**Objective of the Project:**

* The purpose of this Analysis to help W. Avy present a business plan to his board of directors to start another venture of “Surf n Shake” business model. Since the previous venture did not take into consideration weather conditions it had to be shut down. Using SQLAlchemy, query tool analyzing weather data on Oahu Island, proposed site for new Surf n Shake venture. Once data collected to import into Jupyter Notebook via SQLAlchemy creating a new engine. Finally using Flask create a web framework to share the analysis and data in real time.

**Results:**

* **Retrieve the precipitation data and plot the data**.

Graphical user interface, text, application

Description automatically generated

<https://github.com/sachinnabar/surfs_up/blob/main/Resources/Goal%201.PNG>

* **Find the number of stations and determine the most active stations.**

Graphical user interface, text, application

Description automatically generated

<https://github.com/sachinnabar/surfs_up/blob/main/Resources/Goal%202.PNG>

* **Find the low, high, and average temperatures and plot the highest number of observations.**

Graphical user interface, text, application

Description automatically generated

<https://github.com/sachinnabar/surfs_up/blob/main/Resources/Goal%203.PNG>

* **Create a precipitation, stations, monthly temperature, and statistics route.**

Chart, histogram

Description automatically generated<https://github.com/sachinnabar/surfs_up/blob/main/Resources/Goal%204.1.PNG>

Chart, histogram

Description automatically generated

<https://github.com/sachinnabar/surfs_up/blob/main/Resources/Goal%204.2.PNG>

Chart

Description automatically generated

<https://github.com/sachinnabar/surfs_up/blob/main/Resources/Goal%204.3.PNG>

* **Key Differences in Weather between June and December**

Graphical user interface, application, Word

Description automatically generatedhttps://github.com/sachinnabar/surfs\_up/blob/main/Resources/Deliverable%201.4.PNG

Graphical user interface, text, application, email

Description automatically generated

https://github.com/sachinnabar/surfs\_up/blob/main/Resources/Deliverable%202.4.PNG

1. June has more data points 1700 compared to December having 1517 data points.
2. June is comparatively warmer month than December with average of 74 °F against 71 °F
3. Maximum temperatures for both months are comparable with June at 85 °F while December recording 83 °F
4. Though the average temperatures are comparable there is significant difference in minimum temperatures i.e., June at 64 °F against 56 °F in December. Significant lower temperature in December will impact both Surfboard rentals and ice cream sales compares to June sales.

**Summary:**

* From the results we can conclude that the temperatures for June and December are relatively comparable and would be suitable for surfing in later half of the year.
* The minimum temperate recorded in December at 56°F can raise concerns for both Surfboard rentals as well as Ice cream sales.
* This analysis only takes into consideration two months of the year does not consider the months specially in first half of the year. Ideally you will have to collect data for each month to get a better picture.
* You will also need to compare other factors apart from temperature like tourist footfall in Oahu Island throughout the year. Also need to get analysis done on percentage of total tourists who are surfing enthusiasts.
* Other factors to considered of checking the Oahu Island market for potential competitors who are in similar business of Surfboard rentals and Ice Cream shop.
* If W Avy really wants his board of directors to approve this business proposal only temperature analysis of couple of months will not create correct picture. We will need to present a business plan covering all aspects of the business-like Weather, Tourist Percentage, Competitors in local market, Equipment & Labor costs etc.
* While making a business plan we should also take into consideration previous failed venture of W Avy and try to provide solutions to aspects which went wrong from the past data.