Shark Attacks: Mini Project 2
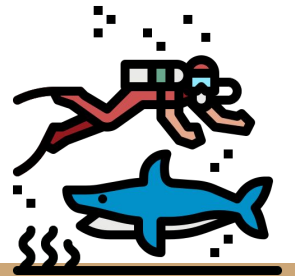
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IRON
HACK

Project Overview

Business Case: Leveraging shark attack data to promote responsible shark tourism and support shark conservation efforts.

Problem Statement: Without a data-driven understanding of shark activity patterns and attack incidences, it is challenging to identify suitable locations for shark diving experiences.

Hypothesis: We hypothesize that it is possible to identify high shark activity areas with low incidence rates of shark attacks, thereby enabling us to strategically select locations for shark diving experiences

Data Wrangling and Cleaning

Requirements:

- Strip whitespace from column titles
- Strip whitespace and apply lowercase to all strings in the data
- Drop any columns that don't contribute to the research
- Convert unique strings into categorical data for certain columns
- Manage empty values and data types

Tools:

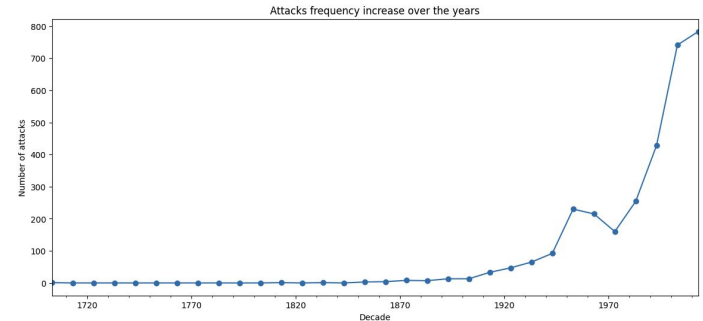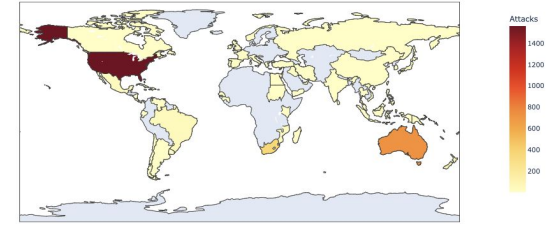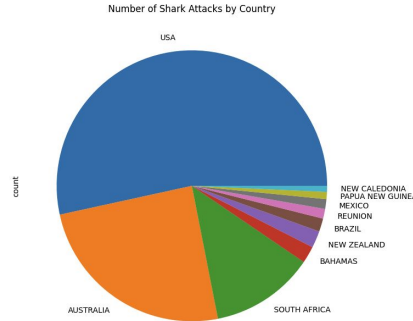- Functions, list comprehension, map/apply, string methods, lambda...

Exploratory Data Analysis

Dates formatting:

- Different date format challenge:
  - DD-MM-YY
  - Year
  - NaN
  - Etc
- Solution: not considering incomplete records for the graphics (total count 182 records excluded)

Graphics for data visualization:

*Matplotlib
*Plotly

Major Obstacles

*To judge what data might be invalid for the analysis

*Different formats in the data

*Categorizing data when there are so many unique entries

Conclusions and Insights

WHEN YOU STEP ON A LEGO

- **Risk Analysis:**
    - **Australia,** notably New South Wales, records **54 fatal shark attack** injuries, while the **Philippines,** particularly Bernardino Strait near Gulf of Leyte, reports **only 1.**

- **Activity Insights:**
    - **Surfing** (1126 incidents), **swimming** (1023 incidents), and **fishing** (504 incidents) are the **top activities triggering shark attacks.**

- **Strategic Implications:**
    - These insights aid in **selecting safe locations** for shark diving experiences, **supporting responsible tourism** and **shark conservation** efforts.

Demo Slide

- Link to the project:

  https://colab.research.google.com/drive/1yptJaqRFkZabzRNwp61tXu6FoOqlLd1s?usp=sharing#scrollTo=2mvyTirYigzq

Book your Shark Diving Experience Now!

- Project Name: Shark Attack
- Presented by: Anthony Dillon, Oscar Gonzalez Sanchez, Jorge Pantoja, Ryan van den Akker
- Thank you!