**Garbage Collection – Part\_03**

* **The ways for requesting JVM to run GC:**

Once we made an object eligible for GC, it may not be destroyed immediately by Garbage Collector. Whenever JVM runs GC then only the objects will be destroyed. But when exactly JVM runs GC we can’t expect it is varied from JVM to JVM.

Instead of waiting until JVM runs GC. We can request JVM to run GC programmatically, but whether JVM accepts our request or not there is no guarantee. But most of the times JVM accepts our request.

The following are two ways for requesting JVM to run GC.

* **Way\_01: By using System class:**

System class contains a static method gc() for this purpose.

System.gc();

* **Way\_02: By using Runtime class:**

Java application can communicate with JVM by using Runtime object.

Runtime class present in java.lang package and it is a singleton class. We can create Runtime object by using

Runtime.getRuntime()

Runtime r = Runtime.getRuntime();

Once we got Runtime object we can call, the following methods

on that object.

1. totalMemory()

It returns number of bytes of total memory present in the heap (that is heap size).

1. freeMemory()

It returns number of bytes of free memory present in the heap.

1. gc()

For requesting JVM to run Garbage Collector.

Example:

import java.util.Date;

class RuntimeDemo{

public static void main(String[] args){

Runtime r = Runtime.getRuntime();

System.out.println(r.totalMemory());

System.out.println(r.freeMemory());

for(int I =0; i<10000; i++){

Date d = new Date();

d=null;

}

System.out.println(r.freeMemory());

r.gc();

System.out.println(r.freeMemory());

}

}

Output:

5177344

4945200

4714464

5059352

* **Note:**

gc() method present in System class is a static method, whereas gc() method present in Runtime class is instance method.

Which of the following is valid way for requesting JVM to run GC?

1. System.gc(); // Valid
2. Runtime.gc(); // Invalid
3. (new Runtime().gc()); //Invalid
4. Runtime.getRuntime().gc(); // Valid

* **Note:**

1. It is convenient to use System class gc() method when compared with Rutime class gc() method.
2. With respect to performance it is highly recommended to use Runtime class gc() when compared with System class gc() method. Because, System class gc() method internally calls Runtime class gc() method.

class System{

public static void gc(){

Runtime.getRuntime().gc();

}

}