

## Criterion B: Design

### Inputs and Outputs

- Filepath for importing data
- Clicking buttons/checking boxes for data
- Output of organized data

### UI Wireframe

The wireframe is titled "Data Analyzer" in the top-left corner. It features a large, rounded rectangular area on the right side labeled "JTable Object for Displaying Data". On the left side, there are several input fields and buttons. At the top left is a large rounded rectangle labeled "Series of check-boxes with name of each column". Below this are two smaller rounded rectangles labeled "Column to sort by" and "Column to group by". At the bottom left is a rounded rectangle labeled "Advanced commands - WHERE statement to append, 5-var stats, and mean/standard deviation calculations". To the right of this is a small rounded rectangle labeled "GO button".

Data Analyzer

Series of check-boxes with name of each column

Column to sort by

Column to group by

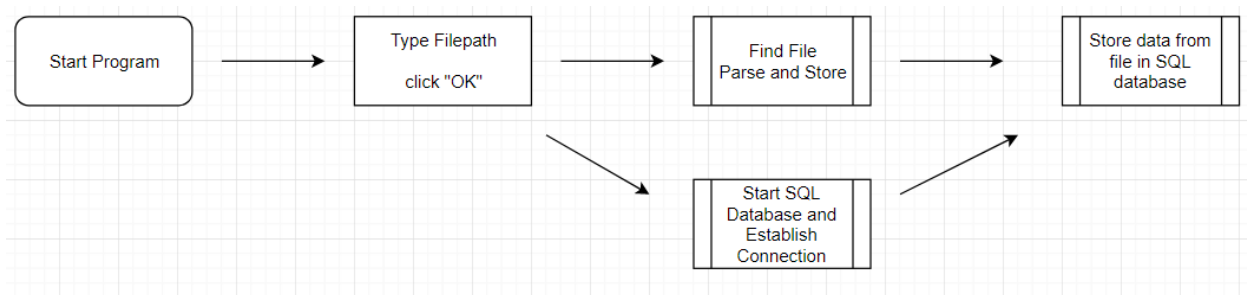
Advanced commands - WHERE statement to append, 5-var stats, and mean/standard deviation calculations

GO button

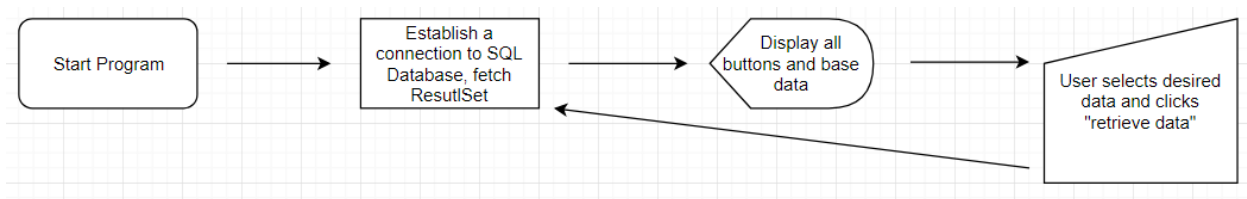
JTable Object for Displaying Data

## System Flowcharts

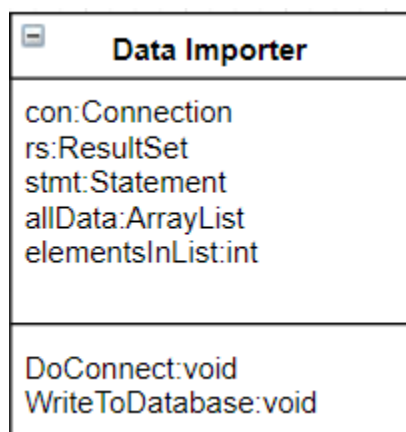
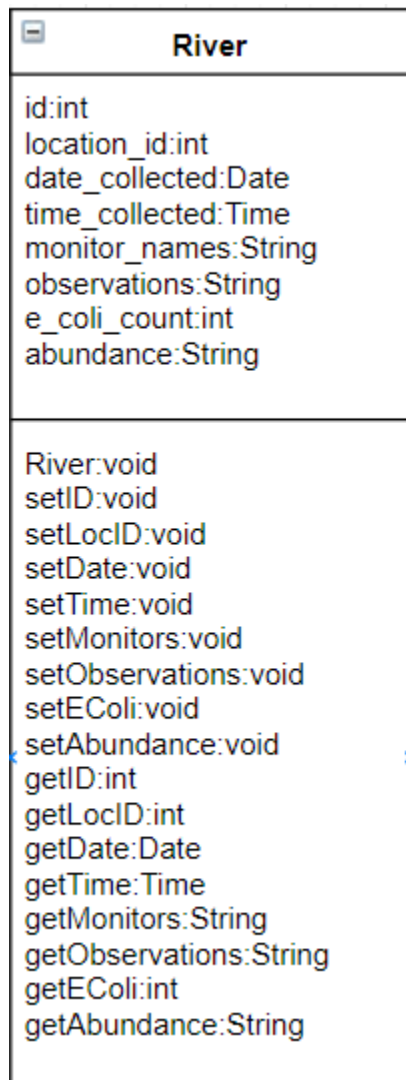
### DataImporter

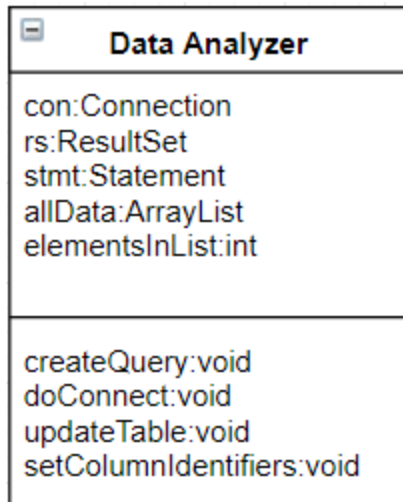


### DataAnalyzer



## UML Diagrams





### Pseudocode for a Key Algorithm

```

public void mean (ArrayList<Integer> dataToAnalyze) {
    double mean;
    int total = 0;
    for loop through dataToAnalyze {
        add each element to total
    }
    mean = total divided by size of arrayList
    double totalStDev = 0;
    for loop through dataToAnalyze
        add the absolute value of each element divided by the mean
    }
    Divide the totalStDev by size of ArrayList
    Convert to String using DecimalFormat
    Show a message to the user with the mean and standard deviation
}

```

## Test Plan

- Add 2,000 duplicate entries and check for errors in importing
- Attempt to add a malicious WHERE command to the end of a statement
- Try all possible outcomes of checkboxes