

```
a=0011 1100
```

```
b=0000 1101
```

```
a&b = 0000 1100
```

```
a|b = 0011 1101
```

```
a^b = 0011 0001
```

```
~a = 1100 0011
```



# Basic Operator – Logical Operators

- It works with Boolean values.

```
a=true
```

```
b=false
```

```
Logical AND: a && b : false
```

```
Logical OR: a || b : true
```

```
Logical NOT: !(a && b) : true
```



# Basic Operator – Assignment Operators

Simple assignment operator: `c=a+b` //assign a+b to c

Add AND assignment operator: `c+=a` //assign c=c+a

Subtract AND assignment operator: `c-=a` //assign c=c-a

Multiply AND assignment operator: `c*=a` //assign c=c\*a

Divide AND assignment operator: `c/=a` //assign c=c/a

Modulus AND assignment operator: `c%=a` //assign c=c\*a

Left shift AND assignment operator: `c<<=2` //assign c=c<<2

Right shift AND assignment operator: `c>>=2` //assign c=c>>2

Bitwise AND assignment operator: `c&=2` //assign c=c&2

Bitwise exclusive AND assignment operator: `c^=2` //assign c=c^2

Bitwise inclusive AND assignment operator: `c|=2` //assign c=c|2





# Basic Operator – Conditional Operators

- It is also known as ternary operator.
- This operator consists of three operands and is used to evaluate Boolean expressions.

```
variable = (expression) ? value if true : value if false;
```



# Basic Operator – Conditional Operators

```
public class Test
{
    public static void main(String args[])
    {
        int a, b;
        a = 10;
        b = (a == 1) ? 20 : 30;
        System.out.println( "Value of b is : " + b );
    }
}
```

Value of b is : 30

