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S o f t w a r e   E n g i n e e r
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Grazioso Salvare Rescue Dashboard

Key Skills: Dash, MongoDB, Data Visualization

- Created an **interactive web dashboard** using the **Dash framework** in Python, allowing users to filter and visualize rescue animal data from the **Austin Animal Center Outcomes dataset**.
- Implemented **dynamic filtering** for different rescue categories, including:
  - **Water Rescue**
  - **Mountain or Wilderness Rescue**
  - **Disaster or Individual Tracking**
  - **Reset Filters**.
- Integrated **dynamic data tables**, **pie charts**, and a **geolocation map** to display animal distribution across various regions.

MongoDB Database Design and CRUD Operations

Key Skills: MongoDB, PyMongo, Database Queries

- Developed a **MongoDB database** to store and manage animal outcome data efficiently.
- Used **mongoimport** to load datasets and executed complex queries, such as:
  - Listing companies founded after **2010**.
  - Identifying companies with offices in **California** or **Texas**.
  - Creating an **aggregation pipeline** to calculate the total number of offices by state.
- Built a **CRUD module** (`fullCRUD.py`) to manage database interactions, including:
  - **Create:** Inserted new animal records.
  - **Read:** Queried animals based on rescue type.
  - **Update:** Modified existing records based on user inputs.
  - **Delete:** Removed outdated or incorrect entries.

Interactive Dashboard Development

Key Skills: Dash, Plotly, Python, Jupyter Notebook

- Designed an intuitive user interface with the **Dash framework**, allowing users to interact with live data through filters and search functionality.
- Integrated **Plotly** visualizations for:
  - **Pie charts** showing breed distribution.
  - **Data tables** dynamically updating based on user-selected filters.
  - **Geolocation maps** displaying animal locations.

Testing, Deployment, and Documentation

Key Skills: GitHub, Jupyter Notebook, Debugging

- Developed and tested the dashboard in a **Jupyter Notebook** environment, ensuring seamless functionality across platforms.
- Published project documentation, including:
    - **README file** with setup instructions and project overview.
    - **Screenshots** demonstrating dashboard functionality and query results.
- Deployed the dashboard locally and documented steps for future deployment on production servers.

Key Outcomes and Impact

- **Efficient Data Management:** Used **MongoDB** to store and query rescue animal data, enabling real-time updates and filtering.
- **Interactive Dashboard:** Created a **Python Dash application** with dynamic visualizations for user-friendly data exploration.
- **Secure CRUD Operations:** Implemented robust **CRUD operations** for database management, ensuring data integrity and accuracy.
- **Scalable Design:** Ensured the dashboard could accommodate future datasets and additional filters as organizational needs evolve.