Tech Assignment - 3 - API calls and results

Wednesday, August 20, 2025

11:33 AM

**The main brainbox API call functions (all from the new created main\_brainbox\_api.py file)**

**Note:**

* To make API call return more robust specifically for negative scenario (empty, invalid CSV file), created the API server return error message and missing info instead of just exception on purpose.

* For /query API, it is not part of this tech assignment requirement, I created just for integration test purpose, so I can use SQL query to check the DB which populated data from uploaded CSV.

**Sample API Test Returns thru "main\_brainbox\_api.py"**

1. **Call with valid CSV file**

* **API /validate call return:**

File validate successfully

{"message":"CSV file is valid.","columns":["bill\_id","meter\_id","usage\_type","building\_id","start\_date","end\_date"],"rows\_checked":3}

* **API /upload call return:**

File upload successful

200

{"status":"ok","stored":"local\_state/uploads/valid\_1.csv","crawler\_marker":"local\_state/glue/bills\_crawler\_\_1755703964\_\_d422afcfaf6f4849aaf392a9989528c3.marker","rows\_inserted":3}

* **API /query call return:**

Query successful

200

{"columns":["bill\_id","meter\_id","usage\_type","building\_id","start\_date","end\_date"],"rows":[["b0001",15,"water",101,"2025-02-01","2024-03-01"],["b0002",21,"electric",101,"2024-02-01","2024-03-01"],["b0003",103,"water",202,"2025-02-01","2025-03-01"],["b0003",105,"electric",202,"2025-02-01","2025-03-01"],["b0001",15,"water",101,"2025-02-01","2024-03-01"],["b0002",21,"electric",101,"2024-02-01","2024-03-01"],["b0003",103,"water",202,"2025-02-01","2025-03-01"],["b0003",105,"electric",202,"2025-02-01","2025-03-01"],["b0001",15,"water",101,"2025-02-01","2024-03-01"]],"rowcount":10}

1. **Call with invalid CSV file (missing column)**

* **API /validate call return:**

Status code: 422

{"error":"InvalidSchema","missing":["building\_id"],"extra":[]}

File validate failed

* **API /upload call return:**

422

{"error":"InvalidSchema","missing":["building\_id"],"extra":[]}

File upload failed

* **API /query call return: ok, Note - Query still pass if there is old successful upload test data exist in the system - may need to improve**

1. **Call with invalid CSV file (wrong datatype)**

* **API /validate call return:**

Status code: 422

{"error":"InvalidType","row":1,"field":"meter\_id","expected":"integer"}

File validate failed

* **API /upload call return:**

422

{"error":"InvalidType","row":1,"field":"meter\_id","expected":"integer"}

File upload failed

* **API /query call return ok, Note - Query still pass if there is old successful upload test data exist in the system - may need to improve**

1. **Call with empty CSV file (zero size)**

* **API /validate call return:**

Status code: 422

{"error":"InvalidSchema","missing":["bill\_id","meter\_id","usage\_type","building\_id","start\_date","end\_date"],"extra":[]}

File validate failed

* **API /upload call return:**

422

{"error":"InvalidSchema","missing":["bill\_id","meter\_id","usage\_type","building\_id","start\_date","end\_date"],"extra":[]}

File upload failed

* **API /query call return ok, Note - Query still pass if there is old successful upload test data exist in the system - may need to improve**

1. **Call with non-exist CSV file**

* **API /validate call return:**

The CSV file does not exist

* **API /upload call return:**

The CSV file does not exist

* **API /query call return:**

The CSV file does not exist