Part A: Planning

The Scenario:
The client and advisor is Sean Hoyt, a radiation safety officer at Riverside Hospital in Dublin, Ohio. Currently Mr. Hoyt has to manually search through and compare customer data collected from different scans done at the hospital. This manual solution is extremely time consuming, and it does not provide a physical graph or data point that could be shown to clients. Creating normal distribution curves for hundreds of data points could be done by a computer which would help him greatly. The program would help him reduce the time spent on this process, and it would also provide evidence in graphical form to use in presentations and explanations of this data. Mr. Hoyt is a perfect fit for a client because he requires a program that I would be able to code and provides a challenge for my coding skills.

Proposed Solution
The proposed solution is a computer program that can take in an excel file from the user and match the data from said excel file with the data from a benchmark excel file. This program would meet the same requirements for testing as the human procedure, so it would only judge against the benchmark when at least ten data points are created during that quarter. Because not all files will match up perfectly with the benchmark data, best fit data should be provided in this case. When the data from a customer's excel file exceeds the 75th percentile mark or is lower than the 25th percentile, the data point will be visually flagged for the user. The program will graph the benchmark data with the customer data point visible. Being able to hide any one of the data points is a feature that is desired by the user but not required. Normal distribution will be assumed when graphing. The program should be able to run on a Windows operating system, and the data required to run the program effectively will be provided by the user upon operation. This program would prove to be an effective solution due to the fact that it would be able to compare many datasets at once. This would save Mr. Hoyt lots of time which he could spend on other tasks at the hospital. Reducing human error when comparing data is another benefit of this program.

Interview with Client on Saturday, January 16th

Q. If the data does not match up with any of the benchmarks directly, what should the program do?
A. In this scenario, the program should match up the data with the best fit benchmark.

Q. How should the user be able to choose which data sets are going to be compared?
A. The user should be able to select the appropriate data set from a drop down menu.

Q. Should the graph of the data be saved to the users computer if selected by the user?
A. No, screenshots of the graph would fit needs better.
Q. What should happen if the two data sets do not match each other (i.e. scans of different body parts)?
A. The program should graph the data anyhow.

Success Criteria

- The data is accurately and clearly graphed for the client to see.
- The user should be able to select which sets of data that will be compared
- The program should alert the user when an outlier is detected.
- The program is easy to use and understand.