SharkSurance: Consultancy for a travel insurance company

Team N’Sync:

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Project Overview

📊 **Dataset Description:**
The dataset contains records of shark attack incidents, including details on the location, activity during the attack, and whether the incident was provoked or unprovoked.

🎯 **The task:**

Provide an insurance company with insights based on the following hypotheses:

1. Man are much more likely to be attacked by a shark than women.
2. Shark attacks are more common in summer than in other seasons.
3. Surfers are more likely to be attacked by sharks.

Data Wrangling and Cleaning

Challenges Encountered:

- **Missing Values:** Several entries lacked important information such as the gender of the individual or the specific activity during the attack.
- **Inconsistent Formatting:** Discrepancies in date formats, geographic locations, and activity descriptions.

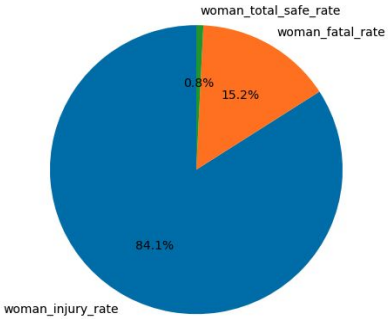
Solutions Applied:

- Imputed missing values using contextual data when possible (e.g., season).
- Removed or merged duplicate records to avoid data redundancy.
- Standardized inconsistent formatting in dates, geographic locations, and activities for accurate analysis.
- Used clustering to simplify the overview of activities.

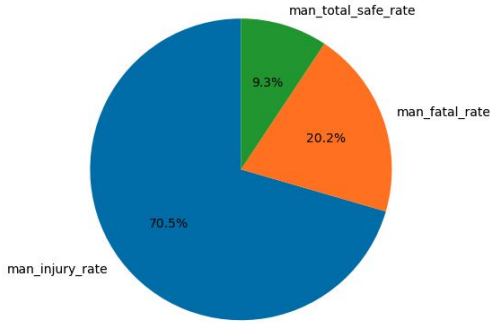
Men are more likely to die from a shark attack

"Below are shark attacking table's statistic for people:

total valid woman qty being calculated: 779
woman_injury_qty: 655
woman_injury_rate: 84.08%
woman_fatal: 118
woman_fatal_rate: 15.15%
woman_total_safe_rate: 6
Above all woman rate show in pie chart as below:

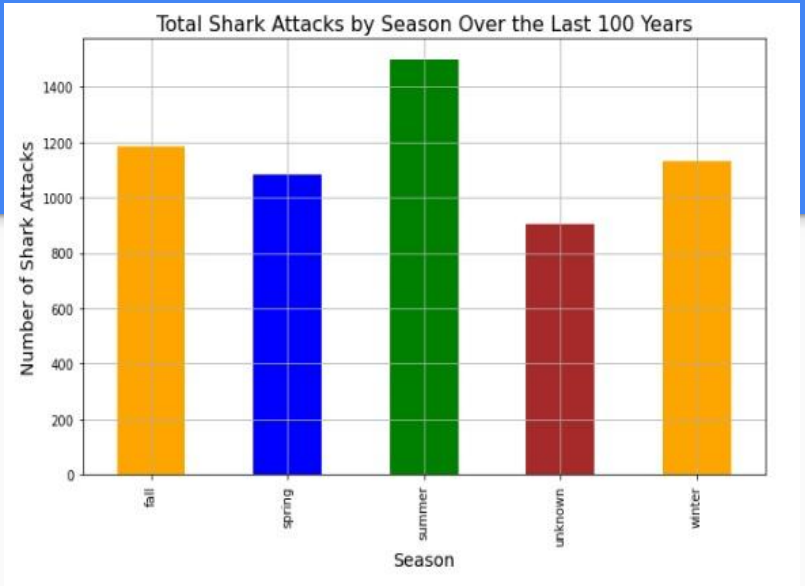


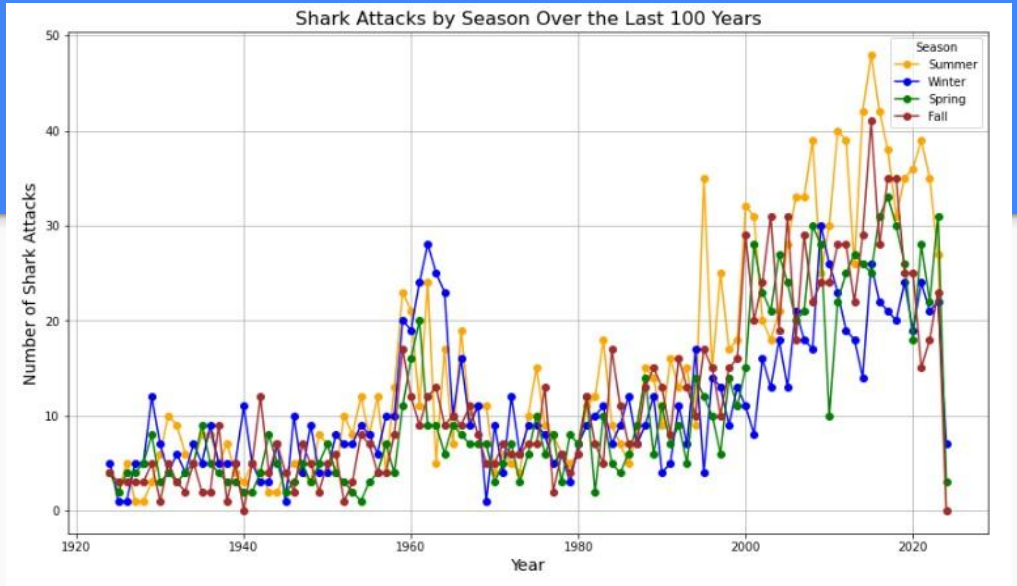
total valid man qty being calculated: 5581
man_injury_qty: 4278
man_injury_rate: 76.65%
man_fatal_qty: 1224
man_fatal_rate: 21.93%
man_total_safe_rate: 79
Above all man rate show in pie chart as below:



- **Gender Analysis:** Investigated whether men were more likely to be victims of shark attacks compared to women.
- **Gender Bias:** Men were significantly more likely to be attacked than women, supporting the first hypothesis.

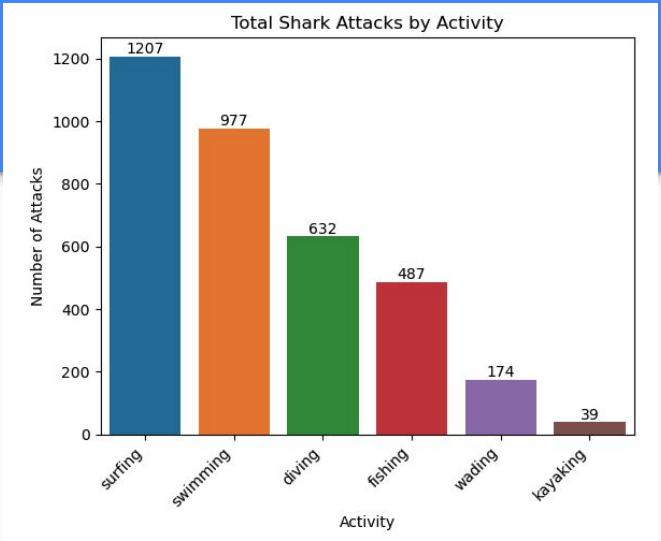
Attacks are more frequent in summer

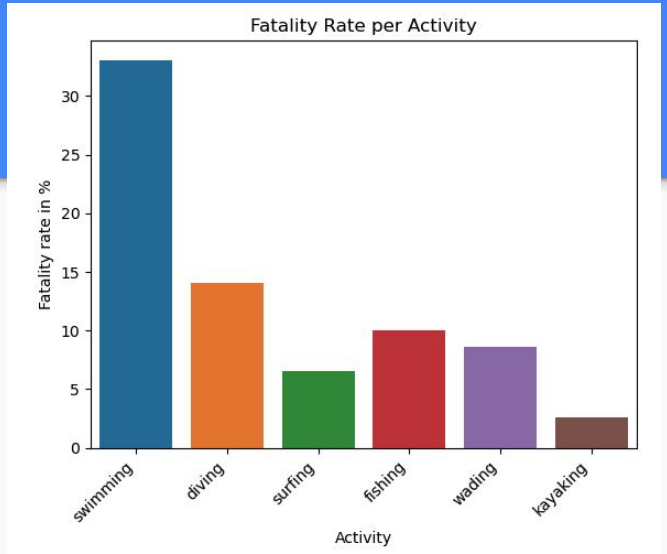




- Shark attack data from **the last 100** years was analyzed and grouped by year and season. By **comparing the seasonal data year-over-year**, **summer** was identified as the season with the highest number of attacks in each individual year.
- The results confirm the hypothesis, The seasonal distribution highlights that **attacks are more common during the warmer months.**

Surfers are more likely to be attacked by sharks





Hypothesis confirmed by clustering activities:

- Surfing leads to most incidents.
- Swimming has a higher fatality rate (30%+ vs. 6% for surfing).

Recommendations for SharkSurance

💰 **Increase Premiums:** Target higher travel insurance fees for surfing and summer destinations with more attacks.

📣 **Refine Marketing:** Focus on safety tips for male travelers, water sports enthusiasts, and swimmers—highlight higher fatality risks for swimmers.

Thanks!

Presenters:

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