Martin Hynes – 16390836

Student.java

```
public class Student{//open class

	//define instance variables
	private String name;
	private long idNumber;

	public Student(){//open Constructor
		this.name = "unassigned";
		this.idNumber = 0;
	}//close constructor

	public Student(String Name, long ID){//open overloaded Constructor
		this.name = Name;
		this.idNumber = ID;
	}//close overloaded Constructor

	public void setName(String Name){//open setter
		this.name = Name;
	}//close setter

	public void setID(long ID){//open setter
		this.idNumber = ID;
	}//close setter

	public String getName(){//open getter
```

```
            return this.name;
        }//close getter

        public long getID(){//open getter
            return this.idNumber;
        }//close getter

        public String toString(){//open toString override
            return "Name: "+this.name+", ID: "+this.idNumber;
        }//close toString override
}//close class
```

StudentTest.java

```
import java.util.Scanner;
public class StudentTest{//open class

        //create Scanner Object for all classes
        public static final Scanner scan = new Scanner(System.in);

        public static Student[] create(){//open create method
            //take input for array length and create array
            System.out.print("How long would you like the array to be? ");
            int length = scan.nextInt();
            Student[] students = new Student[length];
            return students;
        }//close create method

        public static void populate(Student[] students){//open populate method
```

```
        for(int i=0;i<students.length;i++){//open for loop
                //take input for name and id and create student object
                System.out.print("\nInput Student "+(i+1)+" Name: ");
                scan.nextLine();
                String Name = scan.nextLine();
                System.out.print("Input Student "+(i+1)+" ID: ");
                long ID = scan.nextInt();

                students[i] = new Student(Name, ID);
        }//close for loop
}//close populate method

public static void display(Student[] students){//open display method
        System.out.println("----------");
        for(int i=0;i<students.length;i++){//open for loop
                //print out student name and ID for each element of array
                System.out.println("Student "+(i+1)+" Name: "+students[i].getName());
                System.out.println("Student "+(i+1)+" ID: "+students[i].getID());
        }//close for loop
        System.out.println("----------");
}//close display method

public static void main(String[] args){//open main method
        //create student array
        Student[] students = create();
        //populate and display array
        populate(students);
```

```
            display(students);

        }//close main method

}//close class
```

```
D:\Users\marti\Files\Programming\Java\OOP1\Assignment7>java StudentTest
How long would you like the array to be? 3

Input Student 1 Name: Martin Hynes
Input Student 1 ID: 16390836

Input Student 2 Name: John Doe
Input Student 2 ID: 123456789

Input Student 3 Name: Jane Doe
Input Student 3 ID: 987654321
---------------
Student 1 Name: Martin Hynes
Student 1 ID: 16390836
Student 2 Name: John Doe
Student 2 ID: 123456789
Student 3 Name: Jane Doe
Student 3 ID: 987654321
---------------
```

StudentTest2.java

```
//import java util

import java.util.*;

public class StudentTest2{//open class

        //create scanner object for all methods

        public static final Scanner scan = new Scanner(System.in);


        public static ArrayList<Student> create(){//open create method

                //create ArrayList of student objects

                ArrayList<Student> students = new ArrayList<Student>();

                return students;

        }//close create method


        public static void populate(ArrayList<Student> students){//open populate method
```

```
        //take input for length of arraylist
        System.out.print("Enter ArrayList length: ");
        int length = scan.nextInt();
        //for loop corresponds to length
        for(int i=0;i<length;i++){//open for loop
                //take input for name and id
                System.out.print("\nInput Student "+(i+1)+" Name: ");
                scan.nextLine();
                String Name = scan.nextLine();
                System.out.print("Input Student "+(i+1)+" ID: ");
                long ID = scan.nextInt();
                //create student object with inputted name and id
                Student x = new Student(Name,ID);
                //add object to list
                students.add(x);
        }//close for loop
}//close populate method

public static void display(ArrayList<Student> students){//open display method
        System.out.println("----------------");
        //for loop for ArrayList size
        for(int i=0;i<students.size();i++){//open for loop
                //get student object from each spot in ArrayList
                Student student = students.get(i);
                //print Name and ID of that student object
                System.out.println("Student "+(i+1)+" Name: "+student.getName());
                System.out.println("Student "+(i+1)+" ID: "+student.getID()+"\n");
```

```
            }//close for loop
            System.out.println("---------------");
        }//close display method

        public static void main(String[] args){//open main method
            //run create method to create ArrayList 'students'
            ArrayList<Student> students = create();
            //run populate and display methods on students
            populate(students);
            display(students);
        }//close main method
}//close class
```

```
D:\Users\marti\Files\Programming\Java\OOP1\Assignment7>java StudentTest2
Enter ArrayList length: 3

Input Student 1 Name: Martin Hynes
Input Student 1 ID: 16390836

Input Student 2 Name: John Doe
Input Student 2 ID: 123456789

Input Student 3 Name: Jane Doe
Input Student 3 ID: 987654321
---------------
Student 1 Name: Martin Hynes
Student 1 ID: 16390836

Student 2 Name: John Doe
Student 2 ID: 123456789

Student 3 Name: Jane Doe
Student 3 ID: 987654321

---------------
```