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CS-340 Client/Server Development

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The requirements of the project are to display information from the animals database in tabular form. In addition to the table display, there was a need to be able to filter the list for dogs that are preferred for three different kinds of rescue dogs. The three categories were “Water Rescue”, “Mountain Rescue”, and “Disaster Rescue”. There should also be an option to reset the filter. Some images of the application running are presented in the following figures.

A picture containing text

Description automatically generated

Figure Application Title Screen

Graphical user interface, application

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Figure Initial Run Data

Graphical user interface, text, application, table, email

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Figure Water Rescue Filter

Graphical user interface, text, application, email

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Figure Disaster Rescue Filter

Graphical user interface, text, application, email

Description automatically generated

Figure Mountain Rescue Filter

Graphical user interface, text, application

Description automatically generated

Figure Filter Reset

The main tools used in the development of this project were MongoDB, Jupyter Notebook, Python, and the mongo\_crud interface. MongoDB was an appropriate choice because it stores data as JSON documents, which makes presentation and iterating through data easier. Jupyter Notebook and Python are excellent choices because they make the development of the application easy, which also makes future adding features easy as well. The mongo\_crud interface was developed using Python and the pymongo library. These choices were ideal as they make accessing MongoDB servers very easy, and capable. Dash framework was used for the data representation, due to being just about what Dash was developed for.

Completion of the project took a few stages. First off was the general development of the data representation in the table, as well as development of the data access from the database. Next was the development of the filtering code. Finally was the development of the pie chart and geographical representation.

The only real challenges encountered were with working with and understanding Dash framework.