Java Concept 61

- While overridden finalize() method
  - Can not be private , default
  - Can be protected , public
- Signature of finalize() method in Object class

```
protected void finalize throws Throwable
```

```
1 //Error
2 class Java
3 {
4   private void fianlize()
5   {...}
8 }
```

```
1 //Error
2 class Java
3 {
4   void fianlize()
5   {...}
8 }
```

```
1 //No Error
2 class Java
3 {
4   public void fianlize()
5   {...}
8 }
```

```
1 //No Error
2 class Java
3 {
4   protected void fianlize()
5   {...}
8 }
```
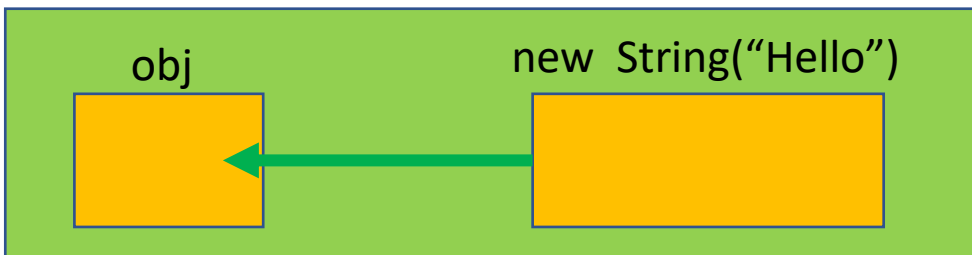
What is Garbage Collector

- Garbage collector is called by JVM to destroy Unreachable objects
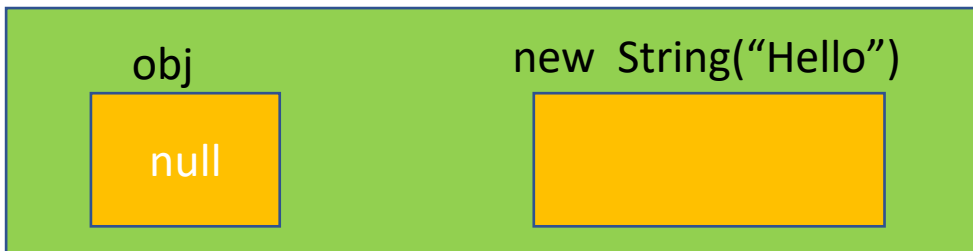
Working of Garbage Collector

```
class JavaConcept {
  public static void main(String args[])
  {
        //Line 1
        String obj = new String("Hellow");
        //Line 2
        obj = null;
        //Line 3
  }
}
```

- At Line 1 , Object is created

obj | new String("Hello")

- At Line 2 , Object is Unreachable

obj — null | new String("Hello")

- At Line 3 , Gc is called and Object destroyed

obj — null

Ways to call Garbage collector

- Way 1 —> Called automatically by JVM at regular intervals

- Way 2 —> Request JVM to run Garbage Collector using methods
  - ***System.gc()***
  - Runtime.getRuntime().gc();

```java
class Java{
  public static void main(String args[])
  {
    Java obj1 = new Java();
    Java obj2 = new Java();
    obj1 = null;
    System.gc(); // Calling garbage collector
    obj2 = null;
    Runtime.getRuntime().gc(); // Calling garbage collector
  }
}
```

finalize() method

- Just before destroying an object, Garbage Collector calls *finalize()* method on the object
- finalize() method is present in Object Class
- we can override *finalize()* method

```
1   //making finalize method private
2   //Complile Error // No Run Error
3   class JavaConcept
4   {
5     public static void main(String args[])
6     {
7         JavaConcept obj = new JavaConcept();
8         obj = null;
9         System.gc();
10    }
11   private void finalize()
12     {
13         System.out.println("finalize method called");
14     }
15  }
```

run:
BUILD SUCCESSFUL (total time: 1 second)

Compile Error-attempting to assign weaker access privileges; was protected

```
1   //making finalize method default
2   //Complile Error // No Run Error
3   class JavaConcept
4   {
5     public static void main(String args[])
6     {
7         JavaConcept obj = new JavaConcept();
8         obj = null;
9         System.gc();
10    }
11    void finalize()
12     {
13         System.out.println("finalize method called");
14     }
15  }
```

run:
BUILD SUCCESSFUL (total time: 1 second)

Compile Error-attempting to assign weaker access privileges; was protected

```
1   //Making finalize method protected
2   // No Complie Error // No Run Error
3   class JavaConcept
4   {
5     public static void main(String args[])
6     {
7         JavaConcept obj = new JavaConcept();
8         obj = null;
9         System.gc();
10    }
11   protected void finalize()
12     {
13         System.out.println("finalize method called");
14     }
15  }
```

run:
finalize method called

```java
//making finalize method public
// No Compile Error // No Run Error
class JavaConcept
{
   public static void main(String args[])
   {
       JavaConcept obj = new JavaConcept();
       obj = null;
       System.gc();
   }
 public void finalize()
    {
         System.out.println("finalize method called");
    }
}
```

```
run:
finalize method called
```