Data Pipeline Implementation for YouTube Data

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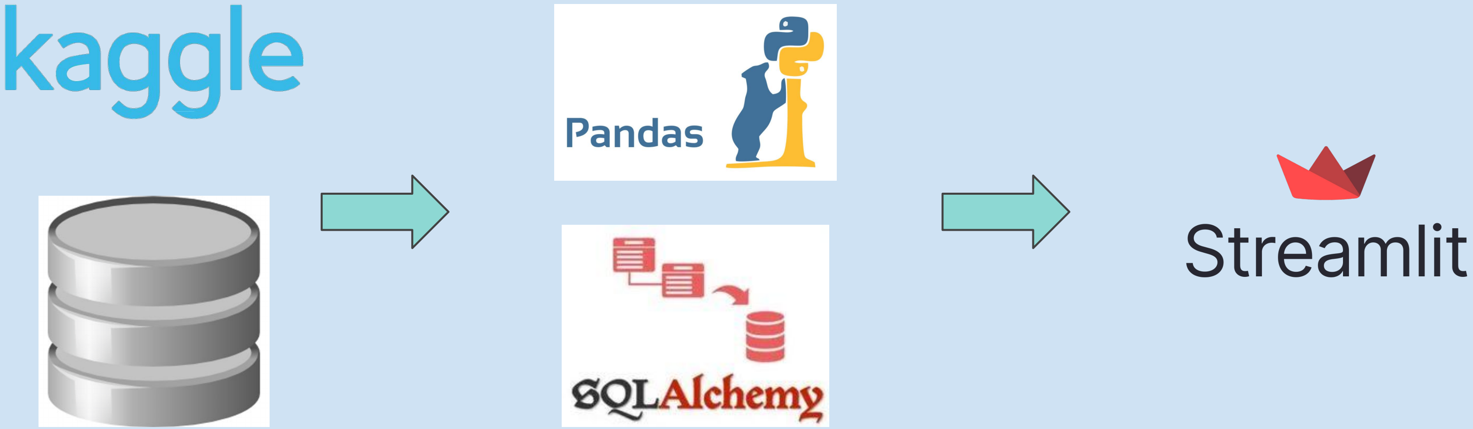
Goals:

- Ingest YouTube Trending Video Data into Database
- Build clean processing Pipeline
- Perform EDA to find interesting data insights
- Deploy interactive web application

Workflow:



Data:

- 500,000+ (and counting) trending YouTube Videos from the past 9 months
- 11 Countries (India, USA, Great Britain, Germany, Canada, France, Russia, Brazil, Mexico, South Korea, and, Japan) in separate tables
- 50,000+ Rows per country

- Updated daily with 200 trending videos

- 16 feature columns (Channel Title, Views, Category, Trending Date, Likes and Dislikes)

Data Cleaning:

- Description column
    - YouTube allows up to 5,000 characters (1-2 pages!)
    - Information not very useful, no common format/convention
    - Removing Description = 70% file size reduction!

Design: Web Application

- Built user-friendly, interactive web application via Streamlit

- Algorithms and filtered aggregation with a few clicks!

- Allows for user input/selection (Country, Category, Date)
  - Returns visualizations
  - Can benefit marketing/advertising teams

Data Insights:

- Differences in media consumption between countries
  - Most popular YouTube channels
- Case Study: KPOP
  - Every country has a KPOP channel in Top 10 Music Channels, except for India

Future Work:

- Heroku to deploy Web App and DB
- Utilize YouTube API to request more specific data
- Automation to download updated dataset daily