

User Manual

LEAP Data Management Tool

Service Learning Practicum 2014

Document Version 1.8

Table of Contents

- [1. System Summary](#)
- [2. Functionalities and their Procedures](#)
 - [2.1. Properties](#)
 - [2.1.1. General](#)
 - [2.1.2. Add New Property](#)
 - [2.1.3. Edit a Property](#)
 - [2.1.4. Destroy a Property](#)
 - [2.2. Gaps Report](#)
 - [2.3. Recordings](#)
 - [2.3.1. Delete a Recording](#)
 - [2.3.2. New Recording](#)
 - [2.4. Installed Measures](#)
 - [2.4.1. Installed Measure Types](#)
 - [2.4.2. Associate Installed Measure with a Property](#)
 - [2.5. Search](#)
 - [2.6. Filter](#)
 - [2.6.1. Filter Input](#)
 - [2.6.2. Filter Results](#)
 - [2.6.2.1. Exporting Filter Results](#)
 - [2.7. Analyze Data](#)
 - [2.8. Request Data](#)
 - [2.9. Uploading Data](#)
 - [2.9.1. Format of Data to be Uploaded](#)
 - [2.9.2. Information to be Uploaded](#)
 - [2.10. Manage Users](#)
- [3. Error Messages](#)
 - [3.1. No Test Out Date](#)
 - [3.2. Improper Filtering Query](#)
- [4. Conclusions](#)

1. System Summary

The LEAP Data Management and Visualization system is a website and database created to store and analyze the energy usage data of buildings. The website supports report generation, data visualization, data extraction, and advanced searching.

2. Functionalities and their Procedures

2.1. Properties

2.1.1. General

Navigate to the properties view by clicking on “Properties”, “All Properties” in the navigation bar or by clicking the “View” button under the properties description on the home page.

The complete list of all LEAP properties is displayed here. For each property, the customer unique ID, owner name, street address, state, zip-code, and finish date is displayed. From this view the user can click to “Edit” or “Destroy” a specific property.

Each name in the properties list is clickable and will redirect to the entire data-set available for that specific property.

2.1.2. Add New Property

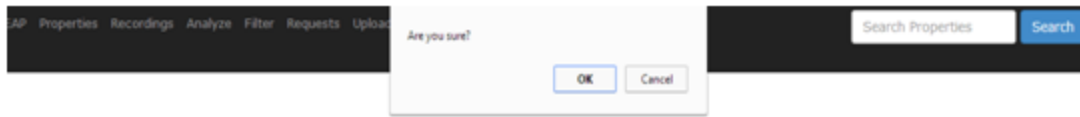
Add a new property to the system by clicking on “Add Property” in the navigation bar. In order for a property to be added to the system, the following fields must be filled in: customer unique, owner name, street address, city, state, and zip code. After clicking the “Create Property” button, the new property will have been added to the database, will be searchable, and can have more information added to it.

2.1.3. Edit a Property

Edit a property by finding the correct property in the Properties list and clicking on the “Edit” button. Here the owner name, address, test out date, account information, and other customer metadata can be updated. Click “Update Property” to save the changes and redirect to that customer’s report.

2.1.4. Destroy a Property

Clicking on “Destroy” in the Properties list will bring up a pop-up as displayed in the image below. Click “OK” to delete the property permanently from the system, or “Cancel” to keep the property.



LEAP Properties

Add New Property

-- Previous 1 2 3 4 5 6 7 8 9 ... 33 34 Next --

Customer Unique	Owner Name	Street Address	State	Zipcode	Finish Date		
0	Account Dummy	Invalid Street	VA	22902	2014-04-07	Edit	Destroy
03053X	Ridge & Lorraine Schulyer	112 Robinson Woods Dr.	VA	22903		Edit	Destroy

2.2. Gaps Report

The utility data for each property and utility type is displayed in table form on the Property Report if data exists for the property in view. This Gaps Report is color coded for easy analysis—missing data is colored red, normal data is colored green, and outliers in the data are colored yellow (example: any meter read of “0”).

If there is no Gaps Report displayed for a property, it means that the property does not have a test out date associated with it. To add a test out date, edit the Test Out Date field and click “Update Test Out Date.” This will refresh the page automatically after the system finds recordings that contain the data for twelve months pre and twelve months post the entered test out date. For example, if the entered Test out Date occurred in July 2012, the system will go back to July 2011 to find the first recording, and forward twelve months to look for recordings up to July 2013. The Test out Date must be entered for analysis to be done and for the recordings to be displayed.

The Meter Read date and number of days in the reading period is shown in the Raw Data table which shows a more detailed view of data in the Gaps Report. The Raw Data table is also displayed on the Property Report.

2.3. Recordings

The recordings view only exists to be a master list of all recordings in the system, and will rarely be used by the user. Access this view by clicking “Recordings” in the navigation bar. The table displays the account number, consumption, days in the month, read date, and the utility type id. Each recording can be viewed, edited, or destroyed.

2.3.1. Delete a Recording

From the Recordings view, a recording can be deleted by clicking on “Destroy.” The system will prompt the user with a flash message, asking “Are you sure?” If “yes” is selected, the Recording will be permanently removed from the system and will no longer be displayed in the associated properties report.

2.3.2. New Recording

To enter a single new recording, go to the associated properties report page. This can be done by finding the property in the properties list or by finding the property through the search functionality. At the bottom of the property page, fill in the following fields: Account Number, Read Date, Consumption, Days in Month, and Utility Type. Click “Save New Recording” to add the recording to the system.

2.4. Installed Measures

2.4.1. Installed Measure Types

Access the installed measure types by clicking on “Properties”, “Installed Measures” in the navigation bar or the “View” button under the Measures description on the Homepage. The installed measures types’ page displays the complete list of possible installed measures. Items can be added or edited in this list.

2.4.2. Associate Installed Measure with a Property

From the Property page, installed measures can be associated with the property in view by editing the fields in the “Associate an Installed Measure” section and selecting “Associate Measure”. Within the “Associate an Installed Measure” section, there is a drop down menu to select the installed measure and a free text field where the user can enter contractor data or other information. Once an installed measure is associated with a property, the type and comment will show up in the Installed Measures table for the property. Each property can be associated with multiple installed measures, and measures can unassociated with the property by hitting the “destroy” button.

2.5. Search

The system includes two search bars-- one in the navigation bar and another on the Homepage. Therefore search can be completed from anywhere in the application. Both search bars support auto-complete and will display all LEAP customers with a partial match for their first name, last name, or address. When an option in the list is clicked on, it will autofill the search bar with that customer. Click “Search” or press enter to have the selected customer’s report displayed.

2.6. Filter

2.6.1. Filter Input

Access the Filter view by clicking on “Filter” in the navigation bar on “Properties” dropdown, or the “View” button under the Filter description on the Homepage. Properties can be filtered based on zip-code, installed measures, and the test out date range. The test out date must be in the format MM/DD/YY. Enter the filtering parameters and click filter to shorten the list of properties displayed below to only show properties with the selected parameters. Filtering can be undone by clicking “Reset.”

2.6.2. Filter Results

The results of the filter are displayed in a paginated table below the filter options. Results of an original filter can be filtered on again by entering more information into the filtering options and selecting filter. Filtering can be undone by clicking “Reset.” Entering an invalid zip code, start date, or end date will bring up an error, and return filter results based on only the valid fields.

2.6.2.1. Exporting Filter Results

When a list of properties has been compiled through filtering that should have PRISM analysis completed on it, use either the “PRISM Report - Electric” or “PRISM Report - Gas” buttons to generate a usable report. This will download a CSV file which includes the selected properties in a PRISM ready format. Be sure that the Filter query that you have created is valid (no errors come up) before creating a PRISM report.

2.7. Analyze Data

Access the Analysis view by clicking on “Analyze” in the navigation bar or the “View” button under the Analyze description on the Homepage. Within the Analysis view, there are four different data sets that can be viewed: Dominion Virginia Power, Charlottesville Gas, Washington Gas, and Null Accounts. Each of these views includes the properties that have enough data to be analyzed—the data can be viewed by clicking on one of the three options available: Generate HTML View, Export to CSV, and Export to PRISM Format.

When Generate HTML View is selected, a paginated view of all properties with enough information to be analyzed is displayed. This table includes the Owner Name, Account

Number, and number of Meter Readings. The Owner Names can be clicked on to view the Property Report for that property.

Exporting to CSV will download a CSV file of all properties ready to analyze with the selected utility type. Exporting to a PRISM ready format will download a file that can be directly uploaded to PRISM for analysis.

2.8. Request Data

Access the Request Data view by clicking on “Requests” in the navigation bar or the “View” button under the Requests description on the Homepage. Within the Requests view, there are three different data sets that can be viewed: Dominion Virginia Power, Charlottesville Gas, and Washington Gas. View properties with missing data by clicking on Generate HTML View: this view displays the Owner Name, Account Number, Request Start Date, Request End Date, and the number of Meter Readings needed. This Requests Report can be exported as a CSV file which can then be sent to the appropriate utility company.

2.9. Uploading Data

Access the Upload page by clicking on “Upload” in the navigation bar or the “View” button under the Upload description on the Homepage. To upload electric data, click the “Choose File” button above the “Upload Electric” button, select the file, and click “Upload Electric.” To upload Gas data, click the “Choose File” button above the “Upload Gas” button, select the file, and click “Upload Gas.” After a file has been uploaded, click on the “Information to be Uploaded” button for a final review. When the information to be uploaded has been approved, click on “Insert All into Database” to add the entries into the system. See section 2.9.2 of this document for more information on the functionalities available in the “Information to be Uploaded” view.

The Uploads page also displays the file name, time of upload, and status of all files the system has processed. The most recent files appear at the top of the list.

Reference the figure below for more information on the Uploads page.

File has been uploaded successfully, check the uploaded files to see its processing status. X

← Upon upload, a status notification will appear to tell you if your upload was successful.

Upload

Processed Data

[Information to be Uploaded](#)

← This link will take you to your Stagings. After a file has been processed, its data will appear here, where you can make changes to it before committing the final upload.

Upload

No file selected.

↪ Choose the correct type for your upload. Choosing the wrong type will put the wrong type on the data when it's uploaded.

No file selected.

Current Uploaded Files

File Name	Status	Upload Date	Process Date	Uploaded by
test.txt	Not Processed	2014-04-07 14:17:14 UTC		Destroy

The status will change to processing if you have uploaded a valid csv, xls, and xlsx file. After a successful processing, it will change status to processed and you will be able to view your preliminary data in the Stagings area.

2.9.1. Format of Data to be Uploaded

The upload feature will process csv, xls, and xlsx files. Each type of file must be properly formatted, with the appropriate column headings, in order for the data to be uploaded to the system correctly. While the order of the column does not matter, be sure to get the names to match the Needed Header Names. The name associations are currently as follows:

General Name	Needed Header Name
Account Number (ID_BA)	AccountNumber
Consumption (AMT_KWH)	Consumption
Days in Month (DAYS_USED)	DaysUsed
Read Date (DT_READ)	ReadDate

2.9.2. Information to be Uploaded

Upon the file being processed, the preliminary data can be viewed by clicking on “Information to be Uploaded” under the “Processed Data” heading. This view displays the following columns for the Data Currently Staged for Upload: Account Number, Read Date, Consumption, Days in Month, and Utility ID. The data in this area is

editable through inline editing by simply clicking the data that should be changed in the table and typing in the new values. This allows for easy updates to the information before its final upload into the system. For convenience, there is also a “Remove All Data from Staging” button which removes all information displayed in the view without committing it to the actual data base. Upon examining the data, and finding it is correct, the user should hit the “Insert All Into Database” button which adds the data to the actual system and automatically associates it with the data in the rest of the system.

The system automatically does not upload duplicate data into the system. Any data associated with an unknown address will also not be uploaded into the system.

2.10. Manage Users

To get to the Manage Users view, click on Users and then Manage Users in the navigation bar. This view is where a new user can be created. If the user entered was successfully created, when the “Create Account” button is clicked, a flash message will be displayed that says the creation was successful. If the user was not able to be created, the flash message will state the reasons why the user was not successfully created.

On this page, it also shows the current list of all existing users. Each of these users can be destroyed from the system by any other existing user. To destroy a user, click the “Destroy User” button beside that email. A pop-up will come up asking “Are You Sure?” Click “Yes” to remove the user from the system.

3. Error Messages

3.1. No Test Out Date

This is a flash message to notify the user that the property in view does not have a test out date. This message can just be ignored, or the user can add a test out date to the property by editing the Test Out Date fields in the Properties view and selecting “Update Test Out Date”. A test Out Date must be entered in order for the utility data on the property to be displayed.

This property does not contain a listed test out date!



3.2. Improper Filtering Query

Improper Zip Code, Start Date, and End Date Format. ✕

A version of this message will come up in the filtering view if the zip code, start date, or end date have improper formatting. Only the fields with improper formatting will be referenced. Filtering will occur based on all valid fields.

4. Conclusions

The functionality of the LEAP Data Management and Visualization tool is described in this document with detailed instructions of how to accomplish the main tasks. Associated documents include: LEAP Requirements Document, the Technical Report, Installation Instructions, and Programming Reference.