# CS 340 7-2 Project Two

## About the Project/Project Title

*This project aims to interact in a CRUD manner with an animal shelter database in MongoDB using Python, allowing users to insert new animals into the database, as well as view, update, and delete animals from its database. Users will be able to add new animals to the database using the insert function in the Python script, using 1 or multiple attributes. Users will also be able to update any of the existing instances of animals already in the database, as well as being able to remove any animals that have left the animal shelter. Also, users will be able to view all animals in the animal shelter database or view a specialized list of animals based on user input. There is also added functionality to filter the data by rescue type that filters out animals that do not match the recommended breed, sex, and age.*

*The process for creating this web-based application was started by creating the Python file that implemented the CRUD credentials to be able to access the data inside the database in order to add to, read, modify, or delete the data. The Python file then was put through testing to ensure that it was able to connect to the MongoDB database and access the data within it. Once the testing was completed, the development for the data table and interactive graphs and map was started. This part of the process proved to be a bit difficult to find the proper syntax for the various callbacks and widgets that were created for user manipulation of the data. Using the documentation for the Dash framework and the Plotly documentation for the graph were vital in ensuring that the interactive elements of the data table were functioning properly.*

## Motivation

*This project was created to help users organize and keep track of the animals housed in the animal shelter. The maintenance of this project is to ensure that it continues to work during future updates of the database management system and scripting languages. This program uses Python for the scripting and logic of the functions it is to implement. Python was chosen due to its high-level programming and speed. This program also uses MongoDB for its easily accessible and robust database management system. Using MongoDB is expected to allow for a quick and accurate representation of the data held in the database through an interactive data table. The data table, graph, and map were all created using the Dash framework. This framework allows for simple and effective data representation using various interactive elements to allow users to filter and sort data easily and efficiently.*

## Getting Started

*To get started with this application just start up the MongoDB database and use your user login information. Then open the python script and input the relevant data for the action you need performed.*

## Installation

*The software needed for this project is access to the MongoDB database management system and the most recent version of Python in Jupyter Notebook.*

## Usage

### Code Example

This shows that the code will allow users to create a new document for an animal and search for an animal by specific data.

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### Tests

*The code is set up to allow a user to input their login information and create a new instance of an animal document in the MongoDB database, as well as being able to print the data to ensure that it has been inserted correctly into the database.*

### Screenshots

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## Contact

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