

Florida International University

The following lab is designed to understand the class ArrayList. There are four parts to the lab. As you finish each part, show it to you lab instructor before moving on.

Part A.

Type this program and note the output.

```
import java.util.ArrayList;

class CheckArrayList
{
    public static void main(String[] arg)
    {
        ArrayList list = new ArrayList();

        display(list);
        list.add("A");
        list.add(0,"B");
        list.add(1, "C");
        list.add(new Integer(25));
        display(list);
    }

    static void display(ArrayList list)
    {
        System.out.println("The size of the list is " + list.size());
        System.out.println("The list is empty " + list.isEmpty());
        System.out.println();

        for (int i = 0; i < list.size(); i++)
        {
            Object o = list.get(i);
            if (o instanceof String)
                System.out.println("This object " + (String)o + " is a string ");
            else if (o instanceof Integer)
                System.out.println("This object " + (Integer)o + " is an integer ");
        }
    }
}
```

Part B. Add the following code to the class and note the output.

```
list.add("A");
list.add(0,"B");
list.add(1, "C");

display(list);

list.remove(1);
list.add("D");
list.get(2);
```

display(list);

Part C

To add a primitive data type, you must first create an object with that type, and then add that object to the array list. For instance to add 25 to the list, you must first create an integer object with it. That is,

```
Integer i = new Integer(25);  
list.add(i);
```

Add the following types to the list:

```
double x = 3.75;
```

```
char p = 'a';
```

display the list again.

Part D

Add the following line of code in the main method, after the statement: **list.add(1, "C");**

```
list.add(new Product("Chair", 249.99));
```

You must also define the class **Product**. That is:

```
class Product  
{  
    String name;  
    double price;  
  
    Product(String s, double p)  
    {  
        name = s;  
        price = p;  
    }  
  
    String getName()  
    {  
        return name;  
    }  
}
```

Write the necessary statement in the display method to determine if the object is of type person, and print the name of the product.