**USER GUIDE**

Step 1: Create a parameter folder and create a parameter file in .csv format for data extraction from database

Step 2: Sample Parameter file for data extraction is attached in the reference section

Step 3: Enter the Start and End date, sensor unit id and path where the extracted data need to be saved

Step 4: Copy the parameter file path and paste on the first line of Data Engineering R file (Note: Data Engineering R file is attached at the reference section)

Step 5: Install the package Sqldf, RODBCecxt by clicking on the Install button on the bottom right side of R window

Step 6: Establish the odbc connection with the database by giving connection name, user Id and password in the 4th line of code (Note: Please look into the link attached in reference section for creating odbc connection)

Step 7: Give the schema and table name from which data need to be extracted in 10th line

Step 8: Give you’re from and to email address to acknowledge process completion in 21st and 22nd line

Step 9: Give host.name, port number, email id and password of from email account to establish connection between R interface and your email box in 28th line

Step 10: Create a separate parameter file for outlier analysis under parameter folder->Outlier folder. Sample parameter file for outlier analysis is given in reference section

Step 11: Enter each parameter upper and lower range and save the file in .csv format

Step 12: Copy the path of outlier analysis parameter file and paste in the 31st line

Step 13: Follow the step 6 for the 60th line

Step 14: Create a table structure in database to load the outlier data. Create table query is given in the reference section. Note: Separate table should be created for each parameter and table name should same as column name. Example noise\_value

Step 15: Follow the step 6 for the 90th line

Step 16: Create a clean data table in a database. Create table query is attached in the reference section. Enter the table name and schema in the 93th line

Step 17: Repeat the step 9 for line 105th and 106th line

Step 18: Create a parameter file for the aggregation under parameter folder->Aggregation. Sample parameter file for aggregation is given in the reference section

Step 19: Create table for each level of aggregation i.e. Five minute, Fifteen minute, thirty minute so on by using the create table query in the reference section

Step 20: Run the code under function section first before running the main code

Step 21: You can evaluate the values by running the select query in the database

**Reference:**

**Parameter File**

* Data Extraction:

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* Outlier Analysis:

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* Aggregation:



**Create Table Statement:**

* Outlier Table

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* Clean Data

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* Aggregation

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**R Code**

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