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MIBA

Exercise - Prototyping with Streamlit

Which model did you choose, from which course, and why?

I chose the hotelbooking.csv dataset from our Cloud Computing course last term because I found it interesting to build a Streamlit app that allows hotels to visualize their data more effectively.

What is the utility of the prototype?

I decided to develop a Streamlit application to help hotels analyze their booking data more efficiently. The prototype allows users to visualize reservations over time, identify trends such as customer loyalty and guest origins. This tool can support data-driven decision-making, such as optimizing promotions based on key holidays in countries with high loyal customer rates or implementing marketing strategies to reduce cancellations and increase customer retention.

Main difficulties found?

One of the main challenges was deciding which variables from the dataset were most relevant and how to structure them effectively. Another difficulty was deciding which features to implement, because there are a lot of different options available in Streamlit's API. Some features, like the heatmap calendar and st.tags, didn't work as expected, so I had to investigate alternative solutions such as st.multiselect and a normal calendar. Additionally, once I selected the features, figuring out how to use them correctly in Streamlit was a bit challenging at first, but after some trial and error (and some help from ChatGPT), I was able to make it work.

I took inspiration for this Streamlit app from the following features:

https://github.com/gagan3012/streamlit-tags - st.tags

https://github.com/aswan-heart-centre/streamlit_nivo - calendar heat map that I wanted to implement

https://github.com/reyemb/streamlit-plotly-mapbox-events - just to get inspiration but I used chorepleth map

VIDEO: Recording-20250304_133444.webm