Garbage Collection

- Garbage collection is deallocating object’s memory after they are no more referenced.
- Garbage collection is automatic in java
- Happens without the knowledge of the programmer as soon as the objects loose their references
- Helps in avoiding memory leaks and dangling pointers

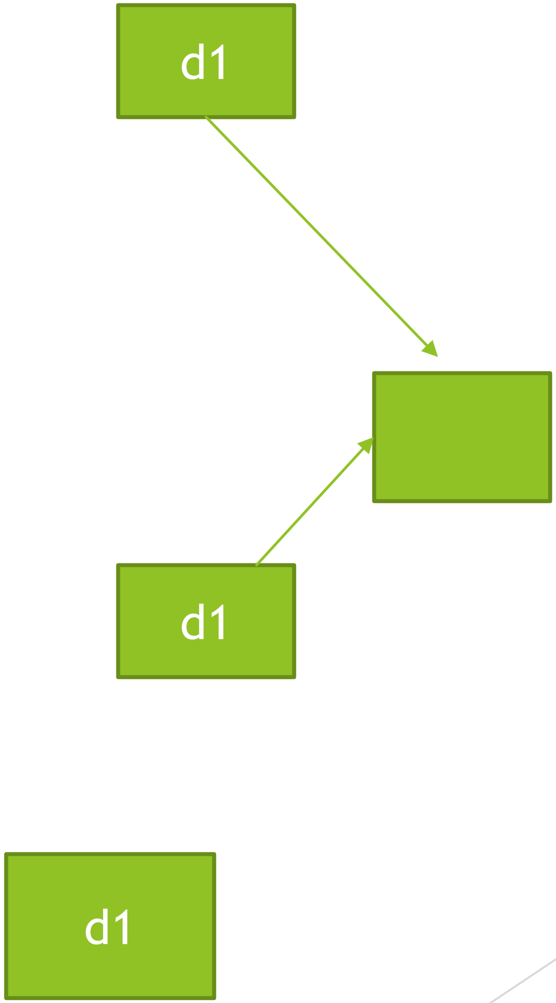
- Eg:

```
Employee e=new Employee()
e=new Employee()
```

In this example two objects are created,but after the second object is created the first one would have lost it’s reference and hence becomes eligible for auto deallocation.

What happens here? Will gc() come into pic?

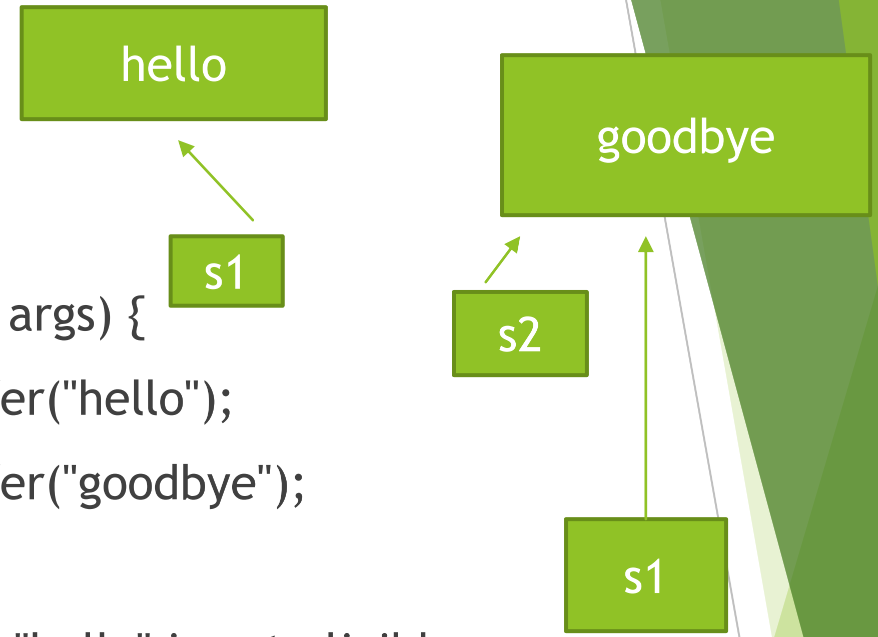
```
class Demo{
   static void m(Demo d1)
   {
    d1=new Demo();
   }
   p..s..v..main(..)
   {
    Demo d1=new Demo();
    m(d1);
    d1=null;
..
```



- Scenario 1:

- 1.public class GarbageTruck {
- 2. public static void main(String [] args) {
- 3. StringBuffer sb = new StringBuffer("hello");
- 4. System.out.println(sb);
- 5. // The StringBuffer object is not eligible for collection
- 6. sb = null;
- 7. // Now the StringBuffer object is eligible for collection
- 8. }
- 9. }

scenario2



hello

s1

goodbye

s2

s1

- class GarbageTruck {
- public static void main(String [] args) {
- StringBuffer s1 = new StringBuffer("hello");
- StringBuffer s2 = new StringBuffer("goodbye");
- System.out.println(s1);
- // At this point the StringBuffer "hello" is not eligible
- s1 = s2; // Redirects s1 to refer to the "goodbye" object
- // Now the StringBuffer "hello" is eligible for collection
- }
- }

Study…

```
import java.util.Date;
public class GarbageFactory {
public static void main(String [] args) {
Date d = getDate();
doComplicatedStuff();
System.out.println("d = " + d);
}
public static Date getDate() {
Date d2 = new Date();
StringBuffer now = new StringBuffer(d2.toString());
System.out.println(now);
return d2;
}
}
```

Forcing Garbage Collection

- The first thing that should be mentioned here is that, contrary to this section's
- title, garbage collection cannot be forced. However, Java provides some methods
- that allow you to request that the JVM perform garbage collection.
- The simplest way
- to ask for garbage collection (remember—just a request) is
- System.gc();

Object Life Cycle

Garbage Collection

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