

ArrayList example with Java 5 updates

```
import java.util.*;

public class ArrayListDemo
{
    public static void main(String[] args)
    {
        String title = "ArrayListDemo";
        System.out.print(title + "\n");
        for( int j = 0; j < title.length(); j++ ) System.out.print("-");
        System.out.println();
        ArrayList<Object> myArrayList1 = new ArrayList<Object>();
        int i1 = 10; double d1 = 12.75; int i2 = 30; int i3 = 40; int i4 = 50;
        String s1="tapan"; double d2 = Math.PI;
        Student alpha = new Student("Kronk", 11, 2.5);
        myArrayList1.add(i1); myArrayList1.add(i2); myArrayList1.add(s1);
        myArrayList1.add(alpha);

        System.out.println("\nThe content of myArrayList1 is: " + myArrayList1);
        System.out.println("The size of an myArrayList1 is: " + myArrayList1.size());

        myArrayList1.set( 1, (i2*10) );
        myArrayList1.remove(0); myArrayList1.add( 0, (d1*3) );
        myArrayList1.add(i3); myArrayList1.add(i4);

        System.out.print("\nmyArrayList1:  ");
        showList( myArrayList1 );
        System.out.println();

        myArrayList1.add(d2);
        System.out.print("\nmyArrayList1:  ");
        showList( myArrayList1 );
        System.out.println();

        System.out.println("The size of an myArrayList1 is: " + myArrayList1.size());
        myArrayList1.remove(4);
        System.out.println("\nThe content of myArrayList1 is: " + myArrayList1);
        System.out.println("The size of an myArrayList1 is: " + myArrayList1.size());

        ArrayList<Integer> myArrayList2 = new ArrayList<Integer>();
        myArrayList2.add(3); myArrayList2.add(0,5); myArrayList2.add(1,10);
```

```

System.out.println("\nThe content of myArrayList2 is: " + myArrayList2);

System.out.println("myArrayList2.get(0).intValue() = " + myArrayList2.get(0));
System.out.println("myArrayList2.get(1).intValue() = " + myArrayList2.get(1));
System.out.println("myArrayList2.get(2).intValue() = " + myArrayList2.get(2).intValue());
int total = 0;
for (Integer i : myArrayList2) total += i;
System.out.println("\nThe total of integers in myArrayList2 is ==> " + total);

Student beta = new Student("Maleficient", 12, 3.8); Student gamma = new Student("Stromboli", 12, 3.2);
Student delta = new Student("Ursula", 9, 1.2); Student epsilon = new Student("Jafar", 10, 2.7);
ArrayList<Student> myClass = new ArrayList<Student>();
myClass.add(alpha); myClass.add(beta); myClass.add(gamma);
myClass.add(delta); myClass.add(epsilon);

System.out.println();
int sum = 0;
for (Student dude : myClass)
{
    System.out.printf( "%-12s %.1f\n", dude.getName(), dude.getGPA() );
    sum += dude.getGPA();
}
System.out.printf( "\n%-30s %-4.2f\n", "The average GPA of myClass is ",
                    (double)total/myClass.size() );

ArrayList<Object> copyOfmyArrayList1 = copyArrayList( myArrayList1 );
System.out.print("\ncopyOfmyArrayList1: ");
showList( copyOfmyArrayList1 );
System.out.println();
}

public static ArrayList copyArrayList( ArrayList<Object> list )
{
    ArrayList<Object> newList = new ArrayList<Object>();
    for( int k = 0; k < list.size(); k++ )
    {
        Object a = list.get(k);
        newList.add( a );
    }
    return newList;
}

```

```
public static void showList( ArrayList<Object> list )
{
    for( int k = 0; k < list.size(); k++ )
    {
        if( list.get(k) instanceof Student )
            System.out.print( ((Student)(list.get(k))).getName() + "\t" );
        else
        {
            if( list.get(k) instanceof Double )
            { System.out.printf("%-8.3f", list.get(k)); }
            else System.out.print( list.get(k) + " " );
        }
    }
}
```

OUTPUT

ArrayListDemo

The content of myArrayList1 is: [10, 30, tapan, Student@6a3960]

The size of an myArrayList1 is: 4

myArrayList1: 38.250 300 tapan Kronk 40 50

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The size of an myArrayList1 is: 7

The content of myArrayList1 is: [38.25, 300, tapan, Student@6a3960, 50, 3.141592653589793]

The size of an myArrayList1 is: 6

The content of myArrayList2 is: [5, 10, 3]

myArrayList2.get(0).intValue() = 5

myArrayList2.get(1).intValue() = 10

myArrayList2.get(2).intValue() = 3

The total of integers in myArrayList2 is ==> 18

Kronk 2.5

Maleficient 3.8

Stromboli 3.2

Ursula 1.2

Jafar 2.7

The average GPA of myClass is 3.60

copyOfmyArrayList1: 38.250 300 tapan Kronk 50 3.142