

Commutatus Data Analytics and Data Science

Technical Assignment

This assignment has three exercises:

1. The first exercise has a link to an SQL platform where you can run queries based on the challenges and submit your solution.
2. The second exercise has a link to data on a Google sheet that you are expected to visualize on Looker Studio.
3. The third task is to build a chatbot. This is optional, you won't lose anything if you don't do it, but you will get brownie points if you're able to do it!

Further requirements and output formats are detailed below:

Task 1: SQL

Challenge link:

<https://app.db-recruiter.com/session/0d80d6eb-8d00-4a2b-9601-019b25607779>

Task Overview

1. Begin the exercise by clicking on the Challenge Link
2. There are 3 queries to be executed, you can attempt them in any order and make as many changes as you'd like until you hit "Submit Solutions"
3. The output in the "Results" window when you hit "Run" is what we'll see after you submit.

Task 2: Google Data Studio

Dataset:

<https://docs.google.com/spreadsheets/d/1rSKvHzpB6A00rBUdzCtaptqq81Lt5tVlzZ5-45E0hmQ/edit?usp=sharing>

Task Overview

1. Open up [Looker Studio](#) and connect to the Google sheet mentioned above.
2. Create a new report and add the following elements:
 - a. Table with song name, popularity, energy, loudness - sort by descending order of popularity

- b. No. of songs per album (pie chart)
- c. Song name, length of song (Currently in milliseconds, to be converted to minutes)
- d. Add a date range filter to filter songs by release date

Submission

Please submit the link to your Looker Studio dashboard.

[Optional] Task 3: Build a Swiftbot

Task Overview

Create a question-answer chatbot using the [Langchain framework](#). You have the flexibility to choose any embedding and language model of your preference. The chatbot should be able to answer questions based on the thesis: [Celebrity, Music, and Public Persona: A Case Study of Taylor Swift](#).

Further Details

1. Generate embeddings of the PDF document linked above and store them in a vector database of your choice (e.g., [Activeloop](#), [Chroma](#), [Pinecone](#))
2. Ensure that the chatbot only responds to questions with answers found in the provided PDF
3. The bot should also return the source text along with the response
4. Custom prompting is optional but encouraged to make the bot give more accurate answers
5. Create a simple UI for the chatbot using [Gradio](#) or [Streamlit](#) that allows a user to enter a question and see the answer from the bot.

Sample Questions and Answers

1. What is the main theme of the study?
The main theme of the study is to illustrate inequality as a macro-level issue and evaluate and change oppressive systems, particularly those with misogynistic motivators.
2. What is a record deal?
A record deal is a legal agreement between a musical artist/s and a record company that serves as a binding contract where both parties agree to produce a

certain number of musical works together, officially referred to as masters. The artist typically agrees to spearhead the creative aspects of the endeavor, while the record company controls production and distribution of the finished product. These deals are also known to include clauses pertaining to artist codes of conduct, performance obligations, and musical style recommendations and limitations.

3. How has Taylor Swift's presented public persona evolved comparatively throughout the early and late stages of her career?

Taylor Swift's public persona has evolved in terms of her gender, age, and music. She has had to grapple with her own identity in relation to her celebrity status, position, and longevity in the American music industry, her relationship with autonomy as an artist, and her experiences being commercialized and commodified by her superiors and the public. She has also had to contend with sexist culture and institutions.

Submission

Please submit the link to your Github repository and any necessary documentation by November 20th.