**2(c)** ArrayList and Vector both classes implement the List interface and implements dynamic array.

Key differences:

* ArrayList is not Synchronized but Vector is Synchronized as result Vector is Thread safe.
* ArrayList increments 50% of the current array size where Vector increments 100% essentially doubling the current array size if the number of elements exceeds its capacity.

**3(c)** Two Common way to achieve Synchronization are:

* Synchronize Method
* Synchronize Block

The Synchronize Block gives you more control and lets you specify the exact area of the code you need to synchronize and essentially improving the time efficiency.

**4(b)** There are Static and Non-Static Nested Class in a enclosing class. Non static nested class are also known as inner class.

* Static classes can’t access the non-static member of the enclosing class but the inner class can access them. Static class needs an object of the enclosing class to use any of the non static member.
* To make an instance of nested static class we don’t need and object of the enclosing class but for inner class we first need an object.