Variables

Variables are used to store the values.Variables are used to access the data and to modify the data.
There are two types of variables:

- Local variables
- Member variables

Local vaiables:

Variables which are declared inside the method body are called as local variable.

Member Variables:

Variable declared within inside the class are known as member variables.

```
Class Demo
{
int x=20; \\ member variable
public static void main(String Args[])
{
        int y=10; \\ local variables
        system.out.println(" The value of y is "+y);
        system.out.println(" The value of x is "+x);
}
}
```

Declaration:

Syntax

Datatype variable name;
Eg:
Int id;

Initilaisation

Variable name=value;
Eg:
ID=10;

```
Class demo
{
        Public static void main (String args[])
        {
                int x;
                x=300;
                System.out.println(" Value of x is"+x);
        }
}
```

```
Class student
{
        Public static void main (String args[])
{
        int id=10;
        String name=”Alex”;
        Double marks=65.5
        System.out.println(“ ID of student is”+id);
        System.out.println(“name of student is”+ name);
        System.out.println(“marks of student is”+ marks);
        }
}
```

Variables can be declared within same line or declared and initialize in different

Eg :

```
int id;
id=10;
```

or

```
int id=10;
```

If type is same then it can be declared in a single line or multiple line.

```
String name;
String email;
```

Or

```
String name, email;
```

Re-initialization

Changing or modifying variable values are known as re-initialization.

Eg:

```
Class Demo
{
        Public static void main(String args[])
        {
                Int x1=10,x2=20,x3=30;
                System.out.println(“ value of x1 is”+x1);
                System.out.println(“ value of x2 is”+x2);
                System.out.println(“ value of x1 is”+x3);

                X2=x1;
                X3=x2;

                System.out.println(“ value of x1 is”+x1);
                System.out.println(“ value of x2 is”+x2);
                System.out.println(“ value of x1 is”+x3);
        }
}
```

O/p

value of x1 is 10
value of x2 is 20
value of x3 is 30
value of x1 is 10
value of x2 is 10
value of x3 is 10

The default value of local variable is not displayed. Only for member variables default value is displayed. In case of local variable an error message is displayed.

Difference between member variables and local variables:

Member Variables	**Local Variables**
1. Declared inside class	1. Declared inside the method
2. Can be accessed throught out the programme	2. Can be accessed only inside the method where its declared.
3. Should be declared with keyword static	3. No need to declare value with static
4. Default value for variable is displayed	4. Default value is not displayed an error message is displayed.

Within a same context of programme we cannot declare multiple variable within the same name.

In a different context of programme we can declare multiple variables with the same name.

Final variable:

Final is a keyword in JAVA, if we declare any variable as final the value of the variable is constant. Final value of variable cannot be re-initialise.

JVM will not provide default value for the final variable.