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Final Project – How to choose a snowboard?

Project Summary:

Picking the right snowboard is an important first step to an enjoyable snowboarding experience. However, snowboards come in a variety of widths, lengths, profiles, and more. People might be overwhelmed by the handful of options.

My goal is to help the viewers with limited snowboarding experience understand the factors for choosing the RIGHT snowboard. Also, because of the poor snow condition in the new England area, the other goal is to help experienced riders pick a snowboard that is best for powder condition.

Introduction:

I found this dataset on Kaggle.com. This dataset collects data from 45 most common snowboard brands in north America, altogether 390 models for men's snowboard, combined with corresponding information in riding style, riding level, snowboard shape, camber profile, stance, flex, price and powder rating which gives us a lot of information to analysis what can affect the powder value of men's snowboard. The variables include:

- Brand: Snowboard manufacturing companies.
- Model: Companies' snowboard models.
- Riding Style: Where to use that snowboard.
- Riding Level: Which level people use that snowboard.
- Shape: Shape of snowboards.
- Camber Profile: Camber profile of snowboards.
- Stance: Where the foot stands on snowboards.
- Flex: Flexibility of snowboards.
- Price: Price of snowboards.
- Powder: The power of snowboards in powder snow.

The snow condition in the east coast of United States is typically icy and thin layer for most of the season and the snow condition suddenly become wet and slushy in spring. There are few opportunities for most riders who are based on the east coast to ride in powder snow conditions. They are not able to test the performance in powder in person. There is still a need for a good powder snowboard since every rider would want to go to Colorado, Utah and other places all over the world to enjoy the powder. Thus, it is necessary to have a dataset that can help us make the decision.

My goal is to introduce how to select a snowboard to beginners, help them get a basic idea of the fundamentals of snowboards so that they can find a board that fits them best. The other goal is to help advanced riders to analysis which board is best for powder. The last column of the dataset provides a very straight forward way to find out the performance in powder. Besides this column, we can also summarize from the other columns if a board meets

certain standards, the readers do not go to the performance column, and they can still draw the inference that it is a great powder board. Moving forward, if the reader wants to buy a board that is not on the list in the future, the reader will have enough knowledge and experience to choose the right board without actually riding and testing.

Related Work:

Although this dataset gives us a lot of information, it is still a one-sided view. I also go to the manufacturer's website and retailer's website for customer review to verify if this data is objective. The result turns out to be that this dataset is creditable.

I also rode on some models in person to test the performance in powder. I tried DOA by Capita, which has a poor performance in this chart; Proto FR by Never Summer, which has a good performance in the chart; and Dart by Korua, which has an excellent performance in the chart. Since they are all men's boards, they are all longer than my boards which offers extra buoyance. Apart from the extra buoyancy, Dart is the best among all three in performance, maneuverability and also look. DOA by Capita has a true twin shape, camber, medium flex, and centered stance, which makes it a great freestyle board. Proto FR by Never Summer is a directional board with rocker profile, medium/stiff flex and a setback of 20mm, which means it is great for freeride and performs good enough in powder. Dart by Korua has similar specifications as Proto FR, what makes it excellent for powder riding is the shape of its tail. It has a swallowtail which can cause the tail to sink into the snow and effectively cause the nose of the board to ride higher above the snow.

Methods:

I use d3.js, HTML, CSS to visualize the dataset and website. I implemented some CSS techniques to make the website look more fun and user interactive. The user could click on any image or tab when the mouse turned to cursor. There is also a sidebar that serves as directory. The sidebar clearly summarizes the content of the webpage, and it is properly linked to the corresponding content if you click on the sidebar. I also use some simple JavaScript codes to help realize the click function over images and tabs.

For the visualization part, I chose donut charts and bar chart to represent the percentage and count of each stance and performance. I also applied an animation for the text(percentage) on the donut chart and a tooltip for the bar chart to show the count number. It turns out to be that usually the more set back the better the performance in powder. I tried to make those two charts interactive but failed.

I chose scatterplot to represent the relationship between price and camber profile and powder performance for each snowboard model and found out there is not a necessary relationship between price and performance, the snowboard profile plays a more important role. I also applied a tooltip and a zoom and pan function in this chart.

Discussion & Future Work:

The audience should have enough knowledge on choosing snowboard after visiting my website. I explored and implemented several onclick methods either by CSS or JavaScript. I would potentially increase the diversity of the chart in the future.