

2. Assignment Operators:

=, +=, -=, *=, /=, %=

```
public static void main(String[] args)
{
    int a = 10;
    System.out.println(a);
    a += 2;
    System.out.println(a);
    a -= 2;
    System.out.println(a);
    a *= 2;
    System.out.println(a);
    a /= 2;
    System.out.println(a);
    a %= 2;
    System.out.println(a);
}
```

```

1-----2-----3-----4-----+
public static void main(String[] args)
{
    int a = 10;
    int b = 20;

    int min = a<b?a:b;
    int max = a>b?a:b|;

    System.out.println(a);
    System.out.println(b);
    System.out.println("Min : "+min);
    System.out.println("Max : "+max);

}
}

```

```

1 class Test
2 {
3     public static void main(String[] args)
4     {
5         int a = 10;
6         int b = 10;
7         if(a++==10 || b++==10)
8         {
9             System.out.println(a+" "+b);
10        }
11        int c = 10;
12        int d = 10;
13        if(c++==10 || d++==10)
14        {
15            System.out.println(c+" "+d);
16        }
17    }
18 }

```

int a = 10; a 10 11 int b = 10; b 10 11 if(a++==10 b++==10) Unnecessary { 10 T T 10 T Sopln(a+" "+b); } OP:11 11	int a = 10; a 10 11 int b = 10; b 10 if(a++==10 b++==10) { 10 T T Sopln(a+" "+b); } OP:11 10	<table border="1"> <thead> <tr> <th>A</th> <th>B</th> <th>A&B</th> <th>A B</th> </tr> </thead> <tbody> <tr> <td>T</td> <td>T</td> <td>T</td> <td>T</td> </tr> <tr> <td>T</td> <td>F</td> <td>F</td> <td>T</td> </tr> <tr> <td>F</td> <td>F</td> <td>F</td> <td>F</td> </tr> <tr> <td>F</td> <td>T</td> <td>F</td> <td>T</td> </tr> </tbody> </table>	A	B	A&B	A B	T	T	T	T	T	F	F	T	F	F	F	F	F	T	F	T
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```

public static void main(String[] args)
{
    int a = 10;
    int b = 10;
    if(a++!=10 & b++!=10)
    {
    }
    System.out.println(a+" "+b);

    int c = 10;
    int d = 10;
    if(c++!=10 && d++!=10)
    {
    }
    System.out.println(c+" "+d);
}
}

```

1. Primitive Data Types / Primary Data Types

a) Numeric Data Types

1. Integer / Integral Data Types

byte

short

int

long

2. Non Integral Data Types

float

double

b) Non Numeric Data Types

char

boolean

3. Comparison Operators:

==, !=, <, >, <=, >=

```
1 class Test
2 {
3     public static void main(String[] args)
4     {
5         int a = 10;
6         int b = 20;
7         System.out.println(a == b); // false
8         System.out.println(a != b); // true
9         System.out.println(a < b); // true
10        System.out.println(a > b); // false
11        System.out.println(a <= b); // true
12        System.out.println(a >= b); // false
13    }
14 }
```

4. Logical boolean Operators:

&, |, ^, ...

```
1 class Test
2 {
3     public static void main(String[] args)
4     {
5         boolean b1 = true;
6         boolean b2 = false;
7
8         System.out.println(b1&b1);
9         System.out.println(b1&b2);
0         System.out.println(b2&b1);
1         System.out.println(b2&b2);
2     }
3 }
4 }
```

```
8         System.out.println(b1&b1);
9         System.out.println(b1&b2);
0         System.out.println(b2&b1);
1         System.out.println(b2&b2);
2         System.out.println();
3         System.out.println(b1|b1);
4         System.out.println(b1|b2);
5         System.out.println(b2|b1);
6         System.out.println(b2|b2);
7         System.out.println();
8         System.out.println(b1^b1);
9         System.out.println(b1^b2);
0         System.out.println(b2^b1);
1         System.out.println(b2^b2);
2
3     }
4 }
```

```
System.out.println(b1&b1); // true
System.out.println(b1&b2); // false
System.out.println(b2&b1); // false
System.out.println(b2&b2); // false
System.out.println();
System.out.println(b1|b1); // true
System.out.println(b1|b2); // true
System.out.println(b2|b1); // true
System.out.println(b2|b2); // false
System.out.println();
System.out.println(b1^b1); // false
System.out.println(b1^b2); // true
System.out.println(b2^b1); // true
System.out.println(b2^b2); // false
```

```
1 class Test
2 {
3     public static void main(String[] args)
4     {
5         int a = 10;
6         int b = 2;
7
8         System.out.println(a&b);
9         System.out.println(a|b);
10        System.out.println(a^b);
11        System.out.println(a<<b);
12        System.out.println(a>>b);
13
14    }
15 }
16
```

```
-----  
byte -----> 1 byte -----|  
short -----> 2 bytes  
int -----> 4 bytes  
long -----> 8 bytes
```

2. Non Integral Data Types

```
-----  
float -----> 4 bytes  
double -----> 8 bytes
```

b) Non Numeric Data Types

```
-----  
char -----> 2 bytes  
boolean -----> 1 bit
```

2. User Defined data Types / Secondary Data Types

```
All classes, All interfaces, All Arrays, All enums,.....
```

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All classes, All interfaces, All Arrays, All enums,.....
```

Note: No fixed memory allocations are existed for User defined Data Types.

Note: The default value for User defined data types is 'null' .

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Note: The default value for User defined data types is 'null' .

```
class A{  
}  
  
A a; // a = null  
  
String str; // str = null
```

```
1 class Test  
2 {  
3     public static void main(String[] args)  
4     {  
5         System.out.println(Byte.MIN_VALUE+"---->"+Byte.MAX_VALUE);  
6         System.out.println(Short.MIN_VALUE+"---->"+Short.MAX_VALUE);  
7         System.out.println(Integer.MIN_VALUE+"---->"+Integer.MAX_VALUE);  
8         System.out.println(Long.MIN_VALUE+"---->"+Long.MAX_VALUE);  
9         System.out.println(Float.MIN_VALUE+"---->"+Float.MAX_VALUE);  
10        System.out.println(Double.MIN_VALUE+"---->"+Double.MAX_VALUE);  
11        System.out.println(Character.MIN_VALUE+"---->"+Character.MAX_VALUE);  
12        System.out.println(Boolean.MIN_VALUE+"---->"+Boolean.MAX_VALUE);  
13    }  
14 }
```

