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# 1. Setup of Web Application

## 1.1 Pre-Requisites

In order to run the web application, the following needs to be installed:

1. Web Browser (Recommended: Google Chrome)
2. Local Server (Recommended: EasyPHP DevServer)

## 1.2 Setup

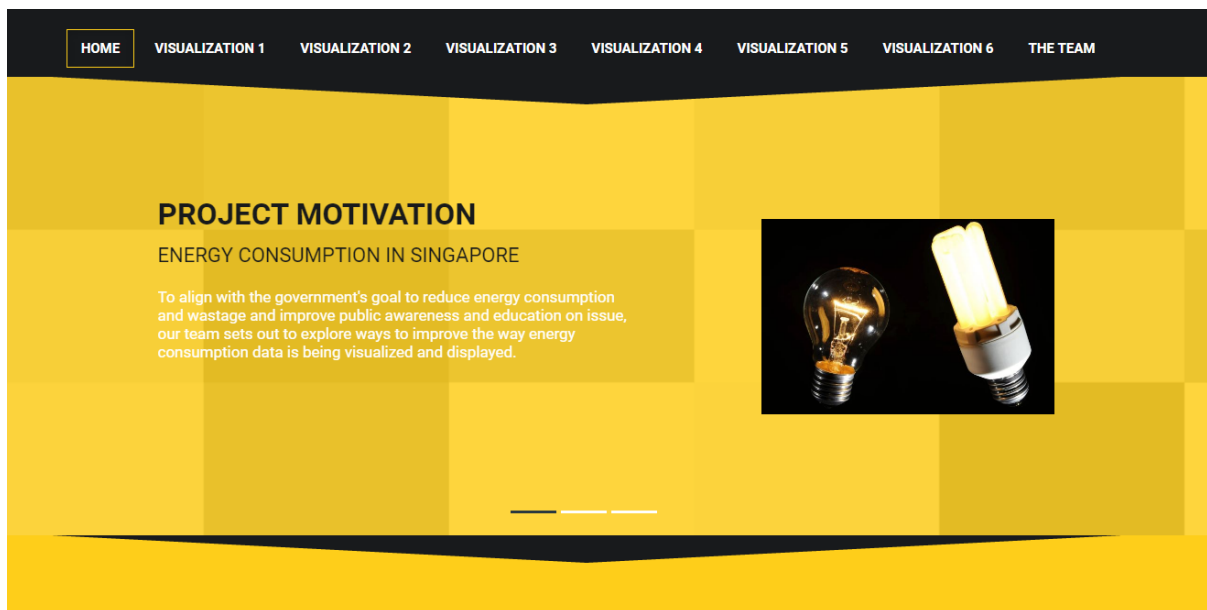
1. Copy and paste the contents of the “Source Code” folder into the “local web” folder where EasyPHP is installed. By default the “local web” folder is found in the following directory: “C:\Program Files (x86)\EasyPHP-DevServer-14.1VC9\data\localweb”
2. Run EasyPHP
3. Open up the web browser and enter the following URL: [“http://127.0.0.1/Source%20Code/index.html”](http://127.0.0.1/Source%20Code/index.html)

## 1.3 Best Experience

1. Adjust screen resolution to 1366 x 768.
2. Use the recommended browser (Google Chrome)

# 2 Homepage

Upon running the web application, it will direct to index.html, where the top of the page shows the navigation buttons followed by the project statement.



## 2.1 Navigation Elements

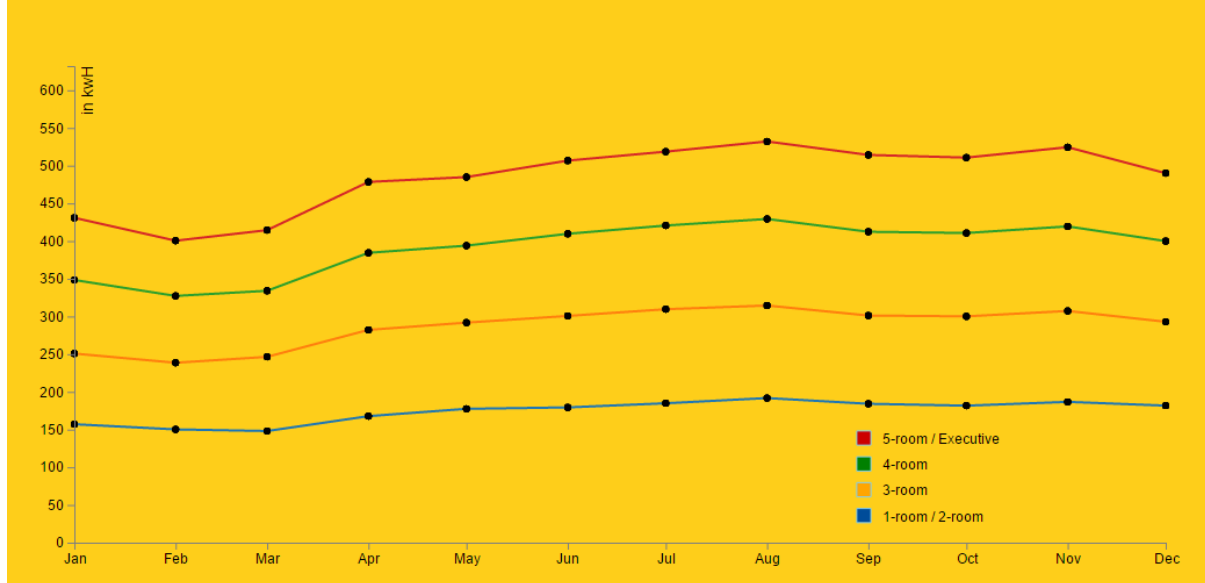
The user can choose to navigate through the application by click on any of the segments on the navigation bar.

Alternatively, the user can also choose to scroll down the page and the application will display the visualization in order from visualization 1 to 6.

Upon reaching the bottom of the page, a return to top button allows the user to go back to the top.

### 3 Visualization 1: Electrical Consumption by Housing Type

#### Electrical Consumption by Housing Type in 2015: Line Chart

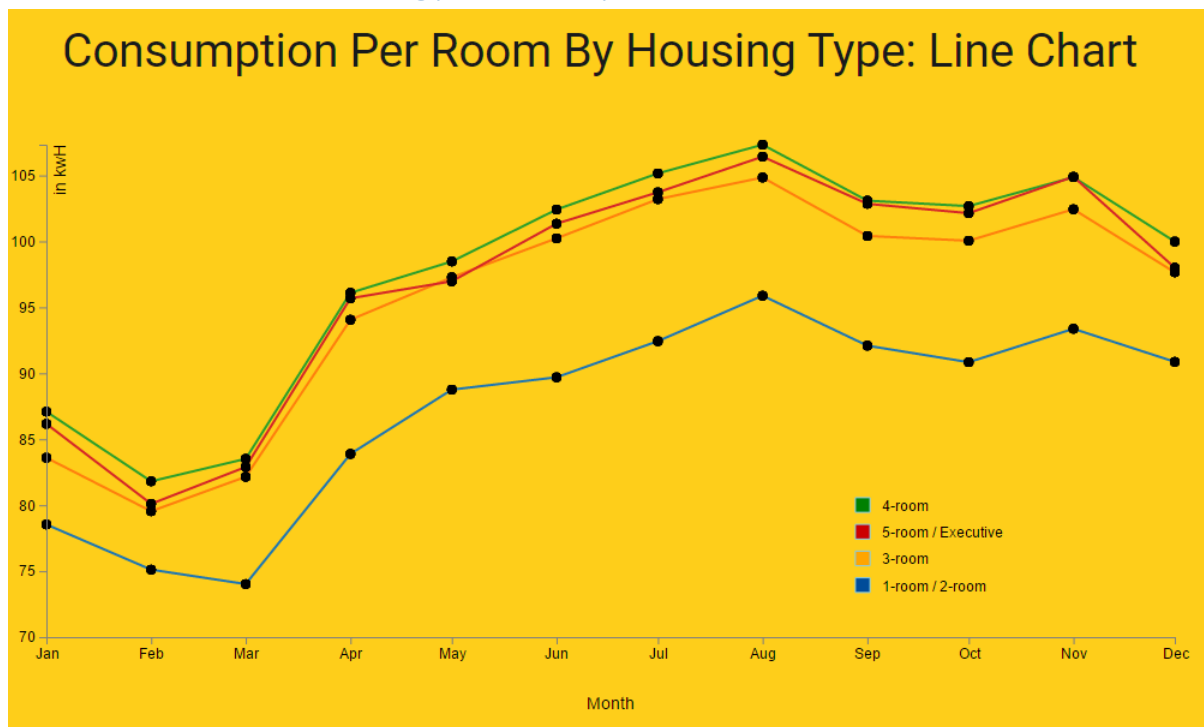


The first visualization allows the user to view the energy consumption pattern across 2015. The chart is based on the 4 different public housing types:

1. 1-room / 2-room
2. 3-room
3. 4-room
4. 5-room / Executive

The user can hover on the data points and the corresponding contextual data and information will be displayed.

## 4 Visualization 2: Energy Consumption Per Room



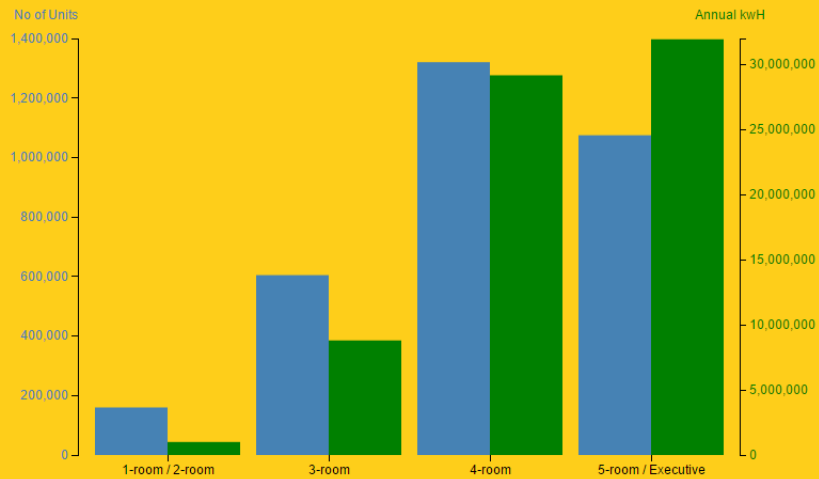
The second visualization allows the user to view the energy consumption pattern on a per room basis across 2015. The chart is based on the 4 different public housing types:

1. 1-room / 2-room
2. 3-room
3. 4-room
4. 5-room / Executive

The user can hover on the data points and the corresponding contextual data and information will be displayed.

## 5 Visualization 3: No of Units against Annual Consumption

### Comparison of Housing Type Units against Annual Consumption: Double Bar Chart



This visualization allows a user to compare the composition of the housing types in 2015 against that of the annual energy consumption.

The user can hover on the data points and the corresponding contextual data and information will be displayed.

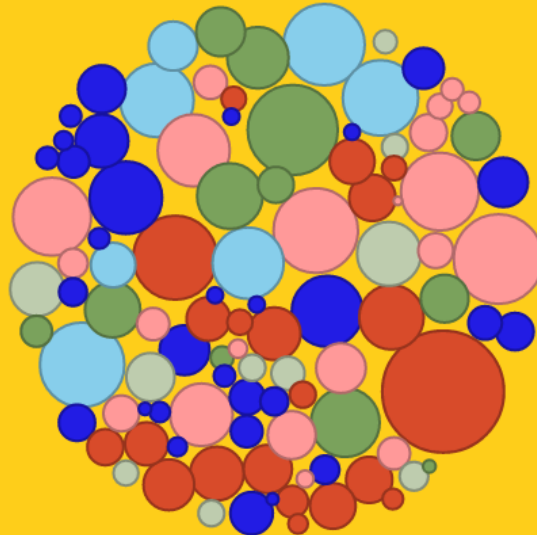
## 6 Visualization 4

### Subzone/Region Analysis: Bubble Graph

#### Electrical Consumption in Singapore 2015

Consumption by Subzones

Consumption by Region

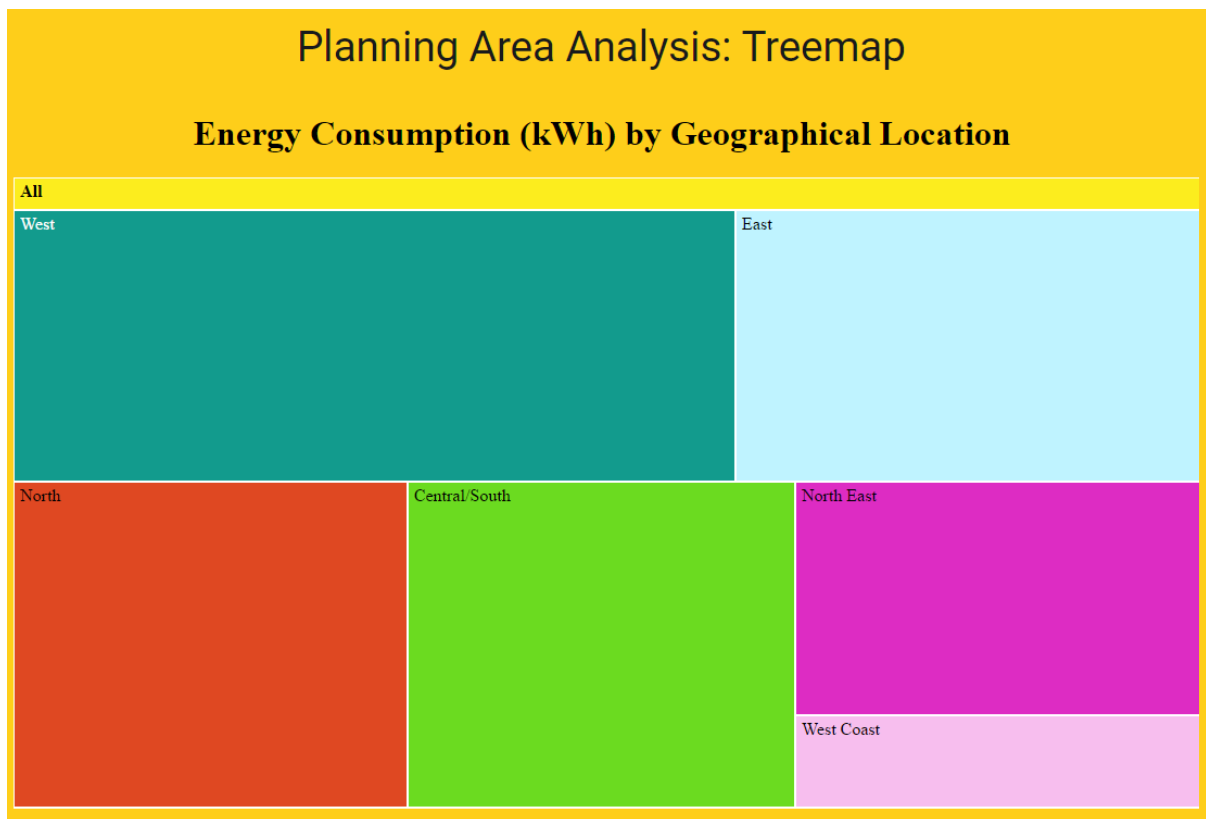


This visualization allows a user to view the energy consumption by region. The information is organized according to subzones where each circle represents a subzone in Singapore. The color represents the various regions (North, Central/South, East, North East, West, West Coast).

Here the user can click on “Consumption by Region” and the graph will filter and organize the energy consumption according to the regions.

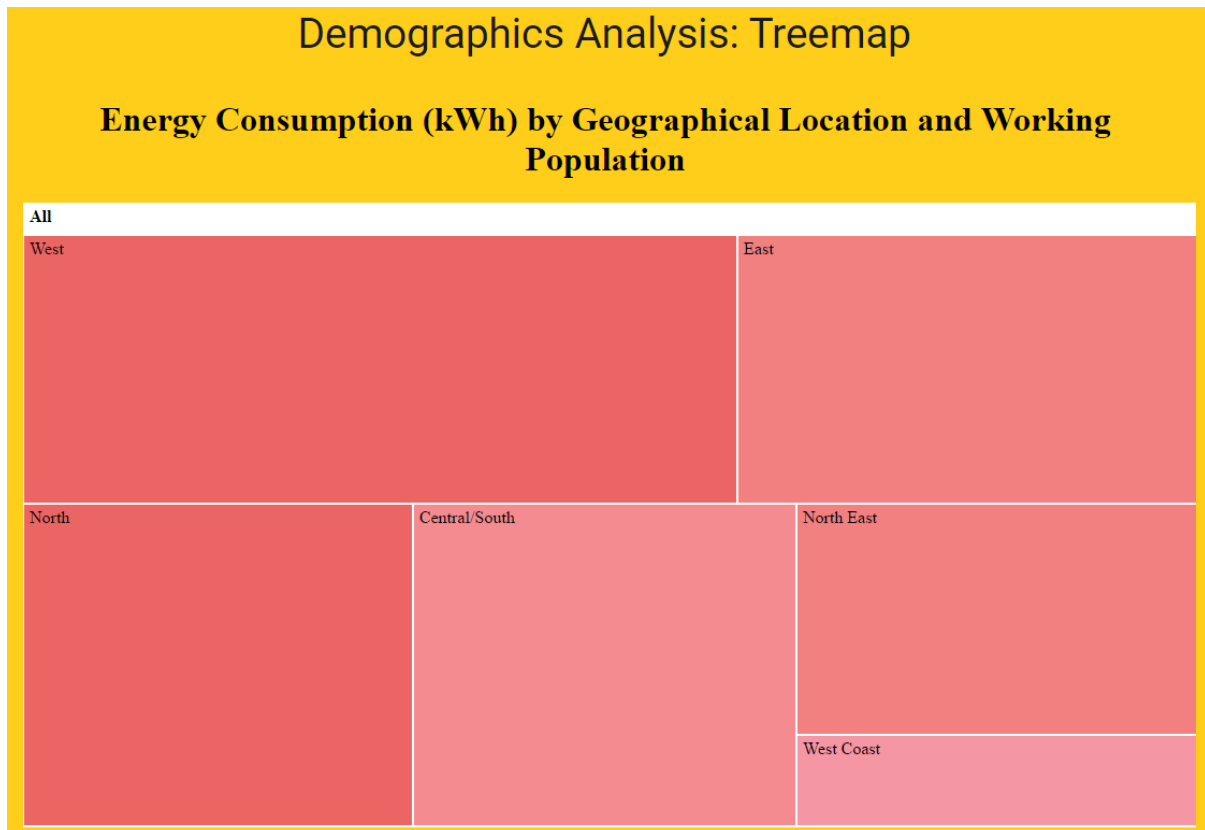
The user can hover on the circle and the corresponding contextual data and information will be displayed.

## 7 Visualization 5



This visualization makes use of a Tree Map to allow the user to see the energy consumption by regions, planning areas and subzones in Singapore. The user can start by clicking on any of the regions and it will display the corresponding planning areas, subzones and the respective energy consumption.

## 8 Visualization 6



This visualization makes use of a Tree Map to allow the user to view energy consumption according to regions as well as percentage of active working people in Singapore. The size represents the energy consumption for each respective region/planning area/subzone and the color intensity is used to show the percentage of active working people with the most intense color having the highest concentration.