

Code  at Random
(OPC) PVT. LTD.

MODIFIERS

[USE OF STATIC]

What Are Modifiers ??

- It is used to provide extra definition to the function.
- It's types are:-
 - Final
 - Static
 - Abstract
 - Native
 - Synchronised

Final Keyword

This modifier is used to provide some extra definition to the element, with it is being used.

- **When used with Variables** :- When the **final** keyword is used with variables, it makes them constant, i.e., their value cannot be changed. For Example:- `final int a=5;` //Now value of a cannot be changed.
- **When used with Functions** :- When the **final** keyword is used with functions, it prevents them from being overridden (task given a function cannot be changed).
- **When used with class** :- When the **final** keyword is used with class, it prevents it from being inherited (properties of one class cannot be taken by other class).

Static Keyword

- The **static keyword** in Java is used for memory management mainly. We can apply static keyword with variables, methods, blocks and nested classes.
- The static can be:
 1. Variable (also known as a class variable)
 2. Method (also known as a class method)
 3. Block
 4. Nested class

JAVA Static Variable Vs Non-Static Variable

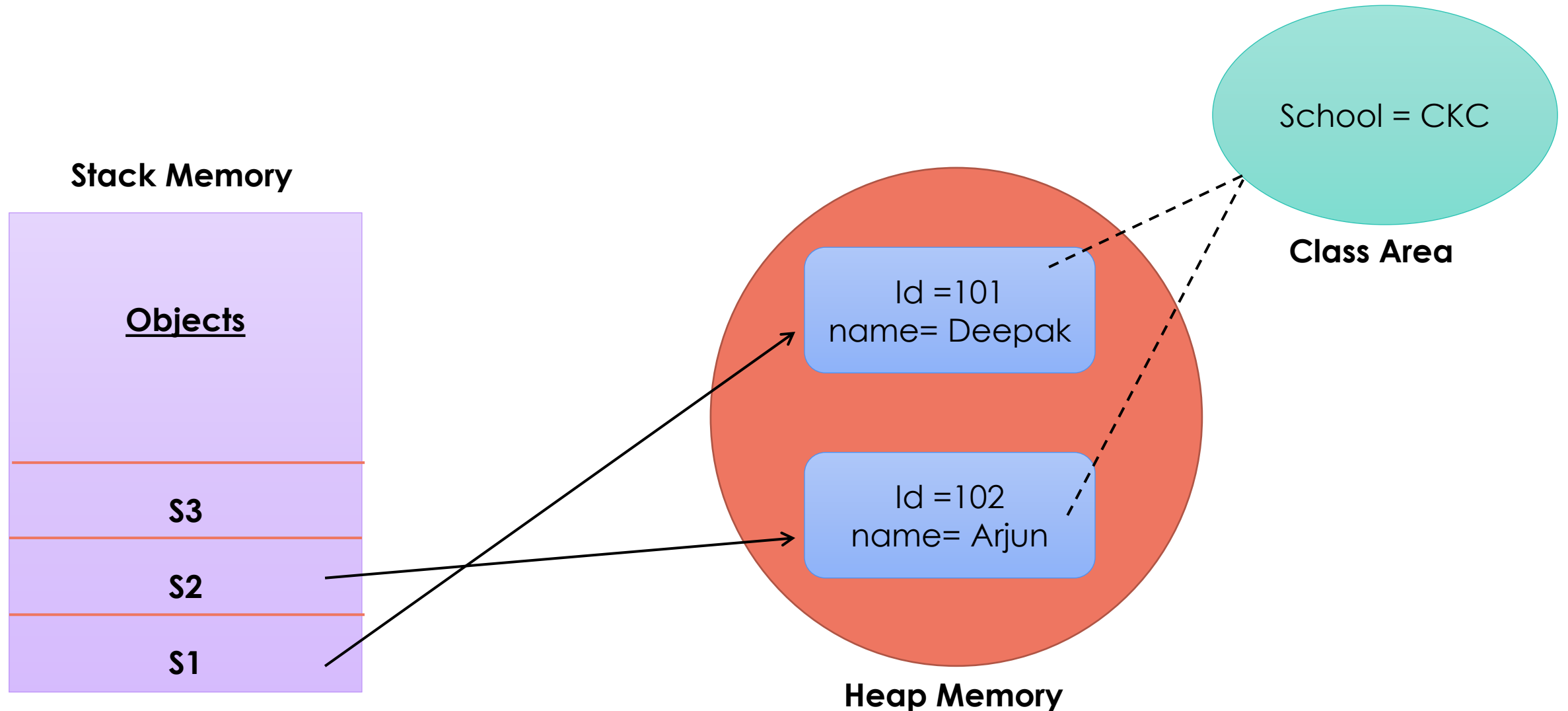
Static Variables / Class Variables	Non-Static Variables / Instance Variables
<ul style="list-style-type: none">• A variable which maintains a single copy for the whole class which is shared by all the objects of that class is called Class Variables	<ul style="list-style-type: none">• A variable which maintains a separate copy for each and every individual object is called instance variables.
<ul style="list-style-type: none">• The static variable gets memory only once in the class area at the time of class loading.	<ul style="list-style-type: none">• The non-static variable gets memory every time an object is created.
<ul style="list-style-type: none">• It makes your program memory efficient (i.e., it saves memory).	<ul style="list-style-type: none">• It wastes lot of memory.
<ul style="list-style-type: none">• Example:-<pre>class demo{ static int a; //Class variable }</pre>	<ul style="list-style-type: none">• Example:-<pre>class demo{ int a; //Instance variable }</pre>

More About Static Variable

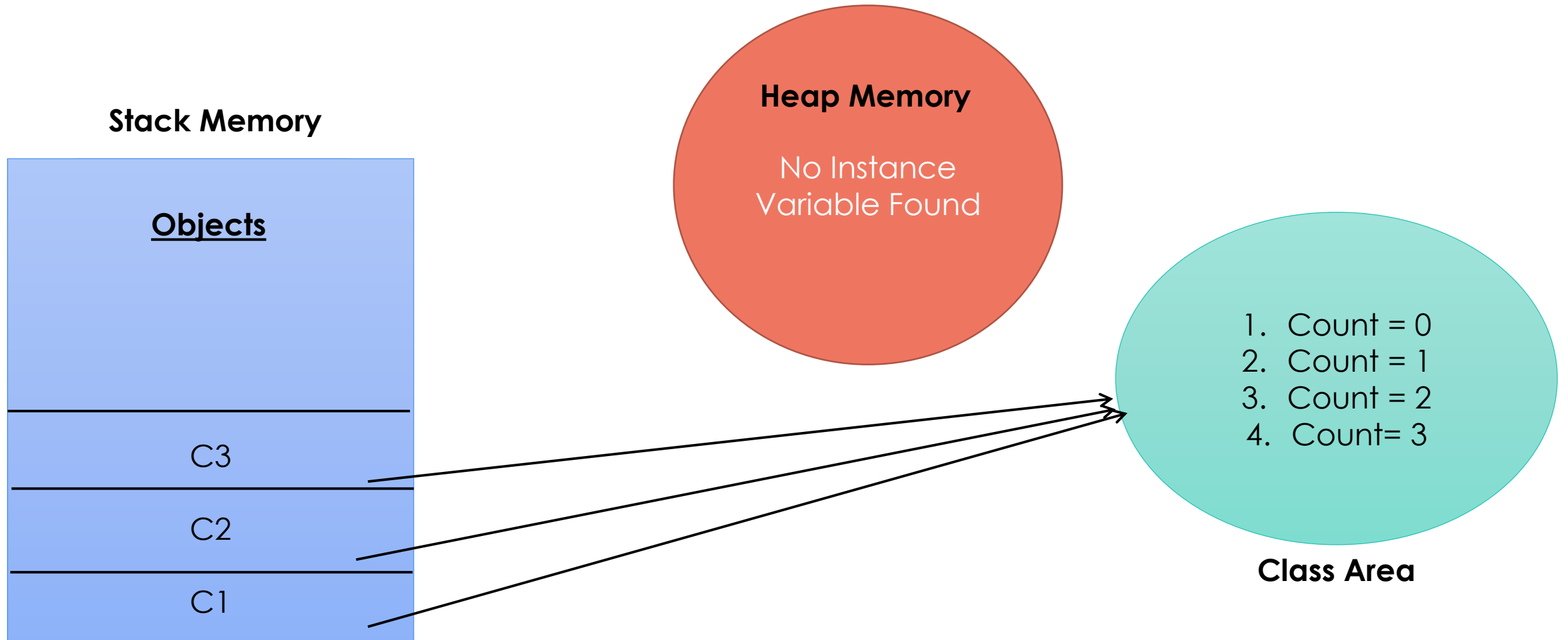
- The static variable can be used to refer to the common property of all objects (which is not unique for each object), for example, the company name of employees, college name of students, etc.
- Example:-

```
class Student{  
    int rollno;//instance variable  
    String name;  
    static String college ="ITS";//static variable  
}
```

Memory Structure After Executing The Program



Memory Structure For Counter Program



JAVA Static Method Vs Non-Static Method

Static Methods/ Class Methods	Non-Static Methods / Instance Methods
<ul style="list-style-type: none">• The methods which are executed through the class name are called Class Methods.	<ul style="list-style-type: none">• A methods which are executed through the objects of the class are called instance variables.
<ul style="list-style-type: none">• Example:- <code>Math.pow();</code> // here Math is the class name and pow() is the function in it.	<ul style="list-style-type: none">• Example:- <code>sc.nextInt();</code> // Here we are using the function nextInt() with the help of its object sc.
<ul style="list-style-type: none">• A static method can only access static data member and can change the value of it. It cannot access non-static variable.	<ul style="list-style-type: none">• It can use both instance and class variables.
<ul style="list-style-type: none">• Static methods are called Class Methods.	<ul style="list-style-type: none">• Non- Static Methods are called Instance Methods.