Difference between ArrayList and Vector

ArrayList and Vector both implements List interface and maintains insertion order.

But there are many differences between ArrayList and Vector classes that are given below.

ArrayList	Vector
1) ArrayList is **not synchronized**.	Vector is **synchronized**.
2) ArrayList **increments 50%** of current array size if number of element exceeds from its capacity.	Vector **increments 100%** means doubles the array size if total number of element exceeds than its capacity.
3) ArrayList is **not a legacy** class, it is introduced in JDK 1.2.	Vector is a **legacy** class.
4) ArrayList is **fast** because it is non-synchronized.	Vector is **slow** because it is synchronized i.e. in multithreading environment, it will hold the other threads in runnable or non-runnable state until current thread releases the lock of object.
5) ArrayList uses **Iterator** interface to traverse the elements.	Vector uses **Enumeration** interface to traverse the elements. But it can use Iterator also.

Example of Java ArrayList

Let's see a simple example where we are using ArrayList to store and traverse the elements.

```
import java.util.*;
class TestArrayList21{
 public static void main(String args[]){

  List<String> al=new ArrayList<String>();//creating arraylist
  al.add("Sonoo");//adding object in arraylist
  al.add("Michael");
  al.add("James");
  al.add("Andy");
  //traversing elements using Iterator
  Iterator itr=al.iterator();
  while(itr.hasNext()){
   System.out.println(itr.next());
  }
 }
}
```

   Test it Now

Output:

```
Sonoo
Michael
James
Andy
```

Example of Java Vector

Let's see a simple example of java Vector class that uses Enumeration interface.

```java
import java.util.*;
class TestVector1{
 public static void main(String args[]){
  Vector<String> v=new Vector<String>();//creating vector
  v.add("umesh");//method of Collection
  v.addElement("irfan");//method of Vector
  v.addElement("kumar");
  //traversing elements using Enumeration
  Enumeration e=v.elements();
  while(e.hasMoreElements()){
   System.out.println(e.nextElement());
  }
 }
}
```

Test it Now

Output:

```
umesh
irfan
kumar
```

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