```
String [][] arr = { {"%", "$$"}, {"***", "@@@@", "#####"}};
 for(String [] str : arr)
    for(String s : str)
        System.out.println(s);
                                                                                       @@@@
                                                      str % $$
                                                                                               #####
        if(s.length() == 4) //Line n1
           break; //Line n2
    break; //Line n3
                                                          $ $$
int [] arr = {2, 1, 0};
                                                                               2
for(int i : arr) {
    System.out.println(arr[i]); 0
 int [] arr = {3, 2, 1};
  for(int i : arr)
     System.out.println(arr[i]);//AIOBE
 int i;
 outer: do
           i = 5;
            inner:
            while (true)
               System.out.println(i--);
               if (i == 4) {
                   break outer;
        } while (true);
                               class Student
                                                                       classname same as methodname => Constructor
 class Student
                                 //instance variables
    //instance variables
                                                          AfterCompilation
                                  String name;
     String name;
                                  int age;
     int age;
                                  float height;
     float height;
                                  Student()
                                                    [Added by compiler]
                                                 default constructor
Before Compilation
                                                      (Compiler)
                                                                   name : null
//Constructing the object
                                                                  age : 0
                                                                                   instance variable
Student std = new Student(); constructor
                                                                  height: 0.0f
                              (meaningful values to the
                                instance variables)
        creates an object
  class Student
     //instance variables
      String name;
      int age;
      float height;
     //Parameterized constructor
      Student(String name, int age, float height)
         this.name = name;
                                gives meaningful values
         this.age = age;
                                to the instance variables
         this.height = height;
                                                                             instance varaibles
  Student std = new Student("sachin",49,5.5f);
                            name :null
                                                                             age : 8 49
          Creates an Object
                                                                             height: 0.0f
                                        (#1)

    Creates an object

2. Load the .class file and scan for instance variable allocated memory supply default values.
Call the constructor(either default or parameterized)
                                                                                                                                            instance varaibles
4. return the reference.
class Student
                                                                                                                                             name :pull
                                                                                                                                             age : 8 49
     //instance variables
                                                                                                                                             height: 0.0f
      String name;
      int age;
                                                                             //Constructing the object
      float height;
                                                                             Student std1 = new Student("sachin",49,5.5f);
                                                                            //getting the values from instance variables
     //Parameterized Constructor
                                                                            System.out.println("Name is :: "+std1.name);
                                                                                                                             sachin
     Student(String name, int age, float height)
                                                                            System.out.println("Age is :: "+std1.age);
                                                                             System.out.println("Height is :: "+std1.height); 5.5
        this.name = name;
                              good practise
        this.age = age;
        this.height = height;
                                                                                                                                              instance variables
                                                                             //Constructing the object
                                                  Constructor Overloading
                                                                             Student std2 = new Student();
     //Zero Argument Constructor
                                                                                                                                               dhoni
name :<del>null</del>
     Student()
                                                                             //getting the values from instance variables
                                                                                                                                               age :8 41
                                                                             System.out.println("Name is :: "+std2.name); dhoni
              = "dhoni";
                                                                                                                                               height:<del>0.0f</del>
         name
                                                                             System.out.println("Age is :: "+std2.age);
              = 41;
                           not a good practise
                                                                             System.out.println("Height is :: "+std2.height); 5.6
        height = 5.6f;
                                                                             //Constructing the object
                                                                                                                                               instance variables
                                                                              Student std3 = new Student();
                                                                             //getting the values from instance variables
                                                                             System.out.println("Name is :: "+std3.name);
                                                                                                                               dhoni
                                                                                                                                                 dhoni
name :<del>null</del>
                                                                             System.out.println("Age is :: "+std3.age);
                                                                             System.out.println("Height is :: "+std3.height); 5.6
                                                                                                                                                 age :8 41
                                                                                                                                                 height: 0.0f
class Student
    //instance variables
    String name;
     int age;
    float height;
                                                      void Student(String name,int age, float height)
Student(String name, int age, float height)
                                                         System.out.println("CALLING THE METHOD");
   System.out.println("CALLING THE CONSTRUCTOR");
                                                          this.name = name;
    this.name = name;
                                                         this.age = age;
    this.age = age;
                                                         this.height = height;
   this.height = height;
                                                         Method(Programmer should call this method using reference)
      constructor
(It gets called automatically at the time
of Object construction)
class Test
                                                                                                MVC
   public static void main(String[] args)
       System.out.println("Inside String[] args");
                                                                                              java <u>Test</u>
   public static void main(int arg)
                                                     Overloading static methods
       System.out.println("Inside int arg");
                                                                                              Test.main(new String[]{})
                                                         (Yes, possible)
   public static void
                                                                                  DrivingCode
       System.out.println("Inside zero argument");
                                                                           main(String[] args)
                                                                                                     main(int arg)
```

UserDefined Methods

```
class Student
    static String nationality = "IND"; static variable
   String name; instance variable
    int age;
                                                                     nationality
                                                                      null IND
    Student(String name,int age)
                                        Constructor
                                                                                                                     name : null
        this.name = name;
                                                                     Student.class
                                 (shadowing avoided using this)
        this.age = age;
                                                                                                                    age : 0 49
                                                                                     main
                                                                     Test.class
Student std= new
                  Student("sachin",49);
                                                                                           StackArea
                                                                     MethodArea
                                                                                                                   HeapArea
                                                                   (static varaibles)
                                                                                                               (instance variables)
System.out.println("Name
                               is :: "+std.name); //sachin
                               is :: "+std.age); //49
System.out.println("Age
System.out.println("Nationality is :: "+Student.nationality);//IND
 class Student
    String name; #6 instance varaibles
    static String nationality = "IND"; static variables
                                                                                                                                                                instance method
     Student(String name, int age)
                                                                                                                                      nationality
                                                              #5
System.out.println("Static Block :: Loading of Student.class file");
                                                                                                                                      null IND
         System.out.println("Constructor got called");
                                                                                                                                                                  Constructor
                                                                                                                                           仚
        this.name = name;
                                                                                                                                                                                                   sachin
                                                       static block
        this.age = age;
                                                                                                                                                                 static block
                                                                                                                                                                                              name :pull
                                                                                                                                      Student.class
                                                                                                                                                                                              age : 49
 constructor
                                 public void dispStdDetails()
                                                                       #10
                                                                                                                                      Test.class
                                    System.out.println("Inside instance method");
                                                                                                                                                                 static block
                                                                       :: "+name);
:: "+age); sachin 49
                                    System.out.println("Name is
                                    System.out.println("Age is
                                                                                                                                                                   StackArea
                                                                                                                                      MethodArea
                                    System.out.println("Nationality is :: "+nationality); IND
                                                                                                                                                                                                HeapArea
                            instance area
class Test
                                                             public static void main(String[] args)
   static
                                                                #2
System.out.println("Inside main()");
       System.out.println("Loading of Test.class file");
                                                                #8 #3
Student std= new Student("sachin",49);
                                                                std.dispStdDetails();
  static block
                                                        static method
```