

## 2. ArrayList Class :: Inserting Elements

To insert a new element call the **void *add*(int *index*, *E e*)** method:

```
names.add(1, "Ann");
```

Note that "Ann" is inserted and becomes the element at index 1 while the elements at indices 1, 2, 3, ... are moved to become the elements at indices 2, 3, 4, ....

In general, if a new element is inserted at index  $i$  then the elements at indices  $i, i + 1, i + 2, \dots, \text{size}() - 1$  will be moved to indices  $i + 1, i + 2, i + 3, \dots, \text{size}()$  and the new size of the *ArrayList* will be  $\text{size}() + 1$ .

If *index* is equal to  $\text{names.size}()$  then *e* will be appended to the *ArrayList*—as if **boolean *add*(*E e*)** had been called. It is an error for *index* to be less than 0 or greater than  $\text{size}()$ .

## 2. ArrayList Class :: Removing Elements

To remove an element call the ***E remove(int index)*** method:

```
String s = names.remove(1);
```

*remove()* returns the element that was removed so *s* would be "Ann".

## 2. ArrayList Class :: Using the Enhanced For Loop with ArrayLists

To access each element of an ArrayList we can write a **for loop**:

```
for (int i = 0; i < names.size(); ++i) {  
    System.out.println(names.get(i));  
}
```

which will print:

```
Emily  
Bob  
Carolyn
```

This can also be accomplished using the **enhanced for loop**:

```
for (String name : names) {  
    System.out.println(name);  
}
```