CS Forecast Exercise

The Task
Using the dataset provided, we'd like you to build a forecast for customer service email volume at the daily level until December 31, 2021. The purpose of the forecast will be used to determine our daily customer service staffing needs based on the email volume of the day.

Please build a 15-20 minute presentation going over your process and results. What makes this a robust model? Is there seasonality in the model? Are there specific dates or holidays where we expect to see unusual behavior?

You will present your findings to a mixed panel, including at least one Data Scientist. Be prepared to discuss your methodology in detail, as well as your findings. We want to assess your technical and analytical skills as well as your ability to present findings to stakeholders.

The Data
Link:
https://docs.google.com/spreadsheets/d/1R_BybyRVtKxKj7qObH1YbUNYksh5JjKVm7wpXAjihkI/

Feel free to download the data.

The dataset contains simulated data for Spotify customer service email volume, subscriptions, and MAUs, but the patterns within are similar to real data.

Email, subs, and MAU data are available from January 1, 2019 to May 31, 2021. Forecast subs and MAU were estimated in March 2021. You do not have to use every variable listed for your final model.

Column Name	Description
date	Date
email	Number of emails, i.e. email volume
subs	Number of total subscribed users
subs_standard	Number of subscribed users on the standard product, i.e. $9.99 Premium subscription

subs_student	Number of subscribed users on student subscriptions
subs_family	Number of subscribed users on family subscriptions
f_subs	Forecast of total subscribed users
f_subs_standard	Forecast of subscribed users on the standard product
f_subs_student	Forecast of subscribed users on student subscriptions
f_subs_family	Forecast of subscribed users on family subscriptions
mau	Number of Monthly Active Users, i.e. users that have a stream in the last 30 days
f_mau	Forecast of Monthly Active Users.