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**Griffith University**

**3821ICT – WIL Single Project**

**Improving the efficiency and effectiveness of large-scale extraction of electricity demand data published by AEMO as part of the 2022 Integrated System Plan (ISP).**

**User Manual**

**Unisoft**

*[2022 (Trimester:- 2)]*

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**1.0 Summary**

The user manual is split into 5 sections each with a different purpose.

1. The installation guide will run through how to get the program running and functioning correctly. How to run the code and install mySQL will be explained.
2. Each function of the program will be explained in detail to give an overview of how each part works.
3. The overall operation of the program will be explained and common uses will be demonstrated
4. Licensing information will be provided for each third party package that was used.
5. Additional information will be provided.

**2.0 Installation**

**2.1 mySQL**

Installing mySQL allows for the program to use a database to store the loaded files. The installer can be downloaded from the link below

<https://dev.mysql.com/get/Downloads/MySQLInstaller/mysql-installer-community-8.0.30.0.msi>

mySQL also requires the installation of Microsoft Visual C++ Redistributable which can be obtained from the link below

https://aka.ms/vs/17/release/vc\_redist.x64.exe

1. Install mySQL using the default settings ensuring the password is something that will be remembered
2. Open mySQL Workbench.
3. Double click on the instance as shown below.

Graphical user interface, text, application, chat or text message

Description automatically generated

1. Log in to the database.
2. Enter the following commands into the command line one at a time to create the database (make sure to delete the first command before entering the second. Run the command using the lightning icon 
   1. CREATE DATABASE demand
   2. CREATE USER 'setup'@'localhost' IDENTIFIED BY 'putes'
   3. GRANT ALL PRIVILEGES ON \*.\* TO 'setup'@'localhost'

**2.2 Running the Program**

1. For the first-time setup run the setup.exe program to create the database.
2. Run the main program.

**3.0 Functions**

**3.1 Loading a File**

**3.1.1 Selecting the File**

When ‘load file’ is clicked, a file window will open allowing the user to select the file from files on their system. Selecting a file and clicking “select” will then open the confirmation box.

**3.1.2 Confirmation Box**

The confirmation box will open once a file is selected. The confirmation box gets the user to enter the information the database will use to recognise the data being loaded. The user is required to enter in the region, scenario, component and year of the file being loaded. This ensures the system knows how to categorise the data. It also allows the user to specify the subregion the data belongs to if applicable.

**3.1.3 Selecting Separator**

The file separator can be chosen by the user by typing it into the separator box. This allows the user to load files that have a range of symbols separating their data. By default the separator is a comma.

**3.1.4 String Classifier**

The string classifier allows the user to select what defines a string in a file. By default the value is a quotation mark.

**3.2 Loading the data from the database with queries.**

**3.2.1 Selecting the Region**

The region can be selected using the drop down menu which is automatically filled in with the available regions from the files loaded into the database. Once the region is selected, the other drop down menus will populate to show more options.

Example: QLD

**3.2.2 Selecting the Scenario**

The scenario can be selected using the drop down menu that is automatically populated when a region is selected.

Example: Step\_Change\_POE10

**3.2.3 Selecting the Component**

The component can be selected using the drop down menu that is automatically populated when a region is selected.

Example: Electrified\_Bus

**3.2.4 Selecting the Year**

The year can be selected using the drop down menu that is automatically populated when a component is selected.

Example: 2011

**3.2.5 Range Selector**

The user is able to select if they would like to pull the data from files in a range of years. The user can click the ‘range’ check box and then select an upper bound for the range they wish to display.

**3.2.6 Selecting a Date and Time Range**

The date and time range can be selected by using the calendars and spinboxes. The first calendar and spinbox can be used to select the start of the date and time range. The second calendar and spinbox can be used to select the end of the date and time range. Once the date ranges are selected, the submit button can be pressed to save the date selected. This will allow for the user to read

**3.2.7 Selecting Sub-Regional Data**

The use of sub-regional data can be chosen by ticking the box labelled ‘subregion’. If the box is selected, the subregional data will be used; if not then the subregional data will not be used.

**3.2.8 Custom Queries**

Custom queries can be used to query the database in any way that sql allows while the default options do not. The user can type their custom queries into the box provided and then click submit to display the results of the given query.

**3.2.9 Deleting Data**

The user can click ‘delete selection’ to delete the selected data from the database.

**3.3 Displaying the Data**

**3.3.1 Running the Query**

Once all the selections have been made, the user can click ‘run query’ to display the data. The data will pop up in a separate window so that the user can scroll through all the data selected.

**3.3.2 Clearing the Query**

If the user makes a mistake in their selections, they can click the ‘clear’ button to clear all the selections that have been made. This allows the user to make new selections.

**3.4 Printing to a File**

**3.4.1 Printing to a CSV**

In the display window, the user can click ‘print to CSV’. This will create a new CSV file that the user can then open from outside the program.

**3.4.2 Printing to an Excel document**

In the display window, the user can click ‘print to Excel’. This will create a new excel document that the user can then open in excel and edit externally.

**3.4.3 Printing to a space-delimited text file**

In the display window, the user can click ‘print to text. This will create a new text file that the user can then open in any text editor.

**4.0 Operation**

**4.1 Loading a File**

Below is a step-by-step guide on loading a file.

1. Click the load file button from the main menu.
2. Use the window to select the file that needs to be loaded.
3. Type in the region name that matches the file e.g QLD.
4. Type in the scenario name that matches the file e.g STEP\_CHANGE\_POE10.
5. Type in the component name that matches the file e.g ELECTRIFIED\_BUS.
6. Type in the year that matched the file e.g 2011.
7. Tick the box if the file is a sub region and enter what the file is a subregion is of e.g NSW.
8. Click the confirm box to load the file into the database.

**4.2 Making a Query**

1. Select the desired region for the query to the database.
2. Select the desired scenario for the query to the database.
3. Select the desired component for the query to the database.
4. Select the desired year for the query to the database.
   1. Select a date and time range for the query to the database.
5. Select if the query should include subregional data.
6. Add the selection to the selection list.
   1. Optionally, click the custom query but to create a custom query and add it to the selection.
7. Repeat steps 1-5 until all selections needed are made.
8. Click run query, a new window should open showing the list of data given by the selections.
9. The data can be scrolled through both horizontally and vertically to allow viewing all the data.
10. Each column can be expanded if the data does not fit in the default size.

**4.3 Printing to a File**

1. Once the data display window is open the user is able to choose if they want to print the data to a file.
2. Select print to CSV
   1. A new file will be created in the CSV format.
   2. The file can be opened using any text editor or by using specialised programs such as excel.
3. Select print to excel.
   1. A new file will be created in the Excel format.
   2. The file can be opened and modified using excel.
4. Select print to Text.
   1. A new space delimited text file.
   2. The file can be opened using any text editor

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**6.0 Additional Information**

**6.1 Custom Queries**