Railroad Signaling Block Design Tool

Kenneth Truex – [ktruex2012@my.fit.edu](mailto:ktruex2012@my.fit.edu)

Zachary McHenry – [zmchenry2011@my.fit.edu](mailto:zmchenry2011@my.fit.edu)

Christopher Diebold – [cdiebold2012@my.fit.edu](mailto:cdiebold2012@my.fit.edu)

Chad Mason – [cmason2011@my.fit.edu](mailto:cmason2011@my.fit.edu)

**Faculty Sponsor**

Phillip Bernhard – [pbernhar@fit.edu](mailto:pbernhar@fit.edu)

**Progress of current milestone**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Task | Completion % | Kenneth Truex | Christopher Diebold | Chad Mason | Zachary McHenry | To Do |
| Parsing the Database | 100% | - | 50% | 50% | - |  |
| Do a GUI Mockup and Present to GE | 100% | 50% | - | - | 50% |  |

**Summary of Accomplished Tasks for Milestone 2**

Parsing the Database:

Take our skeleton infrastructure of a database and add to it the functionality of information retrieval. Set it up so that the user can enter query commands and actually retrieve information stored in the database.

Do a GUI Mockup and Present to GE:

Take our design documents of our GUI that we created in Photoshop and implement it into C# code. After completing the implementation, we will present it to Dan Ballesty for review and critique.

**Summary of Contribution of Each Team Member**

Ken: Currently modifying the algorithms used to calculate Safe Breaking Distance and Headway/Runtime performance to read in values from a SQL database.

Chris: For this milestone I took the data that GE gave us in an excel spreadsheet and laid it out as an entity relationship diagram. I then presented it to GE before inserting the data. After several revisions I was able to get GE approval on how it should look. Then came the process of inserting the 9 spreadsheets of data into the database. I also created the connection and basic query classes for the database on the server. Currently working on caching the queries to be loaded at program execution and creating the views for the user input. Also I have to finish generating the SQL queries used in algorithms for calculating the 5 requirements.

Chad: Took the Photoshop designs from Zach and began implementing them into a Windows Form. Showed Dan Ballesty the Windows Form (and blew his mind).

Zach: Finished designing the GUI in Adobe Photoshop taking into account the feedback that we have received from Dan Ballesty. Have started putting the GUI into a Windows Form with Chad. Waiting for final approval from Dan Ballesty. Also need other engineers from GE to approve the GUI and provide feedback based upon what they are looking for and what they would like to accomplish with this software. After both the GE and our team have agreed upon the GUI we will begin to interface the GUI with Kenneth’s calculation algorithms and the database.

**Summary of Milestone 2 Tasks**

Database:

* We can connect and query database on the server (before it was local host).
* We have the tables laid out and 90% of the data that was received from GE is inserted into it.
* I have a list of queries that will be cached on initialization.

Issue: We waited on GE to give us a server access for the database and they still haven’t done so. We were able to get server access from FIT but it put us slightly behind on our testing. We have Safe Breaking Distance and headway calculations working in code by inputting the numbers form an excel spreadsheet that GE provided, but haven’t tested the algorithms by pulling from the database.

Issue: We are still deciding what the best way is to pull user input from the database. Whether for a given task say, Safe Breaking Distance calculations, if we want to use views to restrict what the user can see or just a precompiled query pulling that data tables and then searching for the proper calculations if it is already in the query history, if not calculate it and insert that data into database.

To solve both of these issues before moving forward with getting user input, we are going to consult with GE in what is the best way to tackle this problem given what they are going to do with this tool.

GUI:

* Restructured the home screen.
* Fixed the error when transitioning from the home screen to other views.
* Added separate views for the data and the track.

Issues: Still waiting on Data from GE so we know what kind of input the user would need to enter for each track layout and track segment.

**Plan for Milestone 3**

* Create some user forms that the user can input data into to calculate the 5 calculations in the requirements
* Finish the algorithms for the 5 calculations
* Be able to query database to see if the calculation was already done if not calculate and store the result in the DB.
* Motivate GE to give us the data to fill the database and
* Now that we have multiple tasks that can go on at once, we may need to start thinking about threads.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Task | Kenneth Truex | Christopher Diebold | Chad Mason | Zachary McHenry |
| Create the user forms | - | - | 50% | 50% |
| Finish the algorithms | 50% | - | - | - |
| Query the database | 50% | 50% | - | - |
| Look into multithreading | - | 50% | 50% | 50% |

**Sponsor Feedback on Each Task for the Current Milestone**

1. Parsing the Database:

2. Do a GUI Mockup and Present to GE:

Sponsor Signature: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Date: \_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Sponsor Evaluation**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Kenneth Truex | 0 | 1 | 2 | 3 | 4 | 5 | 5.5 | 6 | 6.5 | 7 | 7.5 | 8 | 8.5 | 9 | 9.5 | 10 |
| Christopher Diebold | 0 | 1 | 2 | 3 | 4 | 5 | 5.5 | 6 | 6.5 | 7 | 7.5 | 8 | 8.5 | 9 | 9.5 | 10 |
| Zachary McHenry | 0 | 1 | 2 | 3 | 4 | 5 | 5.5 | 6 | 6.5 | 7 | 7.5 | 8 | 8.5 | 9 | 9.5 | 10 |
| Chad Mason | 0 | 1 | 2 | 3 | 4 | 5 | 5.5 | 6 | 6.5 | 7 | 7.5 | 8 | 8.5 | 9 | 9.5 | 10 |

Sponsor Signature: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Date: \_\_\_\_\_\_\_\_\_\_\_\_\_