FEATURES ADDED

* Connection (network) between android studio and processing
* Make databases
* Redesign UI for android studio: switching from access levels to rooms

OPEN-SOURCE LIBRARIES USED:

262588213843476, “TCP Echo Client,” *Gist*. [Online]. Available: https://gist.github.com/HeptaDecane/dedc27e210ebd7e58c10eb38d6c26081#file-echoclient-java. [Accessed: 14-Nov-2022].

262588213843476, “TCP ECHO server java,” *Gist*. [Online]. Available: https://gist.github.com/HeptaDecane/5b39bd01b03ff8fb9c44c7ebf65d9728#file-echoserver-java. [Accessed: 14-Nov-2022].

“Android.nfc  :   android developers,” *Android Developers*. [Online]. Available: https://developer.android.com/reference/android/nfc/package-summary. [Accessed: 14-Nov-2022].

“Color  :   Android developers,” *Android Developers*. [Online]. Available: https://developer.android.com/reference/android/graphics/Color. [Accessed: 14-Nov-2022].

*CSVWriter (opencsv 5.7.0 API)*, 04-Sep-2022. [Online]. Available: https://opencsv.sourceforge.net/apidocs/com/opencsv/CSVWriter.html. [Accessed: 14-Nov-2022].

“FileWriter (Java Platform SE 7),” *FileWriter (Java Platform SE 7 )*, 24-Jun-2020. [Online]. Available: https://docs.oracle.com/javase/7/docs/api/java/io/FileWriter.html. [Accessed: 14-Nov-2022].

“Socket (Java Platform SE 7),” *Socket (java platform SE 7 )*, 24-Jun-2020. [Online]. Available: https://docs.oracle.com/javase/7/docs/api/java/net/Socket.html. [Accessed: 14-Nov-2022].

Diagram

Description automatically generated

This diagram represents the level 0 data flow diagram. Very simply it shows that three variables are sent from the employee to the android studio app. Which then processes those variables and sends them as well as another two variables to be stored in a database.

Diagram

Description automatically generated

This diagram shows the data flow from the next level perspective. Here we see that the data starts off with the employee, goes to Android Studio where two more variables are added. This information can either be sent to the physical door for information on opening or remining closed. Or the information gets sent to the database. It is also an option to query through the database to search for information regarding door activity.

OUPUT

LIMITATIONS

5 FEATURES

1. Exporting information from Android Studio to processing. Here, using Java Sockets, we can send information in the form of strings to Processing. This allows us to store that information to a locally saved database using Processing.
2. Writing information to an excel spreadsheet and editing the same excel spreadsheet to add on new data and not rewrite.
3. Wrote a custom java application to write the information for the role within the company onto each NFC cards
4. Reads data on NFC cards and decides what course of action to take based on the information received.
5. A virtual demonstration of how the employees would be provided access to rooms and how doors would open and close.