Island of Isolation in Java

In java, object destruction is taken care by the [Garbage Collector](https://www.geeksforgeeks.org/garbage-collection-java/) module and the objects which do not have any references to them are eligible for garbage collection. Garbage Collector is capable to identify this type of objects.  
**Island of Isolation:**

* Object 1 references Object 2 and Object 2 references Object 1. Neither Object 1 nor Object 2 is referenced by any other object. That’s an island of isolation.
* Basically, an island of isolation is a group of objects that reference each other but they are not referenced by any active object in the application. Strictly speaking, even a single unreferenced object is an island of isolation too.

**Example:**

|  |
| --- |
| public class Test  {      Test i;      public static void main(String[] args)      {          Test t1 = new Test();          Test t2 = new Test();            // Object of t1 gets a copy of t2          t1.i = t2;            // Object of t2 gets a copy of t1          t2.i = t1;            // Till now no object eligible          // for garbage collection          t1 = null;            //now two objects are eligible for          // garbage collection          t2 = null;            // calling garbage collector          System.gc();        }        @Override      protected void finalize() throws Throwable      {          System.out.println("Finalize method called");      }  } |

Copy CodeRun on IDE

Output:

Finalize method called

Finalize method called

**Explanation :**  
Before destructing an object, Garbage Collector calls finalize method at most one time on that object.  
The reason finalize method called two times in above example because two objects are eligible for garbage collection.This is because we don’t have any external references to t1 and t2 objects after executing t2=null.  
All we have is only internal references(which is in instance variable i of class Test) to them of each other. There is no way we can call instance variable of both objects. So, none of the objects can be called again.

**Till t2.i = t1 :** Both the objects have external references t1 and t2.

**t1 = null :** Both the objects can be reached via t2.i and t2 respectively.

**t2 = null:**No way to reach any of the objects.

Now, both the objects are eligible for garbage collection as **there is no way we can call them**. This is popularly known as **Island of Isolation.**

**Reference:**

* <http://stackoverflow.com/questions/792831/island-of-isolation-of-garbage-collection>