Use of static & non-static

Date: 20th March 24

static members are connected to the class, whereas Non-static members are linked to specific class instances. I

1: Associated with

Static: Static members (variables and methods) are associated with the class itself rather than with individual instances/objects.

Non-Static: Non-static members are specific to each instance/object of a class, as they are tied to objects created from the class.

2: Memory Allocation (*)

Static: Static members are allocated memory only once, at the time of class loading. They are shared among all instances of the class.

Non-Static: Non-static members have memory allocated separately for each instance of the class. Each object has its own copy of non-static members.

3: Initialization

Static: Static members are initialized when the class is loaded into memory, typically during program startup. Initialization happens only once.

Non-Static: Non-static members are initialized when each instance of the class is created, usually using the new keyword. Initialization occurs separately for each object.

4: Usage

Static: Static members are commonly used for utility methods, constants, or variables that are not specific to individual instances. For example, a Math class containing mathematical functions.

Non-Static: Non-static members are used for instance-specific behaviour, as they hold data specific to each object. For example, instance variables that store unique values for each object.

5: Accessing

Static: Static members can be accessed directly using the class name followed by the member name (e.g., ClassName.memberName).

Non-Static: Non-static members are accessed using an object reference followed by the member name (e.g., objectReference.memberName).

```
package UseOfStaticAndNonStatic;
public class Student
{
	String sname;
	int srollnum;
	String spname;

	Student(String s1, int n1,String s2)
	{
		sname=s1;
		srollnum=n1;
		spname=s2;
	}

	public void studentInfo()
	{
		System.out.println(sname +" : "+ srollnum + " : "+spname);
	}

	public static void main(String[] args)
	{
		Student s1=new Student("Amol", 101, "abc");
		Student s2=new Student("Monika", 102, "abc");
		Student s3=new Student("Rahul", 103, "xyz");

		s1.studentInfo();
		s2.studentInfo();
		s3.studentInfo();
	}
}
```

```java
package UseOfStaticAndNonStatic;
public class Student1
{
	String sname;
	int srollnum;
	static String spname="xyz";

	Student1(String s1, int n1)
	{
		sname=s1;
		srollnum=n1;
	}

	public void studentInfo()
	{
		System.out.println(sname +" : "+ srollnum + " : "+spname);
	}

	public static void main(String[] args)
	{
		Student1 s1=new Student1("Amol", 101);
		Student1 s2=new Student1("Monika", 102);
		Student1 s3=new Student1("Rahul", 103);

		s1.studentInfo();
		s2.studentInfo();
		s3.studentInfo();
	}
}
```