**Part 1: Test environment setup**

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|  | **Actions** | **Expected Result** | **Done** |
| 1 | Copy file ‘Test Data.csv’ in the test directory and paste to:  *<project-install-directory>\short-term-load-forecasting-visualisation-and-interActions-tool\preprocessing* |  |  |
| 2 | Execute *python process\_csv.py.* |  |  |
| 3 | Type in:   * *Test Data* * *NorthernIreland* * *Press enter twice to skip state and province* |  |  |
| 4 | Delete ‘Test Data.CSV’ in *preprocessing*.  Rename ‘Test Data\_processed.csv’ to ‘SONI.csv’  Cut ‘SONI.csv’ and paste to:  *<project-install-directory>\short-term-load-forecasting-visualisation-and-interActions-tool\data\load\_data*  If SONI.csv ‘already exists rename the existing SONI.csv in the *load\_data* folder to ‘SONI\_original.CSV’ and then paste |  |  |
| 5 | In the directory  *<project-install-directory>\short-term-load-forecasting-visualisation-and-interActions-tool*  Execute *python run.py* |  |  |
| 6 | Using a web browser, navigate to web address *http://127.0.0.1:8050/* | * No graph visible |  |

**Part 2: Load Data Visualisation**

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|  | **Actions** | **Expected Result** | **Done** |
| 1 | Change start date to Monday 8th February 2010 | * No graph visible |  |
| 2 | Change start date to Monday 8th February 2010.  Change end date to Tuesday 9th February 2010 using the visualised calendar widget | * X axis labelled ‘Date’ * Y axis labelled ‘Load’ * No legend visible * Graph plotted with start date midnight point plotted (2010-02-08) and end date (2010-02-09) midnight point plotted * X axis shows the single day range (3hr increments) * No model metrics table visible below graph |  |
| 3 | Click the ‘+’ labelled button beside the calendar date selection widget | * Start date in the calendar widget is 2010-02-09 and end date is 2010-02-10. * Graph plotted with start date midnight point (2010-02-09) plotted and end date midnight point (2010-02-10) plotted |  |
| 4 | Click the ‘-’ labelled button beside the calendar date selection widget | * Start date in the calendar widget is 2010-02-08 and end date is 2010-02-09. * Graph plotted with start date midnight point (2010-02-08) plotted and end date midnight point (2010-02-09) plotted |  |

**Part 3: Forecasting Visualisations and Statistical Metrics**

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|  | **Actions** | **Expected Result** | **Done** |
| 1 | Change start date to Tuesday 9th February 2010.  Change end date to Wednesday 10th February 2010.  Open the displacement model carat.  Type in 1 to displaced by text field and select ‘Days’ in dropdown.  Click ‘Add Model’ button. | * Directly below 2010-02-09 18:00’ actual load point (blue).   there is a ‘2010-02-08 18:00’ -1 days point (orange).   * ‘Actual Load’ and ‘-1 Days’ legends visible. * Metrics table has a ‘Visualised’ column. * No ‘Test Data’ sub column below -1 Days column |  |
| 2 | Change test data start date to 8th February 2010. | * No ‘Test Data’ column |  |
| 3 | Change test data start date to 10th February 2010.  Change test data end date to 11h February 2010. | * ‘Test Data’ column |  |
| 4 | Type in 1 to displaced by text field and select ‘Hours’ in dropdown.  Click ‘Add Model’ button. | * Directly below 2010-02-09 18:00’ actual load point (blue).   there is a ‘2010-02-08 18:00’ -1 days point (orange) and ‘2010-02-09 17:00’ -1 hours point (green)   * ‘Actual Load’, ‘-1 Days’ and ‘-1 Hours’ legends visible. * Metrics table has a ‘-1 Hours’ column with ‘Visualised’ and ‘Test Data’ sub columns |  |
| 5 | From models visualised dropdown select ‘-1 Hours’  Click trash icon. | * No -1 Hours legend * No -1 Hours green points * No -1 Hours selection in models visualised dropdown * Metrics table -1 Hours column is not visible. |  |
| 6 | From models visualised dropdown select ‘-1 Days’  Click trash icon. | * No -1 Days legend * No -1 Days points * ‘No Results Found’ in models visualised dropdown * Metrics table is not visible. |  |

**Part 4: Forecasting Model Characteristics**

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|  | **Actions** | **Expected Result** | **Done** |
| 1 | Change start date to Monday 9th February 2010.  Change end date to Tuesday 10th February 2010.  Type in 1 to displaced by text field and select ‘Days’ in dropdown.  Click ‘Add Model’ button.  Choose ‘Temperature’ in the characteristic graph y-axis dropdown | * -1 Days legend on both graphs. * Colours for each plot (Actual Load and -1 Days) are the same in the two visualised graphs. * Gridlines line up vertically. * Model visualisation (top) graph has a Load labelled y axis and does not have a labelled x axis. * Characteristics graph has a Temperature labelled y axis and a Date labelled x axis. |  |
| 2 | Choose ‘None’ in the characteristic graph y-axis dropdown | * Characteristics graph is not visible * Graph has returned to its original height. |  |

**Part 5: Highlighting Data Points**

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|  | **Actions** | **Expected Result** | **Done** |
| 1 | Choose ‘Temperature’ in the characteristic graph y-axis dropdown  Choose ‘Day’ and ‘Monday’ in highlight points dropdowns | * No additional plots on the two visualised graphs. * ‘Highlighted Load’ legend added to both graphs |  |
| 2 | Choose ‘Day’ and ‘Tuesday’ in highlight points dropdowns | * ‘Highlighted Load’ legend added to both graphs * Red line plot superimposing over all 2010-02-09 day (blue) points. * No red line plot superimposing -1 Day model (orange) points. |  |

**Part 6: Model Error Distribution Graph**

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|  | **Actions** | **Expected Result** | **Done** |
| 1 | Click on ‘Models Error Distribution’ | * No graph visualised |  |
| 2 | Change start date to Tuesday 9th February 2010.  Change end date to Wednesday 10th February 2010.  Type in 1 to displaced by text field and select ‘Days’ in dropdown.  Click ‘Add Model’ button. | * Model error distribution graph is visible * -1 Day (Visualised) legend is visible * Y axis labelled ‘Cumulative Percentage (%)’ * X axis labelled ‘Absolute Percentage Error (%)’ * Range of Y axis 0-100 * ‘-1 Days’ colour (orange) is the same in the model visualisation and characteristics graph |  |
| 3 | Type in 1 to displaced by text field and select ‘Hours’ in dropdown.  Click ‘Add Model’ button. | * Model error distribution graph is visible * -1 Day and -1 Hours legend is visible * Range of Y axis 0-100 * ‘-1 Days’ colour (orange) and ‘-1 Hours’ colour (green) is the same in the model visualisation and characteristics graph |  |
| 4 | Choose ‘Day’ and ‘Monday’ in highlight points dropdowns | * No ‘Highlighted’ legend * No red highlighted point plots on graph |  |
| 5 | Choose ‘Day’ and ‘Tuesday’ in highlight point dropdowns | * Red highlight points on superimposing -1 Hours and -1 Days points * ‘-1 Days (Visualised)’, ‘-1 Hours (Visualised)’ and ‘Highlighted’ legends |  |
| 6 | From models visualised dropdown select ‘-1 Days’  Click trash icon. | * ‘-1 Days (Visualised)’, ‘Highlighted’ legends * ‘-1 Days’ orange plots no longer visible * ‘-1 Hours’ point and line colour (green) is the same in the model visualisation graph. |  |
| 7 | Change test data start date to 10th February 2010.  Change test data end date to 11h February 2010. | * ‘-1 Hours (Visualised), ‘-1 Hours (Test) and ‘Highlighted’ legends * Test data plots (Blue-green) plots visible * Test data points not superimposed by any red highlight points |  |
| 8 | From models visualised dropdown select ‘-1 Hours’  Click trash icon. | * Graph is not visible |  |