Files	Make or Given	Screenshot?
MoonBadData.txt	Given	
MoonGoodData.txt	Given	
MoonStudy.java	Make	
MoonStudyTest.java	Given	
MoonTest.java	Given	
Moon.java	Make	
MoonAttributes.java	Make	

```
-accepts file names at the command line
-one is a text file of the data, the other is an output file name
-data has a line of information about the moons
moons name (String); radius (double); density (double); distance from mars (double)
Moon.java
* Moon Object - Project 7
* An class that defines Moon objects
* Jackie Vishton
* version 11/13/2021
* CMSC255
*/
public class Moon {
   private String name;
   private double radius;
   private double density;
   private double distance;
   * defualt constructor
   public Moon () {
       name = "";
       radius = 0.0;
       density = 0.0;
       distance = 0.0;
   }
   * parameterized constructor
```

```
public Moon (String name, double radius, double density, double distance) {
       this.name = name;
       this.radius = radius;
       this.density = density;
       this.distance = distance;
   }
   // generate getters and setters
   * to string thing description
   public String toString () {
       String forUser = String.format("%s %.2f %.2f", this.name, this.radius, this.density,
       this.distance);
       return forUser;
   }
}
MoonAttributes.java
/*
* MoonAttributes Enumerated Type - Project 7
* an enum type that has the values radius, density and distance
* Jackie Vishton
* version 11/13/2021
* CMSC255
*/
public enum MoonAttributes {
   RADIUS, DENSITY, DISTANCE
}
MoonStudy.java
* Moon Study - Project 7
* A program that
* Jackie Vishton
* version 11/13/2021
* CMSC255
*/
import java.io.File;
import java.io.FileNotFoundException;
import java.io.PrintWriter;
import java.utili.Scanner;
```

```
import java.util.ArrayList;
public class MoonStudy {
    public static ArrayList<String> openFile (File inputFile) throws FileNotFoundExecption {
        ArrayList<String> forUser = new ArrayList<String>();
        Scanner in = new Scanner(System.in);
        while (in.hasNextLine()) {
            forUser.add(in.nextLine());
        }
        return forUser;
    }
    public static ArrayList<Moon> createObjects(ArrayList<String> lines) {
        ArrayList<Moon> forUser = new ArrayList<Moon>();
        for (int i = 0; i < lines.length; i++) {
            String [] temp = lines.get(i).split("\t");
            // code that catches if the doubles are negative or incorrect
            Moon moon = new Moon(temp[0], Double.parseDouble(temp[1]),
                 Double.parseDouble(temp[2]), Double.parseDouble(temp[3]));
            forUser.add(moon);
        return forUser;
    }
    public static double findMean(ArrayList<Moon> moons, MoonAttributes attribute) {
        for loop that goes through each numerical value for the attribute given and returns the avg
    }
    public static double findHighValue() {ArrayList<Moon> moons, MoonAttributes attribute) {
        same for loop as findMean but finds highest value
    }
    public static double findMeanMoon() {ArrayList<Moon> moons, MoonAttributes attribute, double
meanValue) {
        same for loop as findMean but finds value that is the closest to the mean value
        checks abs value of difference between them and compares
    }
    public static double findMeanMoon() {ArrayList<Moon> moons, MoonAttributes attribute, double
value) {
        same for loop as findMean but finds moons that have values that are below the value given are
        added to an array
    }
```

```
public static void outputToFile(String outputMessage, ArrayList<Moon> moons, PrintWriter out) {
    prints the message and the moons
}

public static void outputToFile(String outputMessage, Moon moon, PrintWriter out) {
    prints the message and the moon
}

public static void outputToFile(String outputMessage, double value, PrintWriter out) {
    prints the message and the double
}

public static void main(String[] args) {

PrintWriter and Scanner

openFile in try catch block

array list from open file is passed to createObjects

findMean() findHighValue() findMeanMoon() findLowestMoons()

writeOutData method / output to file method
}
```

}