**Assignment Report for Certificate in Introductory Data Analytics**

GitHub repository URL: <https://github.com/howletts/UCDPA_SarahHowlett>

Develop a Python project to analyse real world scenarios and generate valuable insights by visualizing information. The project aims to analyse data from different data sources, manipulate information and visualize to generate insights.

A student can use any open-source dataset available online for analytics.

● Describing your process, dataset, different sources, graphs and insights.

● Justify the use of each learning outcome concept for eg.. Why did you use list over dictionary?

**1** Project should use a real world dataset and include a reference of their source in the report

I downloaded "Attractions.csv" from https://data.gov.ie/dataset/attractions and saved it locally to demonstrate

reading a csv file into a dataframe.

For the attivities and accommodation datasets i made a call to the APIs https://failteireland.azure-api.net/opendata-api/v1/accommodation

https://failteireland.azure-api.net/opendata-api/v1/activities

Using SQLite Developer I created a demo database "sqlliteDB\_ucdproj.db with a table COUNTY\_PROVINCE\_LINK to demonstrate importing data from a Relational Database - see "data" folder.

I used python pickles to store the data temporarily to avoid constantly hitting the endpoints during development.

**2** Importing data

• Your project should make use of one or more of the following, [1]

• Relational Database or API or Web Scraping

• Import a CSV file into a Pandas DataFrame. [1]

3) Analyzing data

• Your project should include sorting, indexing, grouping. [1]

• Replace missing values or dropping duplicates. [1]

• Slicing, loc or iloc. [1]

• Looping, iterrows [1]

• Merge dataframes [1]

4) Python

• Define a custom function to create reusable code. [1]

make\_api\_call(), download\_csv(), extract\_region, get\_lollipop\_colours

• Numpy. [1]

• Dictionary or Lists. [1] –

A list comprehension to make a list of colours

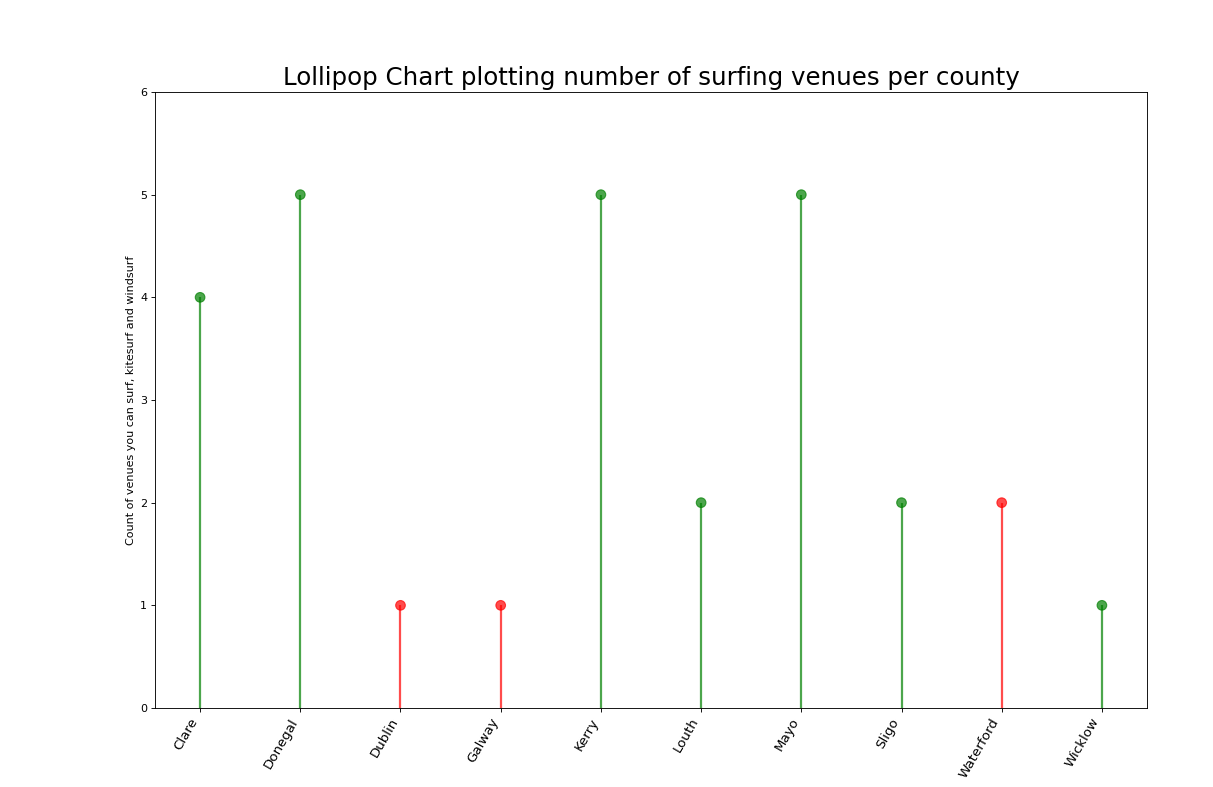
5) Visualize

• Seaborn, Matplotlib [2]

6) Generate Valuable Insights

• 5 insights from the visualization. [2]

**Visualization and Insights:**



**Insight 1:** If you are interested only in locations where you can surf, kitesurf and windsurf the counties with the most options are Donegal, Kerry and Mayo (5 locations each).  **Insight 2:** Counties that contain a city do not have much options (see red lollipops).