

variables → container

It stores data temporarily.

→ every variable has a type

→ integer ⇒ 1, 5, 7, 9

→ float ⇒ 1.2, 98.7, 5.0009

→ String ⇒ name, message

DATA
TYPES

<data.type> <variable_name>

```
class Test{
    public static void main(String[] args){
        // code
        System.out.println("Hello Akarsh");
        System.out.print("Bye Akarsh");
        System.out.println("Okay Akarsh");

        // variable declaration
        // int a;
        // float b;
        // String name;

        // System.out.println(a);
        // System.out.println(b);
        // System.out.println(name);

        // variable declaration + intialisation
        // int a = 5;
        // float b = 2.78f;
        // String name = "Akarsh";

        // System.out.println(a);
        // System.out.println(b);
        // System.out.println(name);

        // variable declaration and variable assignment
        int a;
        float b;
        String name;

        a = 5;

        System.out.println(a);
        // System.out.println(b);
        // System.out.println(name);

        a = 100;
        System.out.println(a);

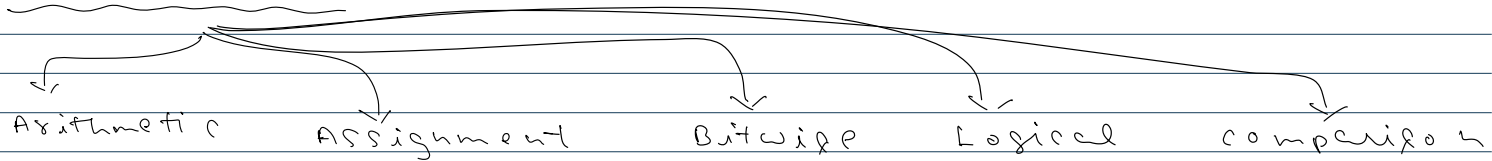
    }
}
```

variable naming convention

variable naming convention

starting char \rightarrow -, \$, or any alphabet
cannot use reserved keywords.

Java Operators



Arithmetic Operators

They are used to perform mathematical operations.

+ add
- sub
* multiply
/ divide
% modulus \rightarrow remainder

$$10^{\circ} 10 \div 3 = 3 \quad \begin{array}{r} 3 \overline{) 10} \\ \underline{-9} \\ 1 \end{array}$$

$$2^{\circ} 10 \div 5 = 2 \quad \begin{array}{r} 5 \overline{) 10} \\ \underline{-10} \\ 0 \end{array}$$

$10^{\circ} 6 \div 0 = \rightarrow$ Exception

```
1 class Test{
2     public static void main(String[] args){
3         System.out.println(2%5);
4         System.out.println(10%3);
5         // System.out.println(2%0);
6
7         int a = 8;
8         int b = 8;
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        System.out.println(a%b);
14    }
15 }
```

```
class Test{
    public static void main(String[] args){
        System.out.println(2%5);
        System.out.println(10%3);
        // System.out.println(2%0);

        int a = 8;
```

```
int b = 9;
```

```
a = 90;
```

```
System.out.println(a+b);
```

```
System.out.println(a-b);
```

```
System.out.println(a*b);
```

```
System.out.println(a/b);
```

```
System.out.println(a%b);
```

```
System.out.println(5/2.0f);
```

```
System.out.println(4/2.0f);
```

```
System.out.println(2.0f);
```

```
}  
}
```

Assignment operators

They are used to assign values to variables.

a = 9;

↳ assignment

$\left\{ \begin{array}{l} a = a + 1 \Rightarrow a += 1; \\ b = b - 1 \Rightarrow b -= 1; \\ a = a * 5 \Rightarrow a *= 5; \end{array} \right.$

```
class Test{
```

```
    public static void main(String[] args){
```

```
        int a = 6;
```

```
        a = 7+1;
```

```
        System.out.println(a);
```

```
        int b = 7;
```

```
        a = a + b;
```

```
        System.out.println(a);
```

```
        a = a + 1;
```

```
        System.out.println(a);
```

```
        a += 1;
```

```
        System.out.println(a);
```

```
        a -= 5;
```

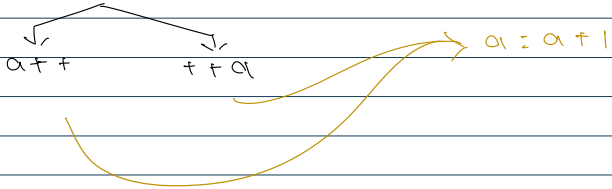
```
System.out.println(a);
```

```
}
```

```
}
```

Increment / Decrement Operator

Increment \rightarrow it will incx the value by 1.



Increment

- Pre increment $\Rightarrow ++a \Rightarrow$ value will be increment first then utilised
- Post increment $\Rightarrow a++ \Rightarrow$ value will be utilised first then increment.

```
class Test{
    public static void main(String[] args){
        int a = 6;

        a++; // a = a + 1;

        System.out.println(a); // a = 7

        System.out.println(a++);

        System.out.println(a); // a = 8

        System.out.println(++a); // a = 9


        int x = 8;
        int c = x++ - ++x;
        System.out.println(c);

        System.out.println(x);
        c = x++ - ++x + --x + x--;
        System.out.println(c);

        System.out.println(x);
        // c = x++ - ( ++x + --x ) + x--;
        // System.out.println(c);

        c = x++ - (x + x) + x--;
        System.out.println(c);

    }
}
```

Comparison Operators

5 > 7
 ↗ false
 ↘ true

equal to ==

not equal to !=

greater than >

less than <

greater than or equal to >=

equal to

less than or equal to

<=

```
class Test{
```

```
    public static void main(String[] args){
```

```
        int a = 5;
```

```
        int b = 7;
```

```
        System.out.println(a > b);
```

```
        System.out.println(a < b);
```

```
        System.out.println(a >= b);
```

```
        System.out.println(a <= b);
```

```
        System.out.println(a == b);
```

```
        System.out.println(a != b);
```

```
    }
```

```
}
```