ArrayList

```java
import java.util.ArrayList;

public class Test {
    public static void main(String[] args){
        ArrayList <String> list = new ArrayList<>();

        // Adding items to arraylist
        list.add("String 1");
        list.add("String 2");
        list.add("String 3");

        // Access items
        String s1 = list.get(0);   // s1 = "String 1"
        String s2 = list.get(2);   // s2 = "String 3"

        // Passing arraylist to a function
        printList(list);

        // Remove specific item
        list.remove(2);
        // After remove, list = "String 1", "String 2"

        // Add to specific index
        list.add(1, "String 4");
        // After add, list = "String 1", "String 4", "String 2"

        // Chance item at specific index
        list.set(1, "String 5");
        // After set, list = "String 1", "String 5", "String 2"

        // Size of arraylist
        int size = list.size();  // size = 3

        // Clear the list
        list.clear();
        System.out.println(list.size());  // prints 0
    }

    public static void printList(ArrayList<String> mList){
        for(String s: mList)
            System.out.println(s);
    }
}
```

HashSet

```java
import java.util.HashSet;

public class Test {
    public static void main(String[] args){
        HashSet <String> set = new HashSet<>();

        // Add to hashset
        set.add("String 1");
        set.add("String 2");
        set.add("String 3");

        // Print size of hashset
        System.out.println(set.size());  // prints 3

        // Duplicate adding not allowed
        set.add("String 1");
        System.out.println(set.size()); // prints 3

        // remove an item from hashset
        set.remove("Stirng 2");

        // Check if hashset contains a specific element
        if(set.contains("String 3"))
            System.out.println("Found");     // Prints Found
        else
            System.out.println("Not Found");
    }
}
```

Sorting Arraylist

```java
import java.io.BufferedReader;
import java.io.FileReader;
import java.util.ArrayList;
import java.util.Collections;
import java.util.Comparator;

class Student implements Comparable<Student>{
    String name;
    int id;
    double cgpa;

    public Student(String name, int id, double cgpa) {
        this.name = name;
        this.id = id;
        this.cgpa = cgpa;
    }

    @Override
    public int compareTo(Student o) {
        return name.compareTo(o.name);
    }
}

public class Test {
    public static void main(String[] args){
        try {
            ArrayList<Student> students = new ArrayList<>();

            FileReader fr = new FileReader("students.txt");
            BufferedReader reader = new BufferedReader(fr);

            // Read the students data from a file
            String line;
            while ((line = reader.readLine()) != null){
                String [] parts = line.split(" ");
                String name = parts[0];
                int id = Integer.parseInt(parts[1]);
                double cgpa = Double.parseDouble(parts[2]);

                Student st = new Student(name, id, cgpa);
                students.add(st);
            }
```

```
            // Sort according to name
            Collections.sort(students);
            // printStudentData(students);


            // Sort according to cgpa
            Collections.sort(students, new Comparator<Student>() {
                @Override
                public int compare(Student o1, Student o2) {
                    if(o1.cgpa < o2.cgpa)
                        return -1;
                    else if (o1.cgpa > o2.cgpa)
                        return  1;

                    return 0;
                }
            });
            printStudentData(students);

            reader.close();
        }
        catch (Exception e){
            e.printStackTrace();
        }
    }

    public static void printStudentData(ArrayList<Student> mStudents){
        for(Student s: mStudents)
            System.out.println(s.name + " " + s.id + " " + s.cgpa);
    }
}
```