
R FOR DATA SCIENCE

FINAL PROJECT ASSIGNMENT



NO-CANCEL



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NO-CANCEL

We are a service dedicated to reducing cancellations and recommending policies to minimize incurred losses

1. THE DATASET

The dataset was downloaded from Kaggle and is called Hotel Reservations Dataset:

<https://www.kaggle.com/datasets/ahsan81/hotel-reservations-classification-dataset>. The data was uploaded three months ago by Ahsan Raza, a data expert from Oman.

Hotels are a major industry, however, it is a demanding industry where customer service has to be balanced with doing what is best for the company. Hotels are often places a person visits once and never returns to, so it is difficult for hotels to acquire regular customers and every sale is often very important. Rooms are often booked months if not sometimes a year in advance. In such cases canceling a booking may cause losses to the hotel and sometimes due to fines, to the consumer.

I became interested in this dataset when I realized how many factors affect whether or not a person may choose to cancel their booking. I was also interested in the different tactics hotels use to ensure that their customers have a good experience, without the hotel losing money.

Hotels can add exorbitant cancellation fees to their deals, or offer to give free cancellation even 24 hours before. It all depends on the situation, the time span this is happening in, how much money the hotel stands to lose or gain, what kind of room is being sold, how much it costs, the list can keep going.

I decided to analyze the data to gain better insight into this industry and try to see for myself, what some of the factors that actually do matter to consumers regarding cancellations are, and want to recommend that hotels adopt them to better inform their policies.



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2. THE DASHBOARD

I specifically designed the dashboard to be simple and intuitive. I wanted the user to be able to look at it and immediately find it user-friendly.

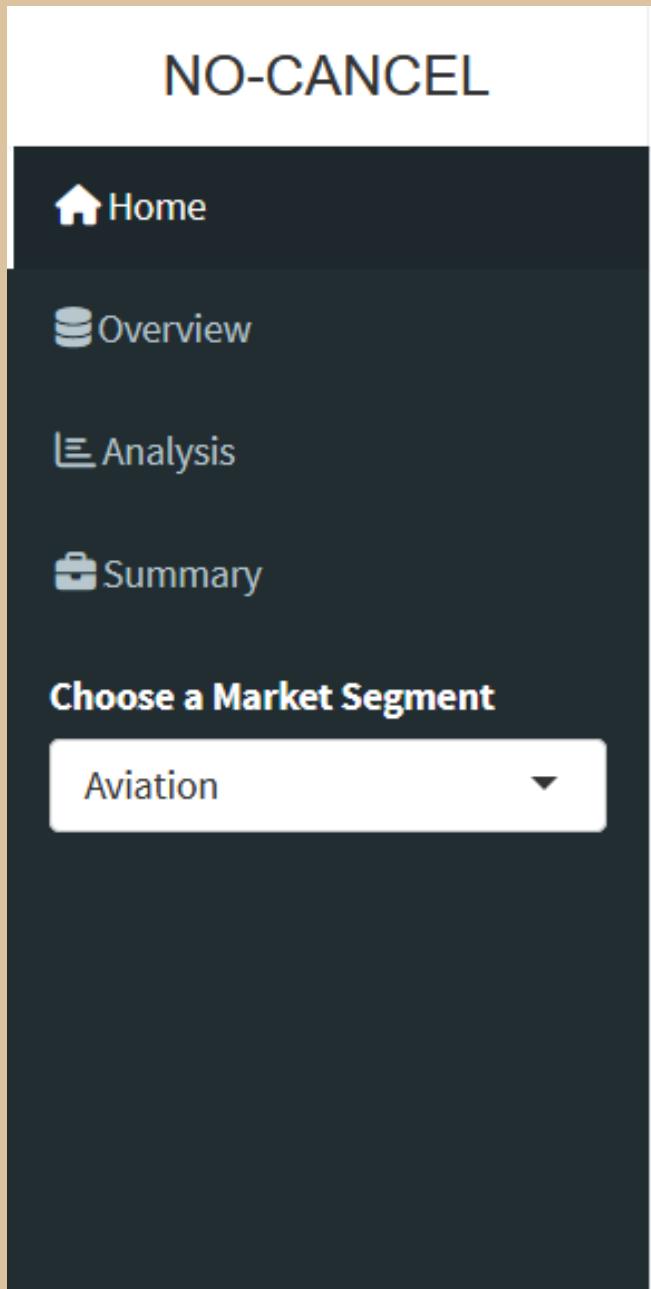
I included explanations, easy to understand metrics, summaries and even an introduction because I the dashboard is meant to be used by people without much experience in analytics. The dashboard was made to inform people especially since I wanted it to influence policies and make it easier for people who want to decide how to price a room, or whether to put a cancellation fine to understand how the consumer will react, and what they want.

In this way smaller hotels may be better informed about what they should do, and thus be able to attract customers when they want to, make profit on premiums when they don't, reduce cancellations, and maybe improve their customer's experience leading to repeat customers.

It would also help inform hotels what their selling points are and which of their services their customers prefer so that they can improve them and also ensure sufficient stock.

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DASHBOARD DESIGN



The Dashboard consists of four different pages, two of which contain multiple tabs.

The pages are broken down into Home which is an introduction page explaining the dashboard, Overview which explains the data, how much certain products are used and preliminary trends, to inform the user.

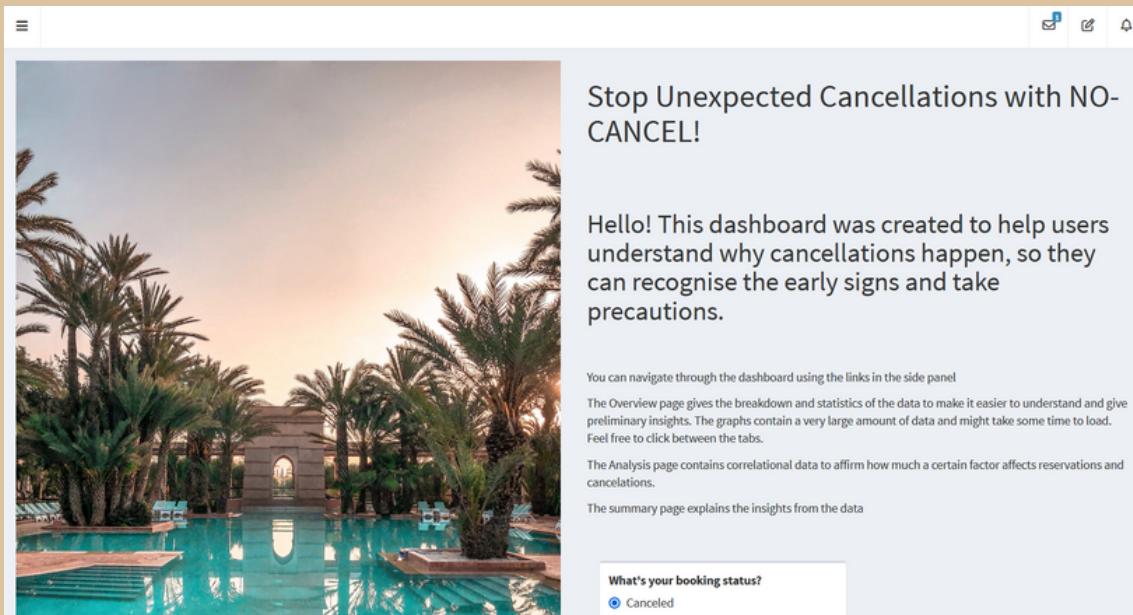
Analysis contains all the correlations and how certain variables affect cancellations. I left out the ones that were inconclusive or did not add any insights.

Summary simply summarizes the insights to make them easier to understand.

The Sidebar shows the four tabs with icons for easy understanding. I added a widget to make it more interactive for users. It lets them choose what market segment they are most commonly a part of. It can also possibly help with data collection for future improvements.

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3. THE TABS



The Home page gives an overview of my dashboard and how to use it. It has a black-and-white colour scheme in the interest of being neat and easy to understand.

I added a picture of a resort to bring some colour to the home page and make more appealing to the eye.

I gave an explanation on how to use the app and what each tab was for.

In addition I added some icons with links to my LinkedIn, a welcome message, and a link to make it easier to find the dataset on Kaggle.

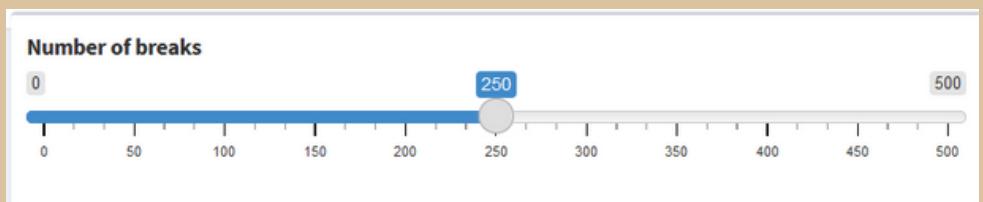
At the bottom I added a radio button widget to entertain and make it a little more interactive.

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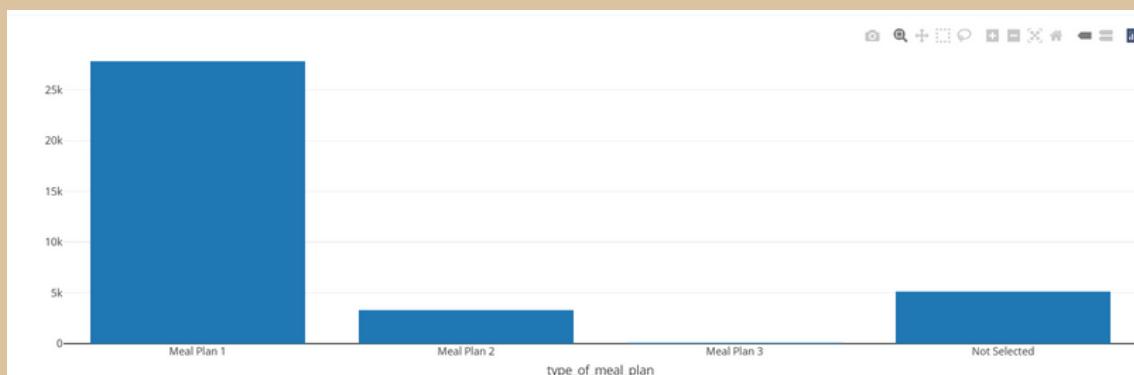
3. DESIGN ELEMENTS



Above is an example of the tabs I have created within a page in order to put data that is related to a common topic together. These are some of the tabs from my Overview page



Above is a slider that I have used in the Overview section of my dashboard. It limits information to a certain amount of data to give an idea of how distributions may change with time



Above is an example of a graph that I have used in order to inform users about the data and show them how certain features are more popular

Correlations with Booking Status



An example of the correlations so that consumers can see how different factors affect the data.



I used info boxes to present important information to users about the insights that have been found. All these boxes can be found in the summary page.