Static Keyword

Static keyword used -

1. with a variable
2. with a method/function
3. static block

Static keyword with a variable

A static keyword used with a variable means that the variable in that class is not object specific but it is now class specific. In simple words if the value of a static variable is changed for one object then it will be changed for all other objects belonging to that class.

Let us understand this with an example-

We will create a Student class which consists of -

1. String name
2. int age
3. String Teacher.

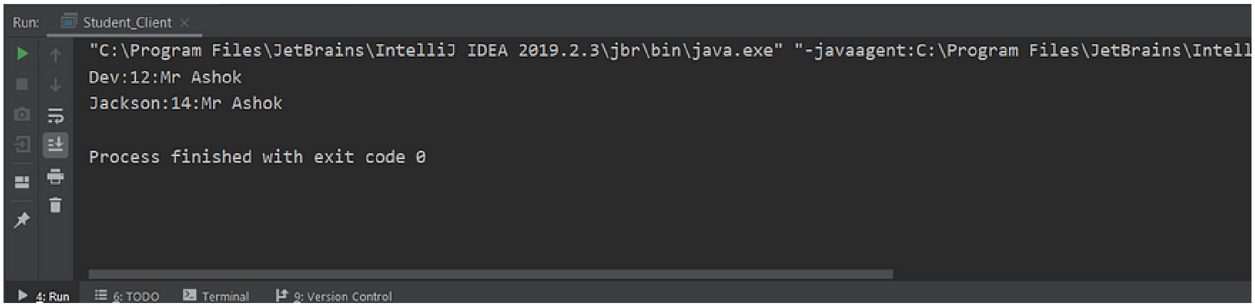
Now the age and name will be different for all students but the teacher will be the same for all of them.So we will initialize teacher with **static String teacher.**

```
public class Student {

   int age;

   String name;

   static String teacher;

}

class Student_Client{
   public static void main(String[] args) {

       Student s1=new Student();

       s1.age=12;

       s1.name="Dev";

       Student.teacher ="Mr Ashok";

       Student s2=new Student();

       s2.age=14;

       s2.name="Jackson";

       //No initialization of teacher for student s2



       System.out.println(s1.name+":"+s1.age+":"+s1.teacher);

       System.out.println(s2.name+":"+s2.age+":"+s2.teacher);
```

```
    }
```

```
}
```

Here we have initialized teacher for s1 but not for s2. However we will print teacher for both the students.



```
"C:\Program Files\JetBrains\IntelliJ IDEA 2019.2.3\jbr\bin\java.exe" "-javaagent:C:\Program Files\JetBrains\Intell
Dev:12:Mr Ashok
Jackson:14:Mr Ashok

Process finished with exit code 0
```

We can clearly observe that teacher gets printed for both the students although teacher was initialized for student s1 only.

Since static variables are class specific therefore it is not necessary to declare an object to access static variables.

```
public class Student {
   int age;
   String name;
   static String teacher="Mr Ashok";
}
class Student_Client{
   public static void main(String[] args) {
       Student s1=new Student();
       s1.age=12;
       s1.name="Dev";

       Student s2=new Student();

       s2.age=14;
       s2.name="Jackson";
```

```
System.out.println(s1.name+":"+s1.age+":"+Student.teacher);
```

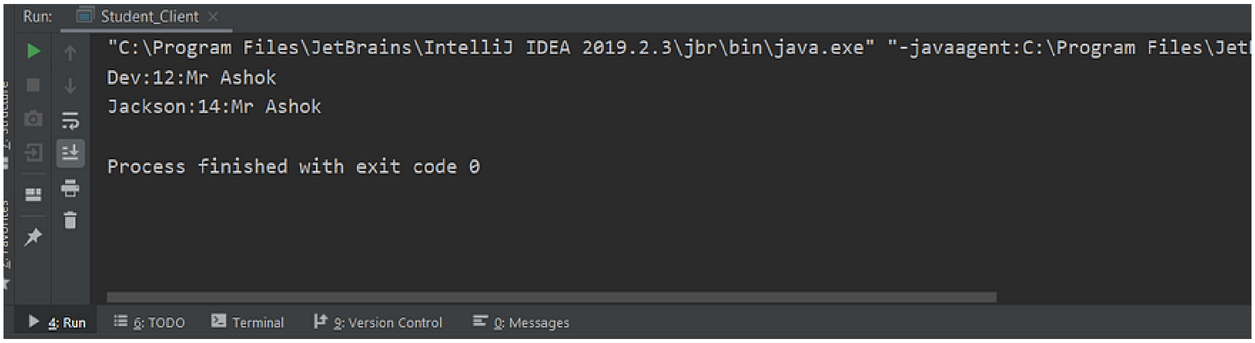
```
System.out.println(s2.name+":"+s2.age+":"+Student.teacher);
```

```
// Accessing teachers using class Student class instead of
objects
```

```
   }
```

```
}
```

I have slightly edited the previous code and initialized the teacher in the class itself .Also I am printing teacher without using the object s1 and s2 but using the Student class itself.



```
"C:\Program Files\JetBrains\IntelliJ IDEA 2019.2.3\jbr\bin\java.exe" "-javaagent:C:\Program Files\Jet
Dev:12:Mr Ashok
Jackson:14:Mr Ashok

Process finished with exit code 0
```

We can observe that the teacher has been assigned for both the students.

Static Block

Static blocks are a special type of blocks that we can use inside a class.The advantage of using static block is that if we keep static components inside the block then they are loaded only once.

Let us understand this with an example-

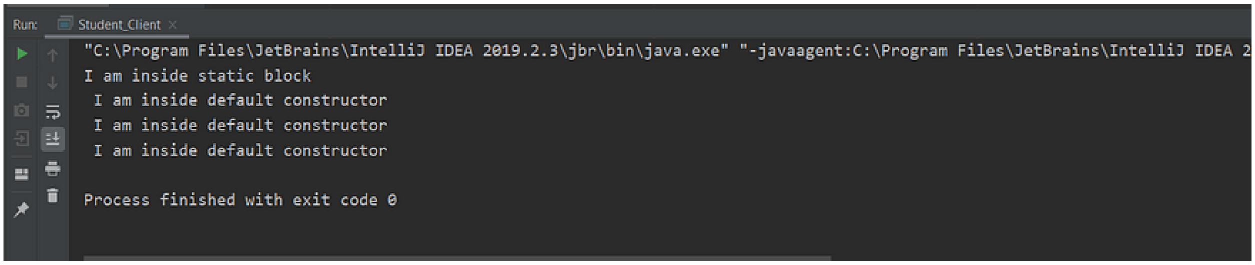
```
public class Student {
```

```
    int age;
```

```
   String name;
   static String teacher;
   static {
       System.out.println("I am inside static block");
   }
   public Student(){
       System.out.println(" I am inside default constructor");
   }
}
class Student_Client{
   public static void main(String[] args) {
       Student s1=new Student();
```

```
        Student s2=new Student();

        Student s3=new Student();

    }

}
```

Here we have created default constructor and static block inside the Student class.Also we create three objects s1,s2 and s3.We will run the following code



```
"C:\Program Files\JetBrains\IntelliJ IDEA 2019.2.3\jbr\bin\java.exe" "-javaagent:C:\Program Files\JetBrains\IntelliJ IDEA 2
I am inside static block
 I am inside default constructor
 I am inside default constructor
 I am inside default constructor

Process finished with exit code 0
```

We can clearly observe that **“I am inside static block”** is printed only once whereas **“I am inside default constructor”** is printed thrice since we created three objects s1,s2 and s3.

This happens because the static block is only loaded once when the class is called for the first time.