



CHARUSAT
CHAROTAR UNIVERSITY OF SCIENCE AND TECHNOLOGY

CE251: Java PROGRAMMING

July – November 2020

Java Blocks



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Topic to discuss

- Instance block
- Static Block
- Static Keyword

Instance block

```
{  
    System.out.println("This is instance block");  
}
```

What is the output here?

```
class InstanceBlock
{
    {
        System.out.println("Instance block called");
    }

    InstanceBlock()
    {
        System.out.println("Constructor called");
    }
    public static void main(String[] args)
    {
        InstanceBlock a = new InstanceBlock();
    }
}
```

Multiple Instance Block

```
class InstanceBlock
{
    {
        System.out.println("Instance block-1 called");
    }
    {
        System.out.println("Instance block -2 called");
    }
    {
        System.out.println("Instance block-3  called");
    }

    InstanceBlock()
    {
        System.out.println("Constructor called");
    }
    public static void main(String[] args)
    {
        InstanceBlock a = new InstanceBlock();
    }
}
```

Instance Block Use to Initialize the Variable

Class Emp

```
{  
    int eid;  
    {  
        eid=111;  
    }  
    void display()  
    {  
        S.O.P(eid);  
    }  
P.S.V.M.()  
{  
    new Emp().display();  
}  
}
```

Static block

- Is used to initialize the static data member.
- It is executed before the main method at the time of classloading.

```
static {  
    System.out.println("static block called ");  
}
```

What is the output here

```
class Test {  
    static int i;  
    int j;  
    static {  
        i = 10;  
        System.out.println("static block called ");  
    }  
    Test(){  
        System.out.println("Constructor called");  
    }  
}  
  
class Main {  
    public static void main(String args[]) {  
        Test t1 = new Test();  
        Test t2 = new Test();  
    }  
}
```


Can you print any statement without
main() method?

Example

Class WithoutMain

```
{  
    static  
    {  
        S.O.P("static block");  
    }  
    P.S.V.M()  
    {  
    }  
}
```

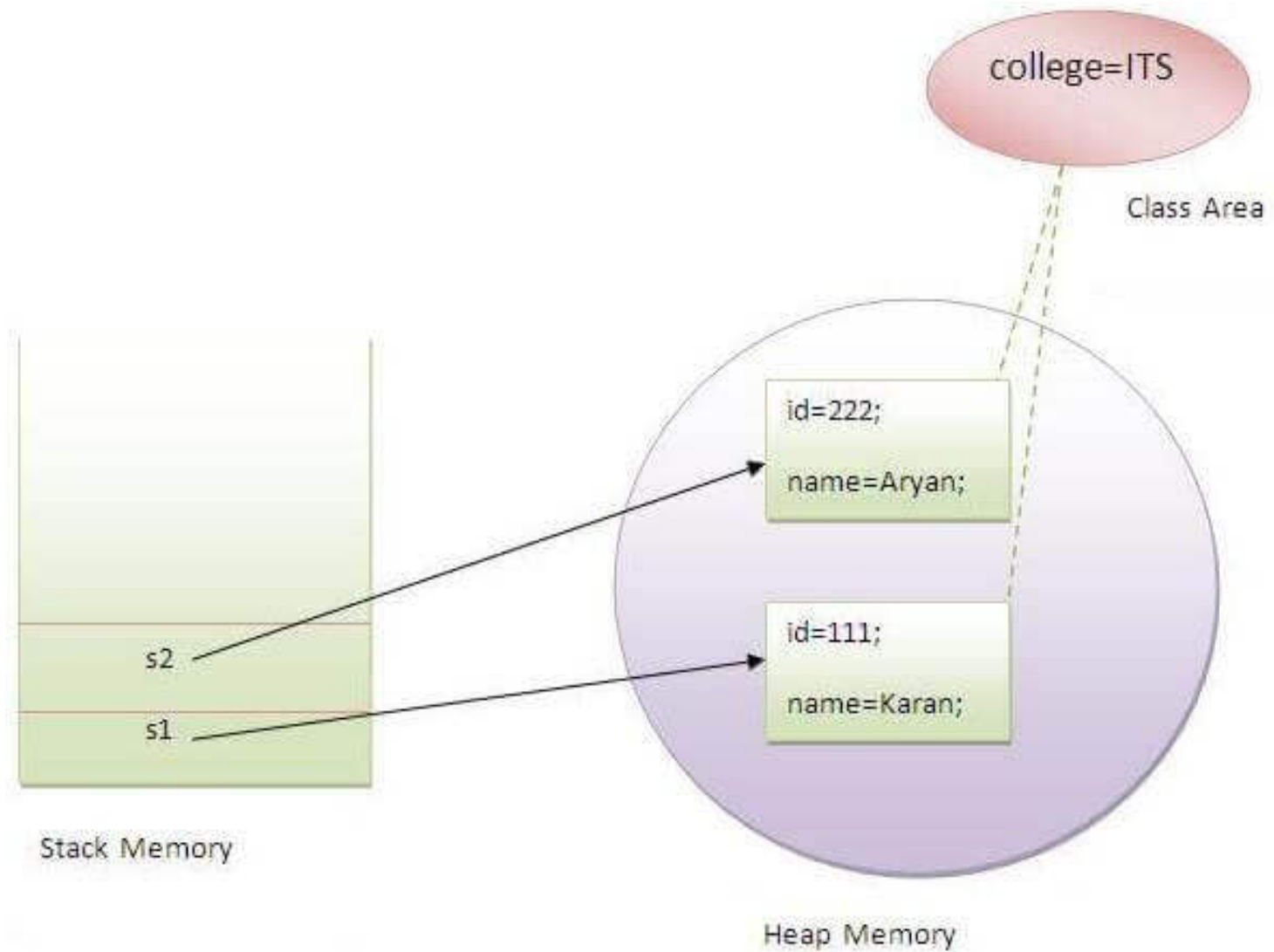
Static Keyword

- The **static keyword** in Java is used for memory management mainly. We can apply static keyword with variables, methods, blocks

Java static variable

```
class Student{  
    int rollno;  
    String name;  
    String college="ITS";  
}
```

```
1.class Student{
2.  int rollno;//instance variable
3.  String name;
4.  static String college="ITS";//static variable
5.  //constructor
6.  Student(int r, String n){
7.    rollno = r;
8.    name = n;
9.  }
10. //method to display the values
11. void display (){System.out.println(rollno+" "+name+" "+college);}
12.}
13.//Test class to show the values of objects
14.public class TestStaticVariable1 {
15. public static void main(String args[]){
16. Student s1 = new Student(111,"Karan");
17. Student s2 = new Student(222,"Aryan");
18. //we can change the college of all objects by the single line of code
19. //Student.college="BBDIT";
20. s1.display();
21. s2.display();
22. }
23.}
```



Program of the counter without static variable

- instance variable gets the memory at the time of object creation

1.class Counter{

2.int count=0;//will get memory each time when the instance is created

3.

4.Counter(){

5.count++;//incrementing value

6.System.out.println(count);

7.}

8.

9.public static void main(String args[]){

10.//Creating objects

11.Counter c1=new Counter();

12.Counter c2=new Counter();

13.Counter c3=new Counter();

14.}

15.}

Program of counter by static variable

- **class** Counter2{
- **static int** count=0;//will get memory only once and retain its value
-
- Counter2(){
- count++;//incrementing the value of static variable
- System.out.println(count);
- }
-
- **public static void** main(String args[]){
- //creating objects
- Counter2 c1=**new** Counter2();
- Counter2 c2=**new** Counter2();
- Counter2 c3=**new** Counter2();
- }
- }

Any Question??