Music Recommendation Architecture

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Objective

Recommend music for users based on their interests and playing history by using existing and streaming data
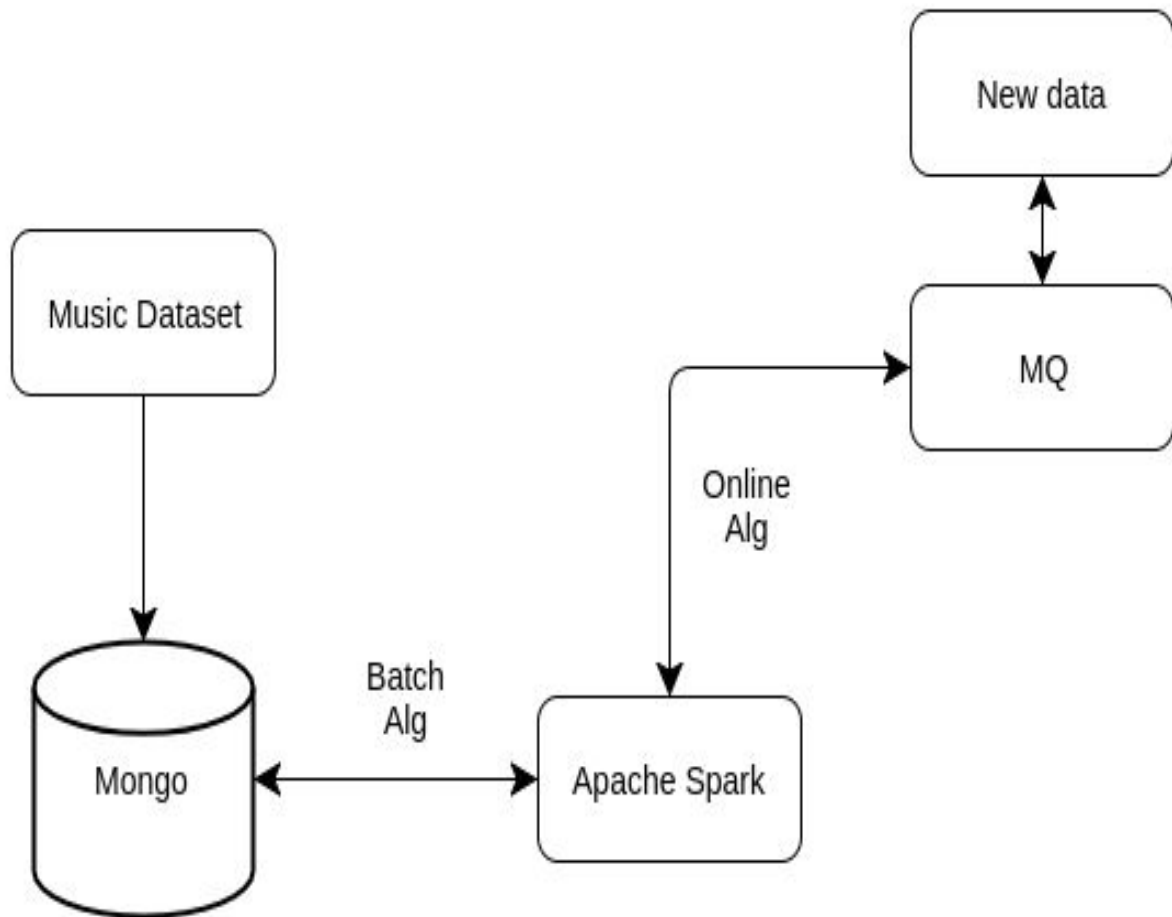
Data

Two major data sources

- Music data collected from the Internet as pre-stored data for training
- Live streaming data from the Internet or generated synthetically

Possible sources: Last.fm, Spotify, or some generated user data

Architecture

Technologies used:

- Scala (for the main app)
- Python (for other scripts)
- Spark
- MongoDB
- Kafka MQ
- Docker

Plan of Implementation

-   Explore possible sources of data collection
-   Build scalable databases (Mongo) to store music data
-   Implement Spark to do Map/Reduce (e.g., feature extraction), and do machine learning (online or periodical offline) for music recommendation models
-   Store the trained results to database
-   Retrieve the model data for User and generate recommendation list (Content Matching)