

Final Product

```
run:
***** Welcome to the Titanic Statistical Application *****

Enter the number of the question you want answered. Enter 'Q' to quit the program :

1.      How many passengers were on the Titanic?
2.      What percentage of passengers perished on the Titanic?
3.      What percentage of passengers survived the sinking of the Titanic?
4.      What percentage of passengers survived for each of the three classes?
5.      What specific passengers who were less than 10 years old survived the sinking of the Titanic?
6.      For each letter in the alphabet, how many passengers last names started with that letter?
7.      What percentage of Men survived the sinking of the Titanic?
8.      What percentage of Women survived the sinking of the Titanic?
Q.      Quit the program

Enter your selection: 1

There were 1309 Passengers on the Titanic.

Enter the number of the question you want answered. Enter 'Q' to quit the program :

1.      How many passengers were on the Titanic?
2.      What percentage of passengers perished on the Titanic?
3.      What percentage of passengers survived the sinking of the Titanic?
4.      What percentage of passengers survived for each of the three classes?
5.      What specific passengers who were less than 10 years old survived the sinking of the Titanic?
6.      For each letter in the alphabet, how many passengers last names started with that letter?
7.      What percentage of Men survived the sinking of the Titanic?
8.      What percentage of Women survived the sinking of the Titanic?
Q.      Quit the program

Enter your selection: 2

61.8% of the Passengers on the Titanic Perished.

Enter the number of the question you want answered. Enter 'Q' to quit the program :

1.      How many passengers were on the Titanic?
2.      What percentage of passengers perished on the Titanic?
3.      What percentage of passengers survived the sinking of the Titanic?
4.      What percentage of passengers survived for each of the three classes?
5.      What specific passengers who were less than 10 years old survived the sinking of the Titanic?
6.      For each letter in the alphabet, how many passengers last names started with that letter?
7.      What percentage of Men survived the sinking of the Titanic?
8.      What percentage of Women survived the sinking of the Titanic?
Q.      Quit the program

Enter your selection:
```

Above is a window capture of me compiling and executing the completed program. I only showed the first two questions being answered by the program. However, I have thoroughly checked to make sure all of the options in the program work.

Test Plan

Firstly, I coded the program's Titanic class, and made sure to input all of the data from the titanic.txt into a 2d array. I coded the array input code in the Titanic's constructor so that it would sort the data into an array as soon as the Titanic class was constructed. I also made a default constructor class that would show an error if there was no command line argument when the program was executed.

```
43  //// Constructors ////
44
45  public Titanic() {
46      this.tStart = System.currentTimeMillis();
47      this.fileName = "";
48  }
49  public Titanic(String fileName) throws IOException {
50      this.tStart = System.currentTimeMillis();
51      this.fileName = fileName;
52      br = new BufferedReader(new FileReader(fileName));
53      array = new String[1309][6];
54
55      for (row = 0; row < array.length; row++) {
56          thisLine = br.readLine();
57          temp = thisLine.split("\\t", -1);
58          for (col = 0; col < array[row].length; col++) {
59              array[row][col] = temp[col];
60          }
61      }
62  }
63
64  //// End of Constructors ////
```

After coding the constructors, I then coded the different methods that the program would call. I also coded the menu items into separate methods in order to make the TestTitanic class much more efficient upon execution.

Pictured below

```

259  /// Graphics User Interface Methods ///
260
261  //getHeader Method
262  public String getHeader() {
263      String getHeader = {"***** Welcome to the Titanic Statistical Application *****"};
264      return getHeader;
265  }
266  //getMenu Method
267  public String getMenu() {
268      String getMenu = ("\n" +
269          "\nEnter the number of the question you want answered. Enter 'Q' to quit the program : " +
270          "\n" +
271          "\n1.\tHow many passengers were on the Titanic?" +
272          "\n2.\tWhat percentage of passengers perished on the Titanic?" +
273          "\n3.\tWhat percentage of passengers survived the sinking of the Titanic?" +
274          "\n4.\tWhat percentage of passengers survived for each of the three classes?" +
275          "\n5.\tWhat specific passengers who were less than 10 years old survived the sinking of the Titanic?" +
276          "\n6.\tFor each letter in the alphabet, how many passengers last names started with that letter?" +
277          "\n7.\tWhat percentage of Men survived the sinking of the Titanic?" +
278          "\n8.\tWhat percentage of Women survived the sinking of the Titanic?" +
279          "\nQ.\tQuit the program" +
280          "\n" +
281          "\nEnter your selection: ");
282      return getMenu;
283  }
284  //getExit Method
285  public String getExit() {
286      String getExit = {"Thank you for trying the Titanic Program!"};
287      return getExit;
288  }
289  //getTimer Method
290  public String getTimer() {
291      String getTimer = ("\n" +
292          "\nElapsed time in seconds was: ");
293      return getTimer;
294  }
295  //getNoArgs Method
296  public String getNoArgs() {
297      String getNoArgs = ("\n" +
298          "\n There was an Error!" +
299          "\n" +
300          "\n You must have use a commandline argument when launching this program.");
301      return getNoArgs;
302  }
303
304  /// End of Graphics User Interface Methods ///

```

Then, I finally coded the TestTitanic class, using a simple command line argument check, while loop, and if else selection statements. I used the java.util.Scanner to detect which character the user was inputting.

Lastly, I added two more questions to the program. Both questions relating to the survival percentage of the men and women aboard the Titanic. But, after all of that, we are then left with the Final Product.