Project Part 2

https://github.com/NeuralFlux/energy-management-portal

Design Choices

I use a Flask backend with JavaScript and jQuery frontend for a simple yet robust setup. Flask connects to MySQL using PyMySQL and autocommit is set to false by default to enhance concurrency. Each insert, update, delete statement is committed.

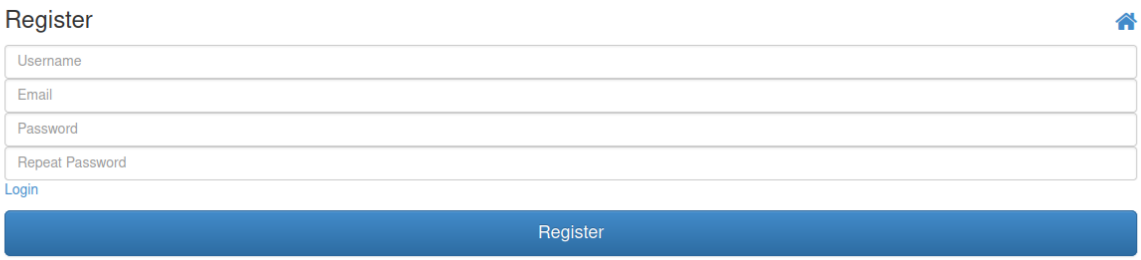
I use session variables to store the state of user login for convenience. Users' passwords are securely stored as SHA 256 hashes.

User Guide

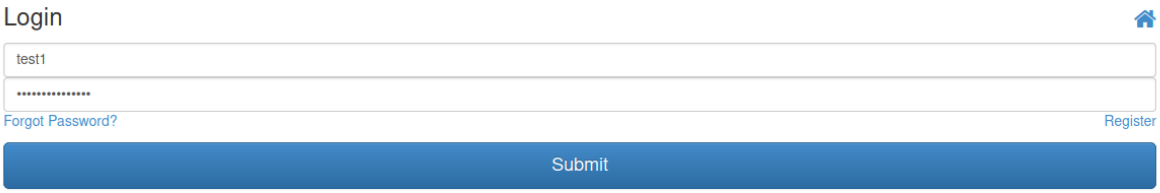
Route	Usage
/	Dashboard of a user
/register	Register a new account
/login	Login to use the portal, sets session variables
/logout	Logout from the portal, unsets session variables
/locations	Add, delete, and view your service locations
/devices	Add, delete, and view your registered devices
/location_consumption/<int:lid>	Track monthly energy usage for service location `lid`
/device_consumption/<int:dev_id>	Track monthly energy usage for the device `dev_id`
/price_history/<int:zcode>	Track monthly energy price for area bearing `zcode`
/energy_consumption	Track total energy consumption for a user based on all the types of devices they own

Interface

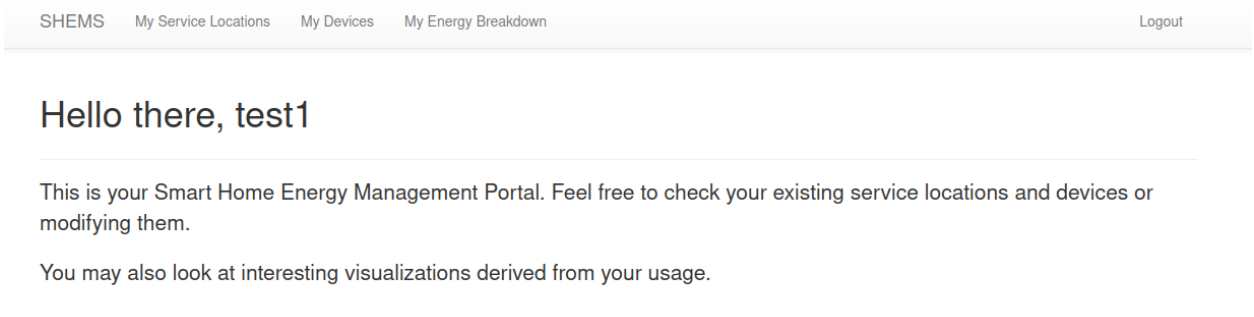
Registration



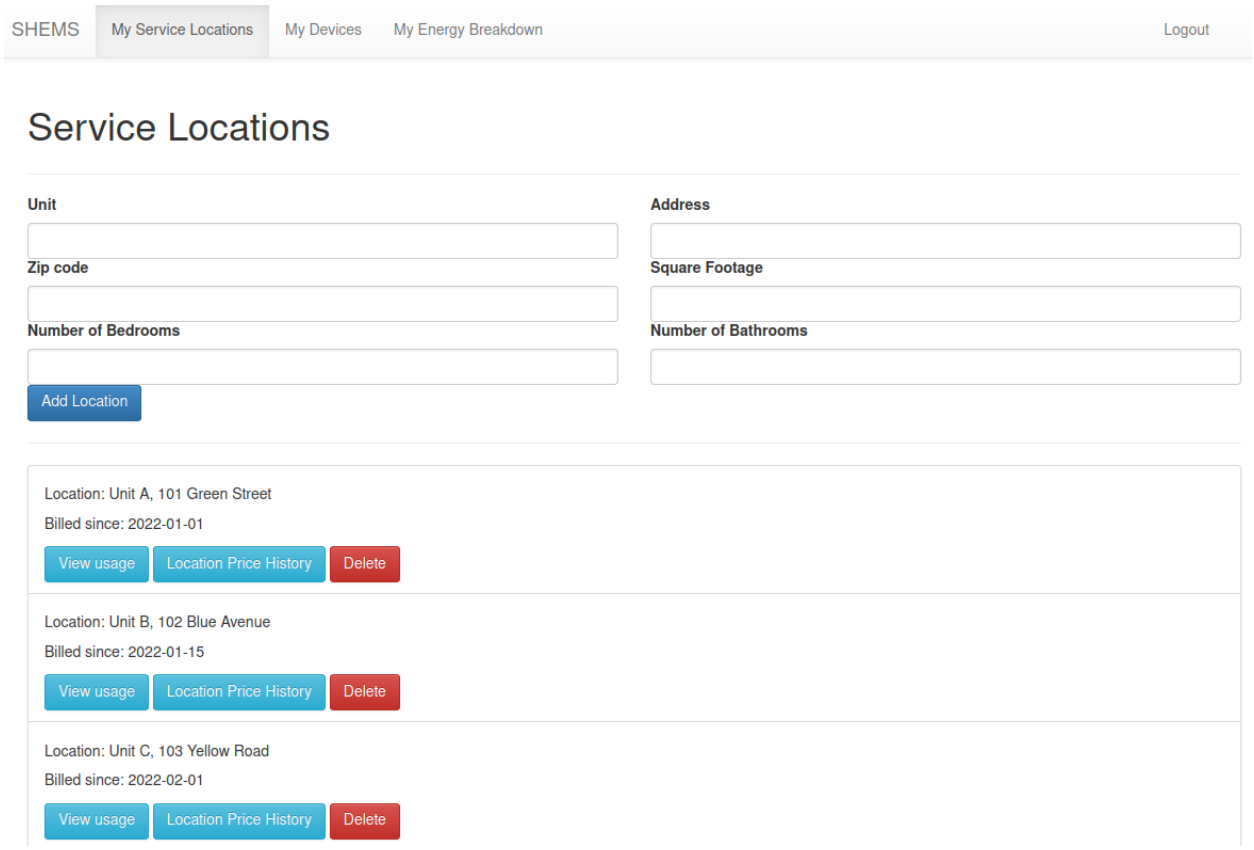
Login



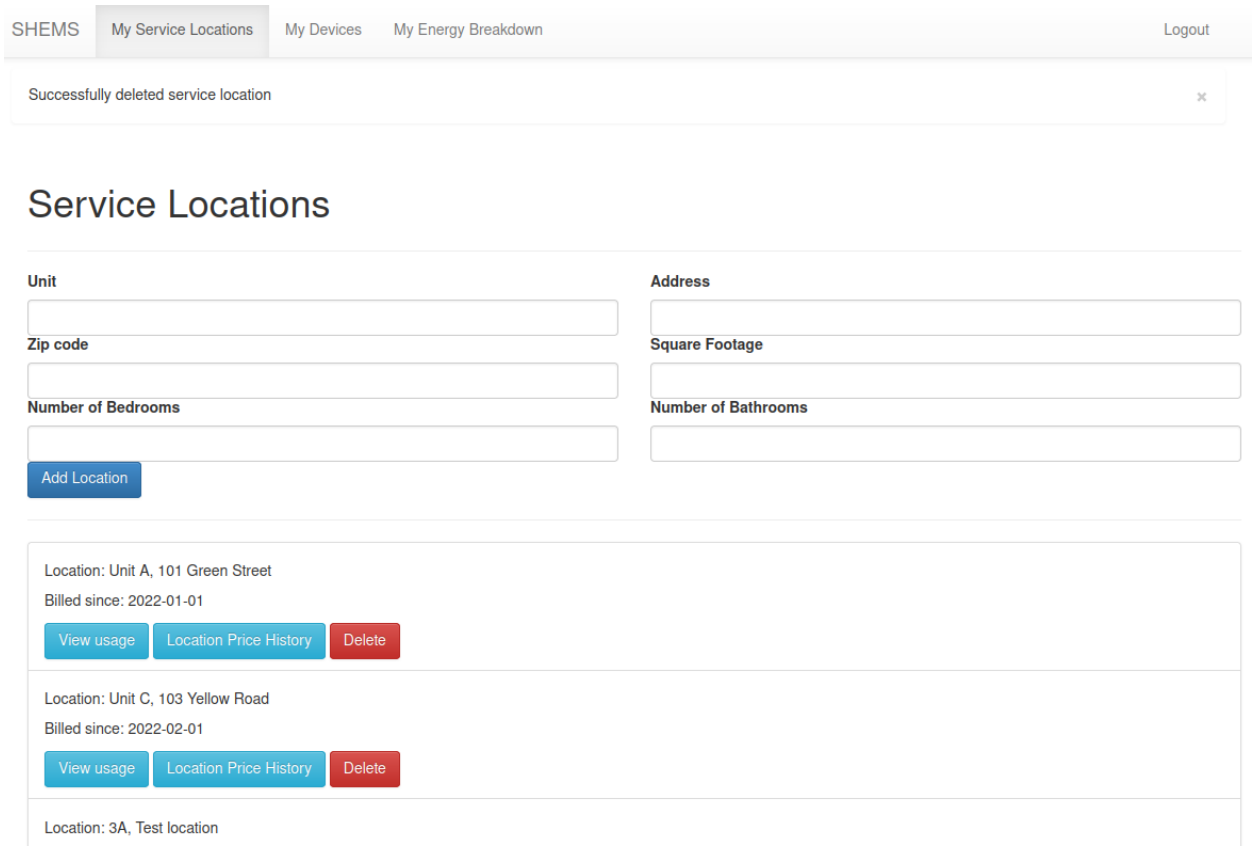
Dashboard



Service Locations



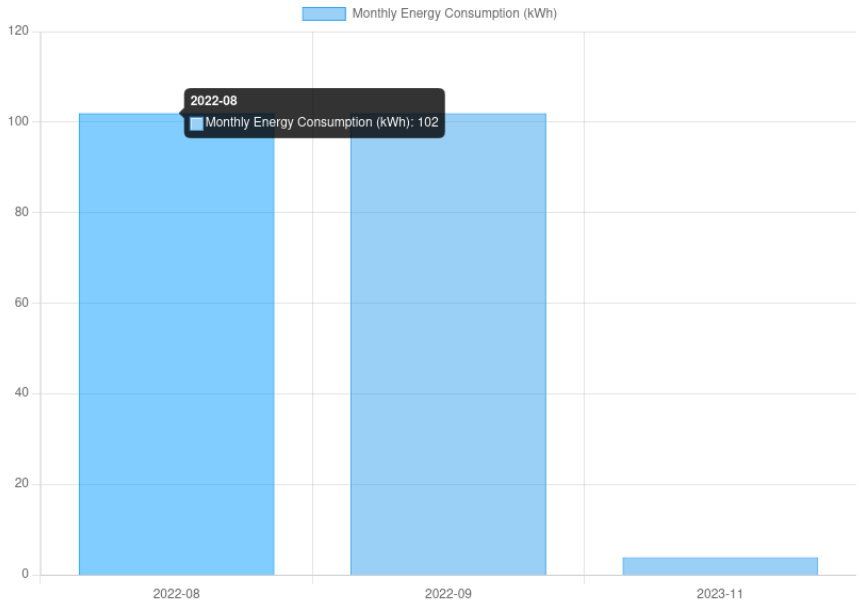
Location Deletion



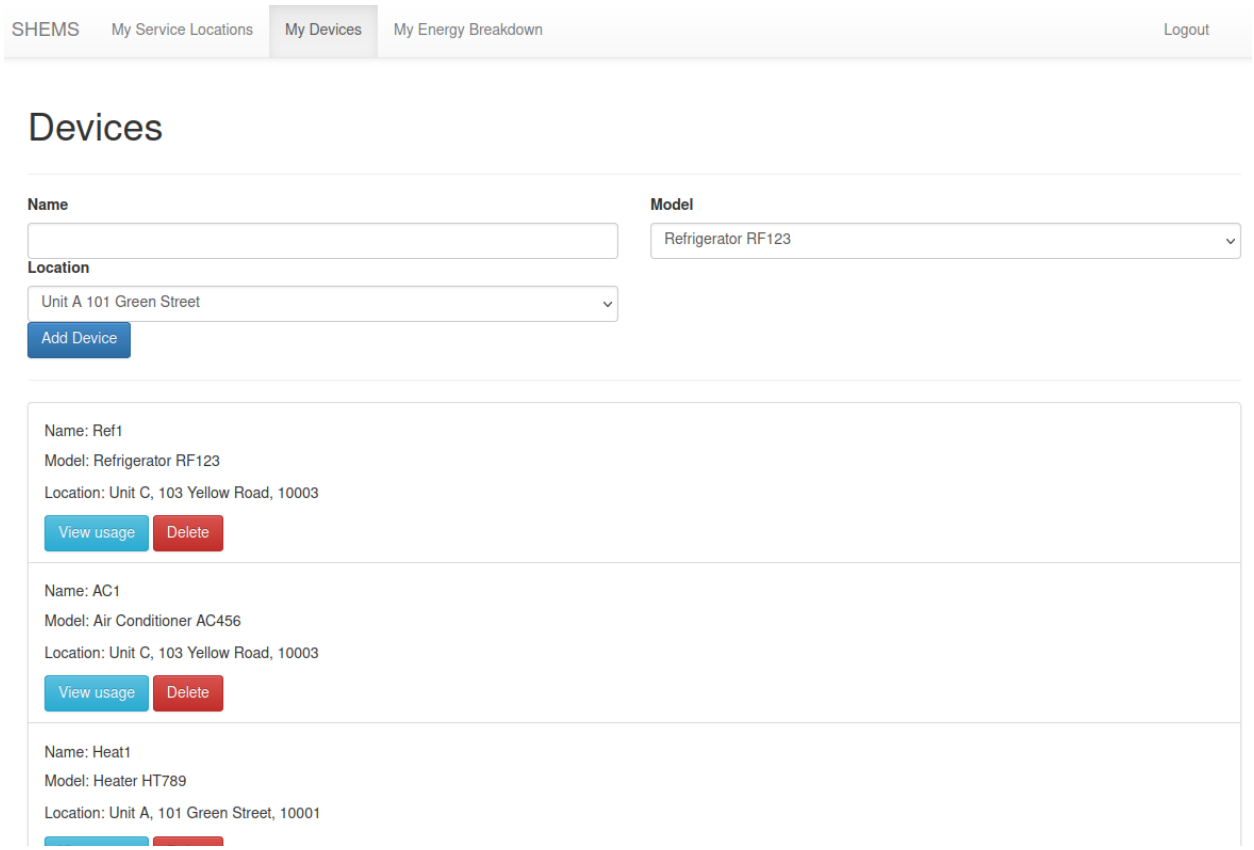
Monthly usage for service location

SHEMS My Service Locations My Devices My Energy Breakdown Logout

Monthly Consumption for Location 3



Devices list



Monthly usage for devices

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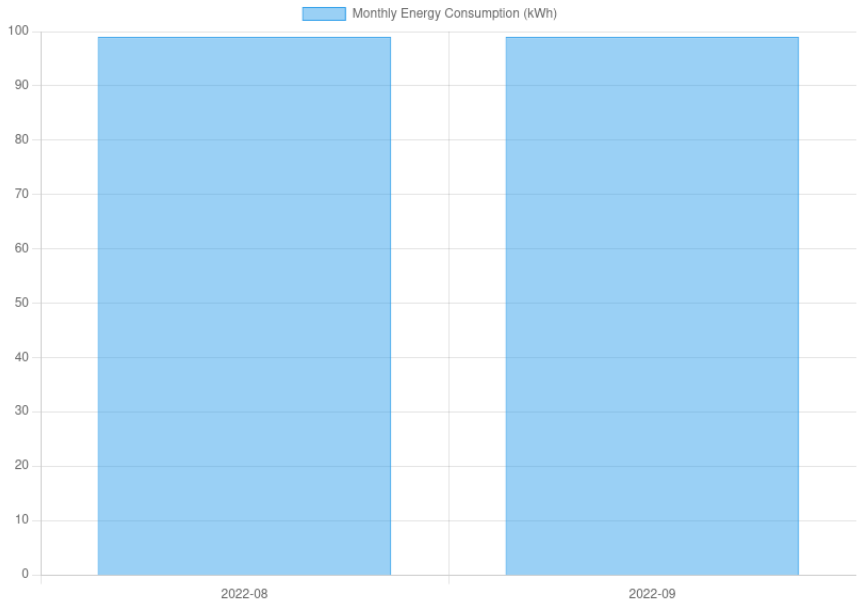
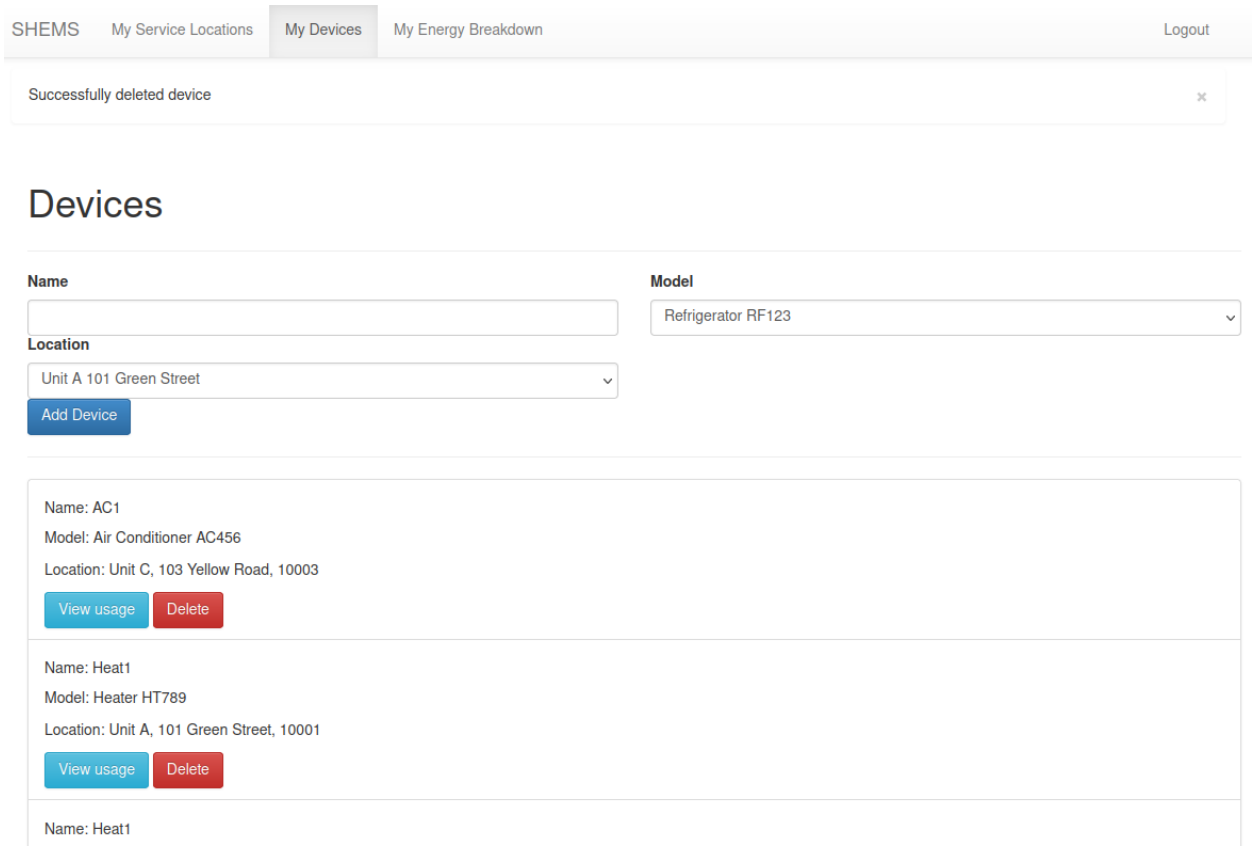
Monthly Consumption for Device 8



Deletion of devices



Price History for a zip code

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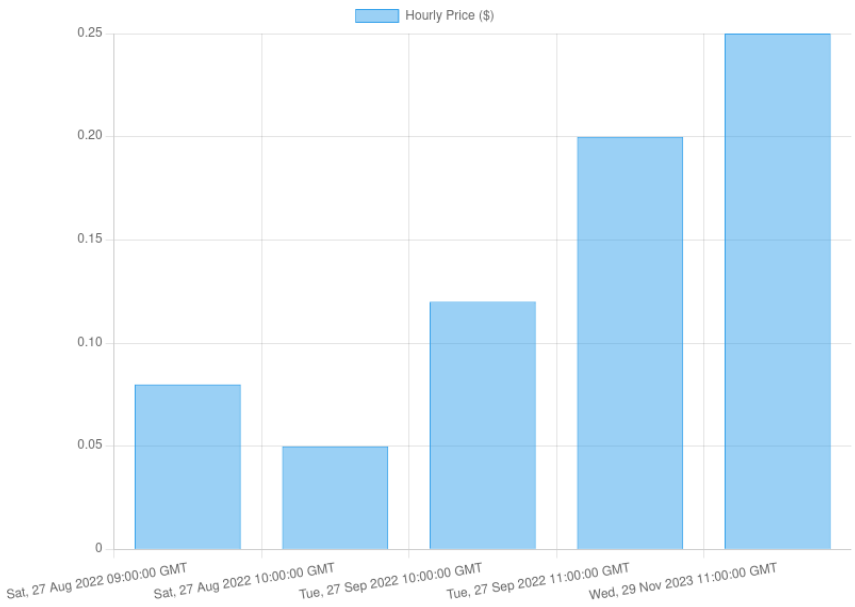
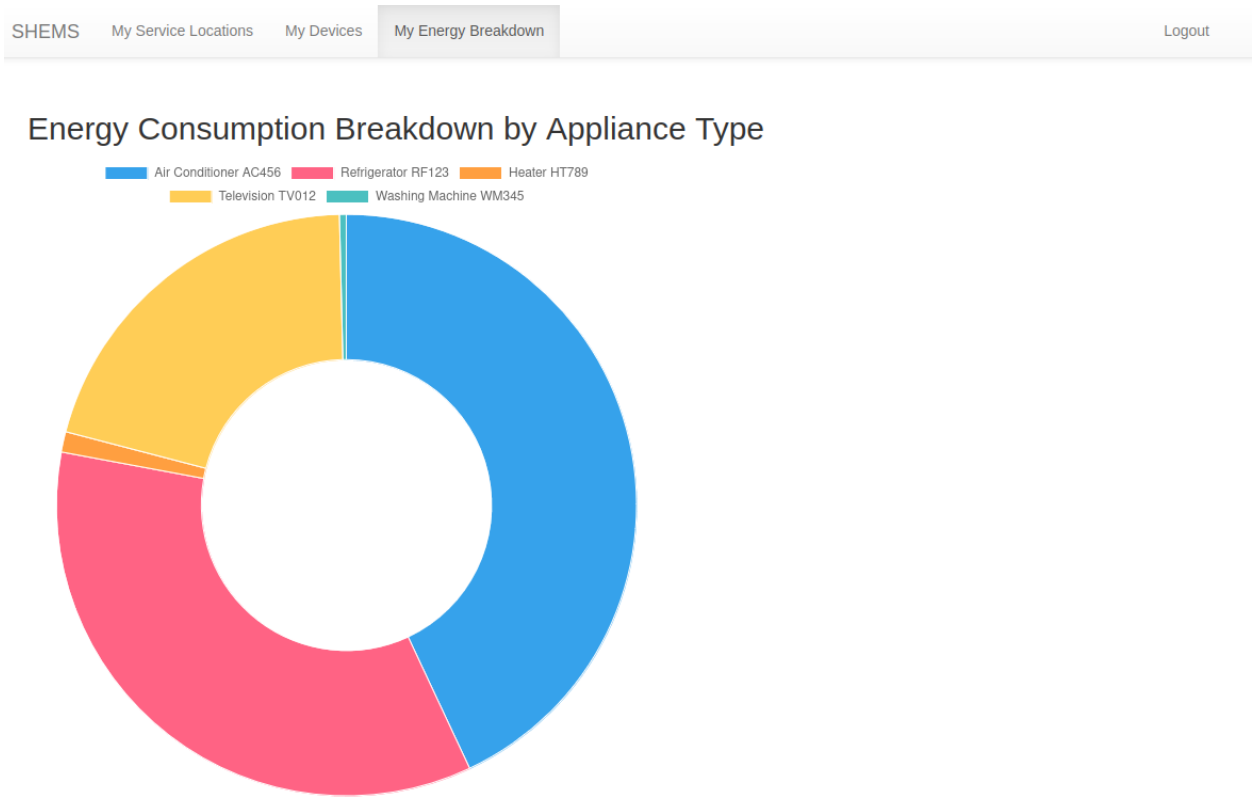
Energy Prices for Area 10003



Nature of total energy consumption categorized by type of device



Acknowledgement

I express my sincere gratitude to Prof. Suel and the TAs for the opportunity to learn full-stack development hands-on.