

Ocean Research

Shark Surprise

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Introduction

This project analyzes shark attack data to identify trends and factors influencing shark-human encounters. Our statistical approach aims to understand human activities and identify treading of shark attacks in order to offer consolidate data for safety guidelines.



Problem Statement

Relationship between Sharks Attacks and Human Activities

Exploring the relationship between shark attacks and human activities is crucial for understanding how our presence influences shark behavior. This study aims to highlight patterns that could lead to safer human practices and shark conservation efforts, addressing a pressing need for harmony in marine environments.



Hypothesis

1. The human activity influence in the result of Shark Attacks

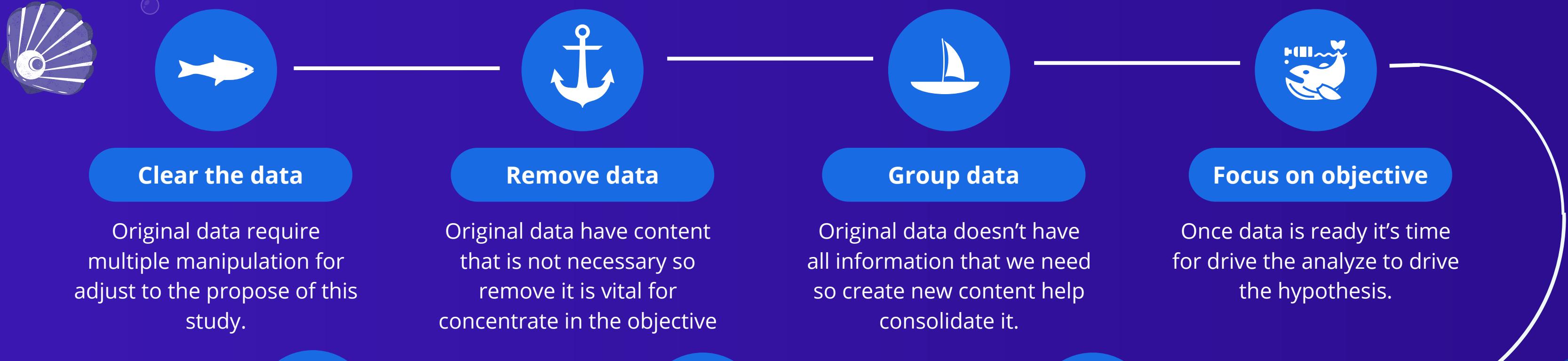
Understand if the human activity influence shark attacks is critical to identify where there is a higher risk of attacks. This it will allow to focus safety measurements more precisely focusing in the higher incidents.

2. The risk associated with the activities to be deadly

If there is a activity that result in a higher risk of death.



Roadmap



Original data require multiple manipulation for adjust to the propose of this study.

Original data have content
that is not necessary so
remove it is vital for
concentrate in the objective

Original data doesn't have all information that we need so create new content help consolidate it.

Once data is ready it's time
for drive the analyze to drive
the hypothesis.



Conclusion

Complete analyze and drive
further researchs.

Consolidation

Complete graphs and research and validate hypothesis

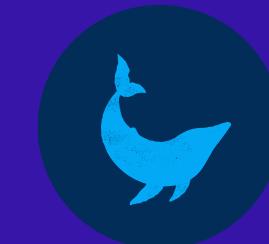
External Research

Once it's necessary some behaviors from sharks a research it was done externally to support the data

Clear Data



Adjust the country names to match ISO 3166-1 in order to identify the respective continent.



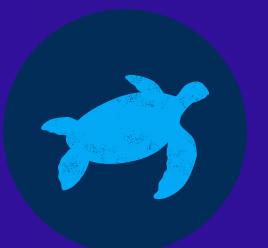
Remove invalid values like invalid dates / invalid countries / invalid injuries.



Create new categories like continent / month / month-year to allow simplify and give another level of research.



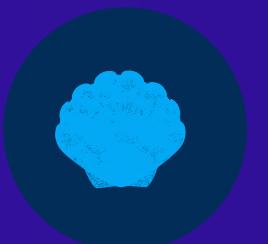
Remove old data <1800 once the amount of content would not add to the study.



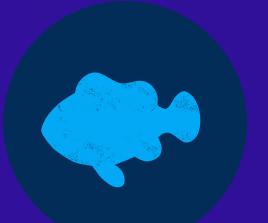
Create a criteria to identify impact of the activity in that specific group.



Group data into small dataframe to change the analyze.

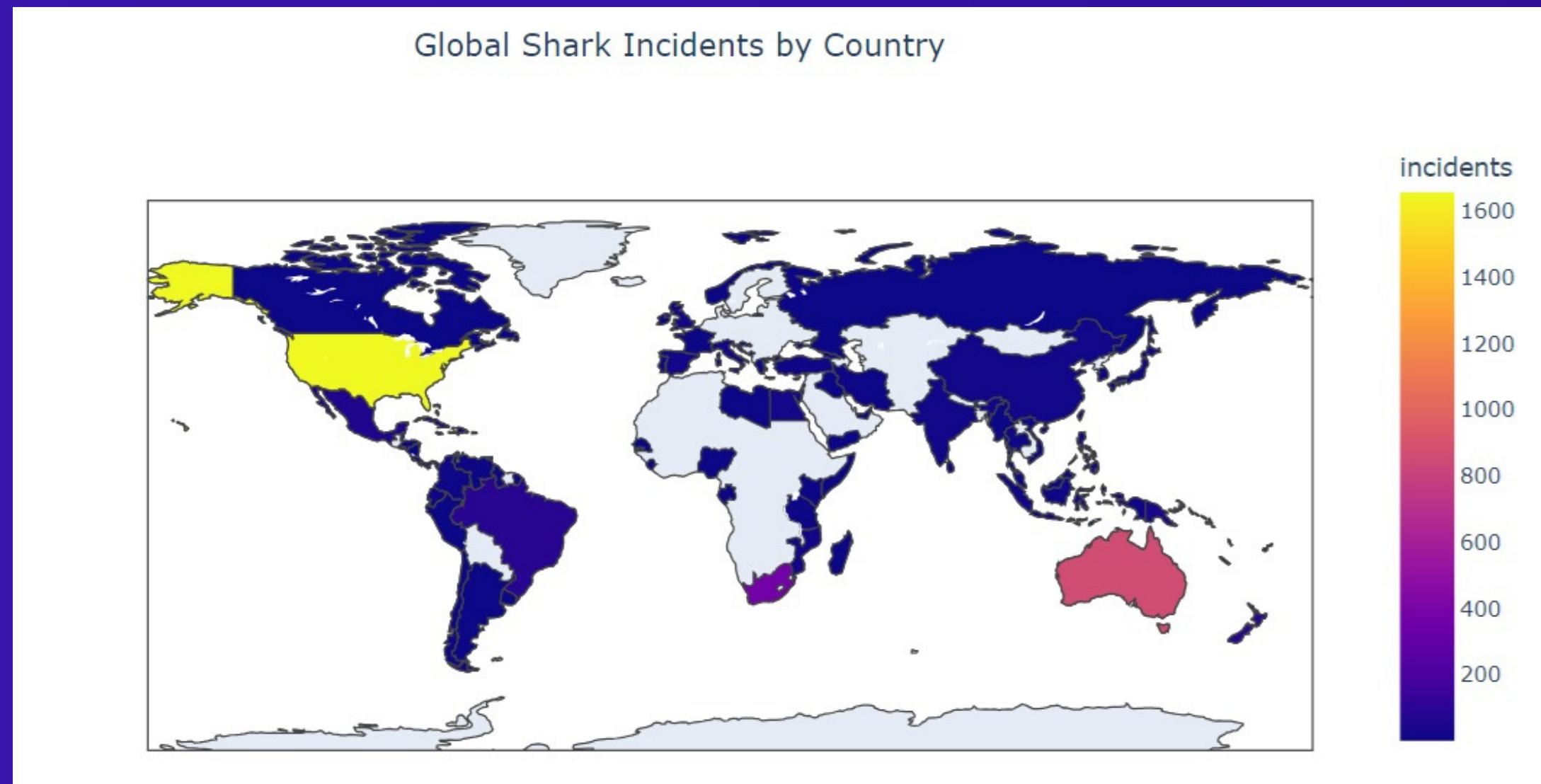


Create a rank method to classify how impact is the activity.



Group the activity to have better categorization.

Findings

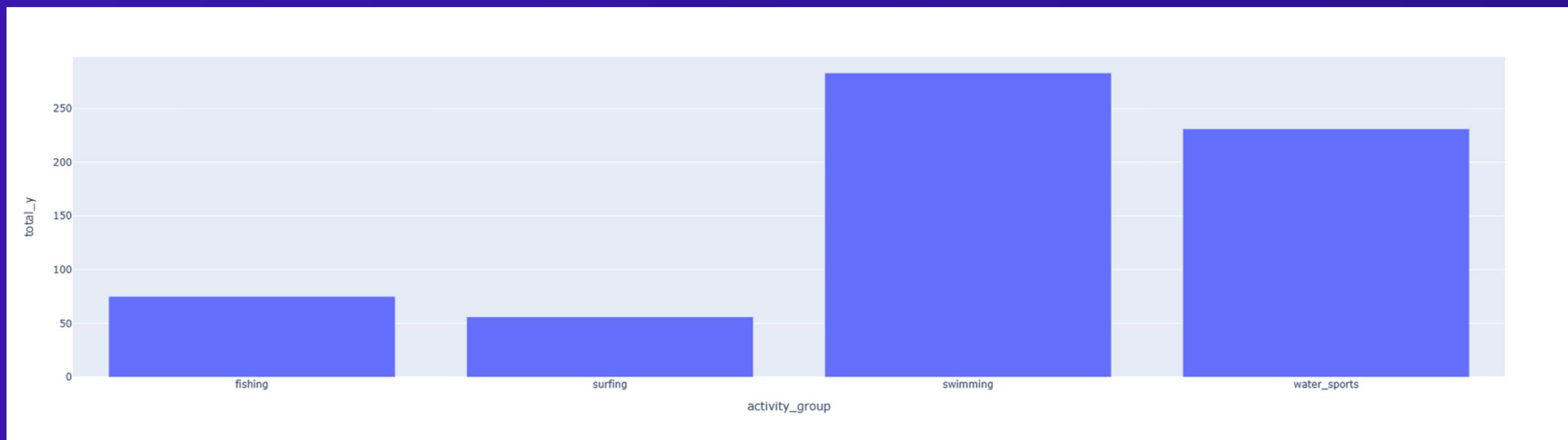


Findings

	activity_group	country	total_y	total_n	total_incidents	total_incidents_country	rank
77	surfing	United States of America	8	601	609	1658	1
59	surfing	Australia	23	202	225	868	2
74	surfing	South Africa	7	89	96	374	3
61	surfing	Brazil	4	34	38	87	2
72	surfing	Réunion	7	13	20	43	1
	activity_group	country	total_y	total_n	total_incidents	total_incidents_country	rank
137	swimming	United States of America	44	278	322	1658	3
81	swimming	Australia	65	97	162	868	3
128	swimming	South Africa	37	41	78	374	2
84	swimming	Brazil	20	14	34	87	1
110	swimming	Mexico	9	13	22	61	2
	activity_group	country	total_y	total_n	total_incidents	total_incidents_country	rank
56	fishing	United States of America	6	208	214	1658	4
0	fishing	Australia	12	182	194	868	4
47	fishing	South Africa	7	80	87	374	4
1	fishing	Bahamas	1	38	39	81	2
36	fishing	New Zealand	2	28	30	93	2
	activity_group	country	total_y	total_n	total_incidents	total_incidents_country	rank
199	water_sports	United States of America	39	474	513	1658	2
144	water_sports	Australia	71	216	287	868	1
190	water_sports	South Africa	19	94	113	374	1
145	water_sports	Bahamas	7	29	36	81	1
178	water_sports	New Zealand	6	23	29	93	1

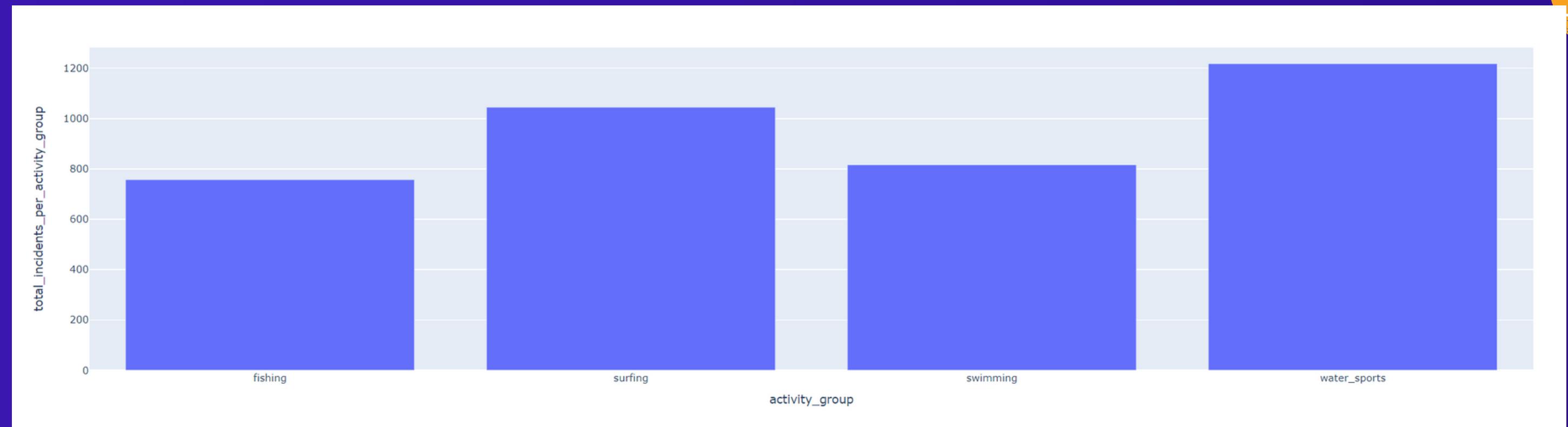
In this table we can see that surfing even the activity with more accidents has very low fatal ones and swimming even with low amount of accidents a very high fatal rate.

Findings



Overall amount of fatal accidents by activity

Findings



Overall amount of accidents by activity

Key takeways

01

Water Sports

Water sports in general have more attacks however once those sports is usually manage in group they are usually not fatal.

02

Swimming

Swimming is the deadliest activity. After external research it's due the lack of people around and attention that the activitiy bring.

03

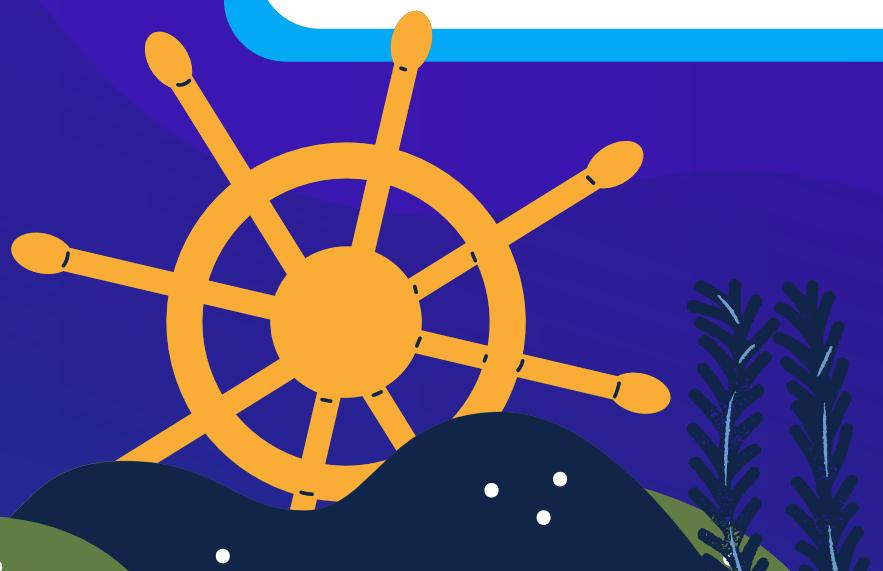
Surfing

Surfing is the most dangerous, but not deadly. Research externally result that the shape of board remind food, but after check in sharks tend to go away. Also the fact of surfers are in group help to in case of accident.

04

Fishing

Fishing tends to have a good amount of attacks. However not deadly and most of the times it's provoked and could be avoided.



Conclusion

Difficults

- The lack of good data lead to huge amount of time leading to cleaning it.
- Time and lack of time to work together.
- The lack of use of visual graphs libraries difficult the visual of the data consolidation pushing the team to use more time for it.

Learnings

- Data analyze require going beyond of the data available in order to understand the environment around to validate the solution.
- The creation of a good data take a long period of time and require a lot of planning before analyze.

Further Research

Research

The analyze should continue to go further analyzing influence of tourism in the shark attacks. Analyze the countries effort to minimize impact of the shark attacks.

Safety Measure

Analyze countries that have high number of sharks but have low number of attacks to understand safety measure used.

Thank You!

