FMT_visualization_dashboard

Assignees	Ⓩ Zhu
Priority	Low
Due	@2024/10/01
Done	☐

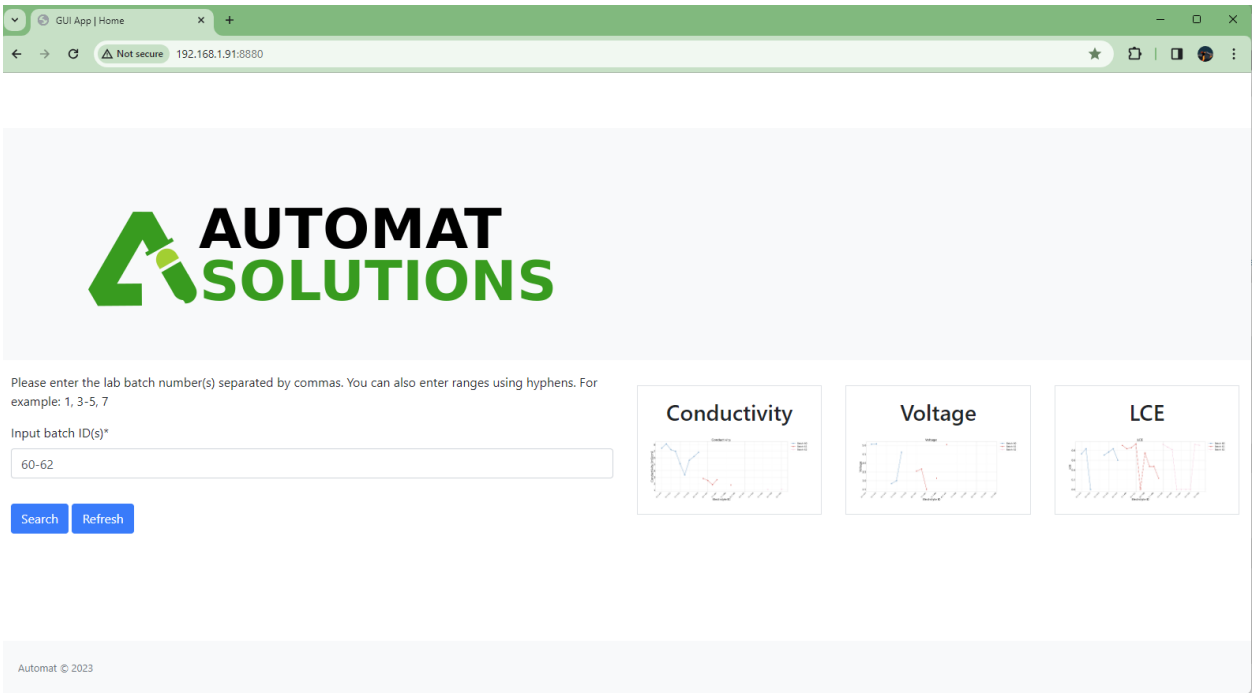
A web interface for data visualization and analysis of a database (running on the same server).

1. We have a database running on our server. The dashboard, which is running on the same server, visualizes the data in the database.
2. The server cannot be accessed through internet. Developer will have to connect to their own database.

Database. Each row represent a electrolyte recipe, and each column represent one piece of information for that recipe. The columns consist of **metadata**, **chemical amounts**, and **measurements**.

```
Index(['ID', 'batch', 'note', 'total_mass(g)',
       'method', 'project', 'experiment', 'Chemical1', 'Chemical
            'Chemical4' ... 'Chemical40', 'Conductivity', 'Volt
       'Initial Li efficiency', 'generation_id', 'Predicted Cond
       'Predicted Voltage', 'Predicted LCE'],
      dtype='object')
```

Current dashboard allows the user to see three measurements (conductivity, voltage, LCE) for the given ID’s.



General requirements/expectations.

1. The website should be transferrable and easily deployed.
2. Work with both SQL and/or MongoDB.
3. Make as much use of existing tools (Python based tools are preferred).
4. easy to maintain, readability.

Features:

Expect a more advanced visualization tool that can do the following beyond current capability:

1. Perform the current functionality.
2. Select recipe with **filters.** Filters can be defined by
    a. metadata. e.g. specify one or a range of ID.
    b. the amount of chemicals. e.g. solvents>0.7 & Li-salts < 0.2 & additives <0.1
    c. the value of measurements. e.g. LCE > 0.9

3. **plot** out the selected recipe.
    a. trend plot of a certain measurement. e.g. LCE vs ID (current dashboard but better visual)
    b. comparison plot of chemicals. e.g. parallel plots of all the chemicals. (see below)