

Analyzing Trending YouTube Videos



Team 1

Presenters



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Introduction

Predictive Analytics Dashboard

- **YouTube Data API v3**
 - Semi-structured data obtained from the API.
 - Volume, Velocity, Variety, Value.
- **Analyzing Trending Videos**
 - Understanding Content, Audience based on location and time.
 - Learn Advertisement insights.
 - Performance Tracking.
- **AWS Technologies**
 - Use Aws services for scalability as per requirements.
 - Secure Storage and monitoring.

Problem Statement



Hard to keep up with evolving audience interests



Video creators lack insights into optimizing content



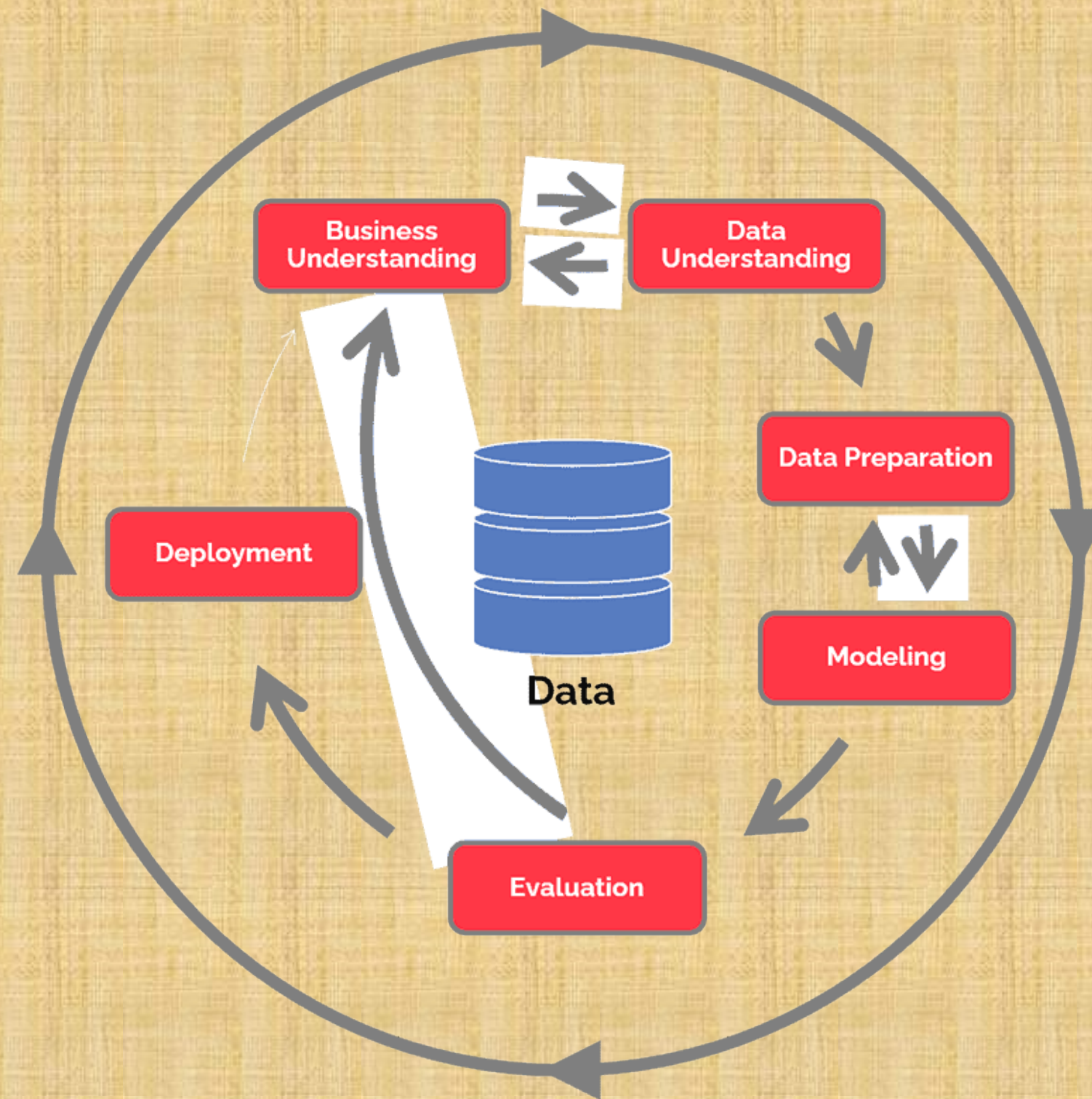
Lack of Long-Term Strategy for Content Creators

Solution

Predictive Analytics Dashboard

- **Trending Videos Analysis:**
 - identifying current trends in video topics, formats, and content styles.
 - Informed about what's capturing viewers' attention.
 - Adapt content to align these trends.
- **Engagement Patterns:**
 - Learn viewer engagement metrics based on video length, upload frequency, and publishing times.
 - Understand how audience preferences may be changing.
 - Maximize engagement and reach a wider audience.

CRISP-DM METHODOLOGY



Project Execution Phases

Data Extraction

Data Transformation

Data Loading

Secure Storage

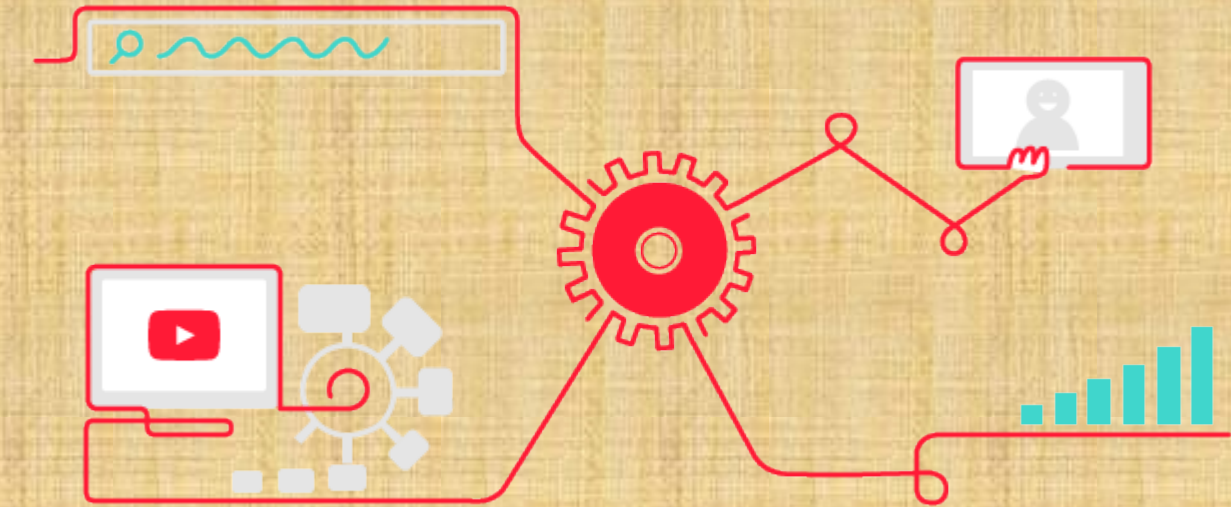
Monitoring

Data Visualization

Data Analysis

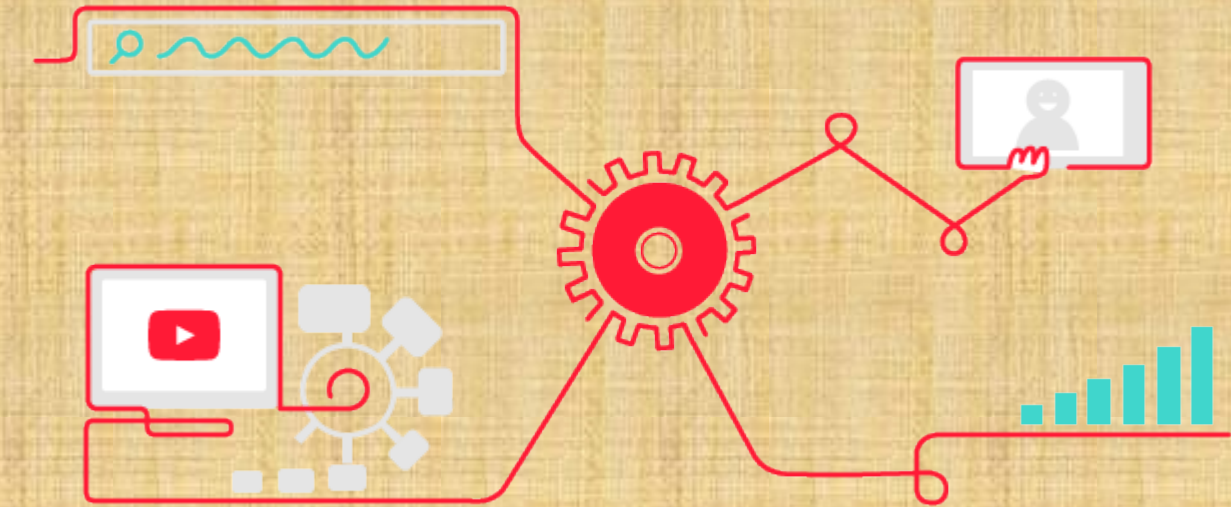
Data Extraction

- 1.Data Identification: Specify what data is needed (trending topics, video views, likes, etc.)
- 2.Data Access: Set up access to the YouTube Data API v3.
- 3.Data Retrieval: Use the API to retrieve the desired data.
- 4.Data Storage: Store the extracted data in a secure and accessible location.



Data Loading & Secure Storage

- After extracting relevant data from YouTube using the API, we securely load it into a designated Redshift and Amazon S3.
- This ensures the data is readily available for further processing and analysis within the project.



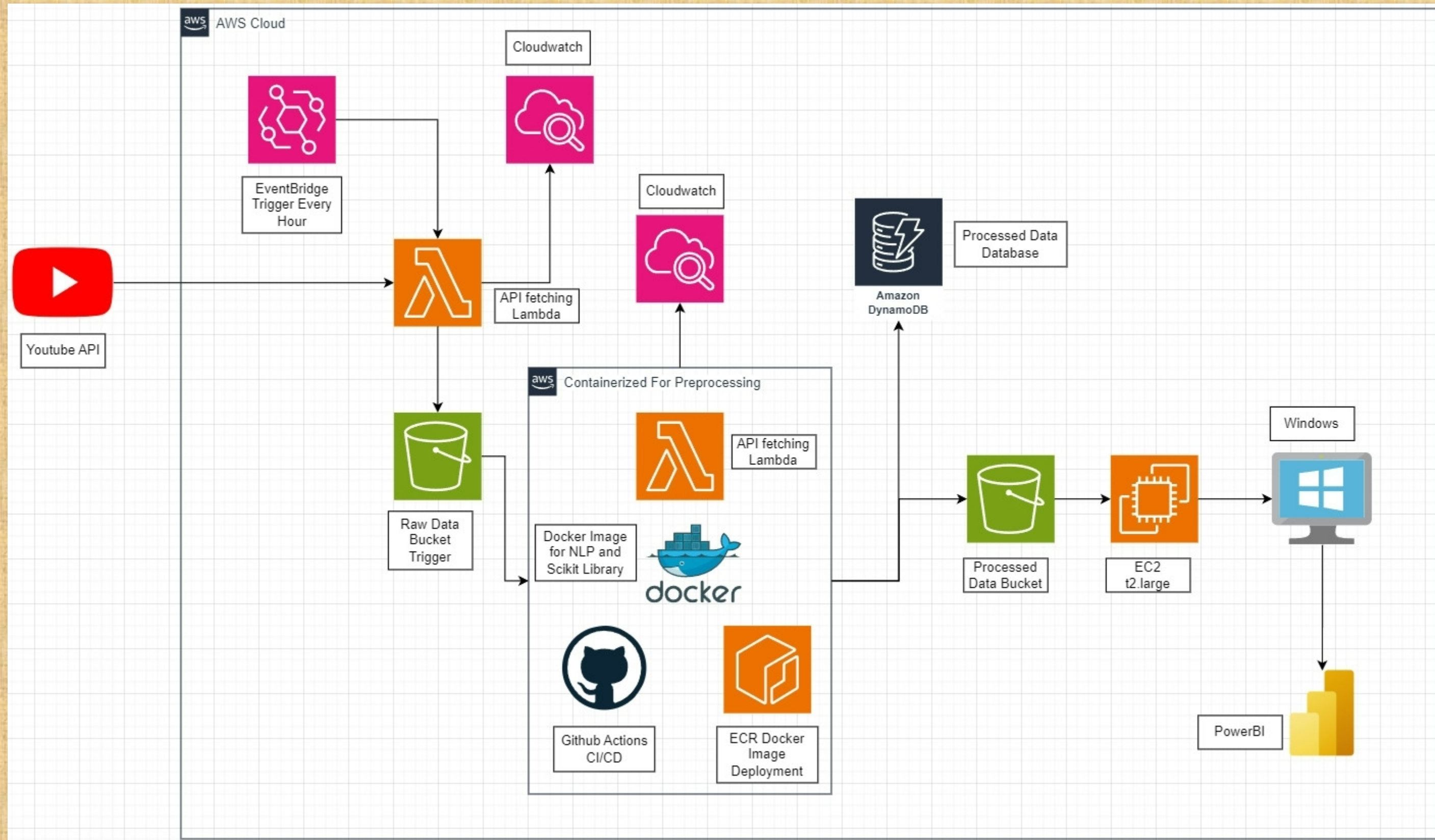
Monitoring data

- Data Processing
 - Involves cleaning, transforming, and preparing the extracted data for analysis.
 - Techniques include handling missing values, correcting inconsistencies, and formatting data for compatibility with Cloud watch.
 - The processed data is stored in Amazon DynamoDB
- Data Monitoring
 - Amazon CloudWatch: A monitoring service for tracking metrics, logs, and events from AWS resources. CloudWatch can be used to monitor the health and performance of the data processing pipelines.

Data Analysis

- At this stage the focus is on extracting knowledge and insights from the processed YouTube video data.
- We utilize a combination of exploratory data analysis (EDA) techniques, statistical modeling, and machine learning algorithms to gain deeper insights into viewer behavior and content trends.

workflow of project



Tools and technologies

- YouTube Data API v3
- AWS Lambda
- AWS S3
- AWS CloudWatch
- EC2
- Amazon Dynamo DB
- Power BI



AWS CloudWatch



AWS Lambda



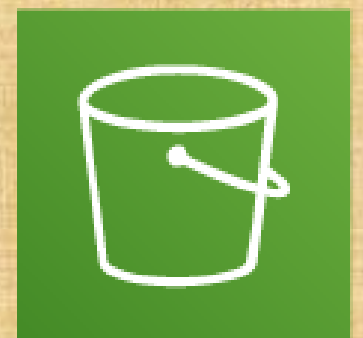
Amazon
EC2



Power BI



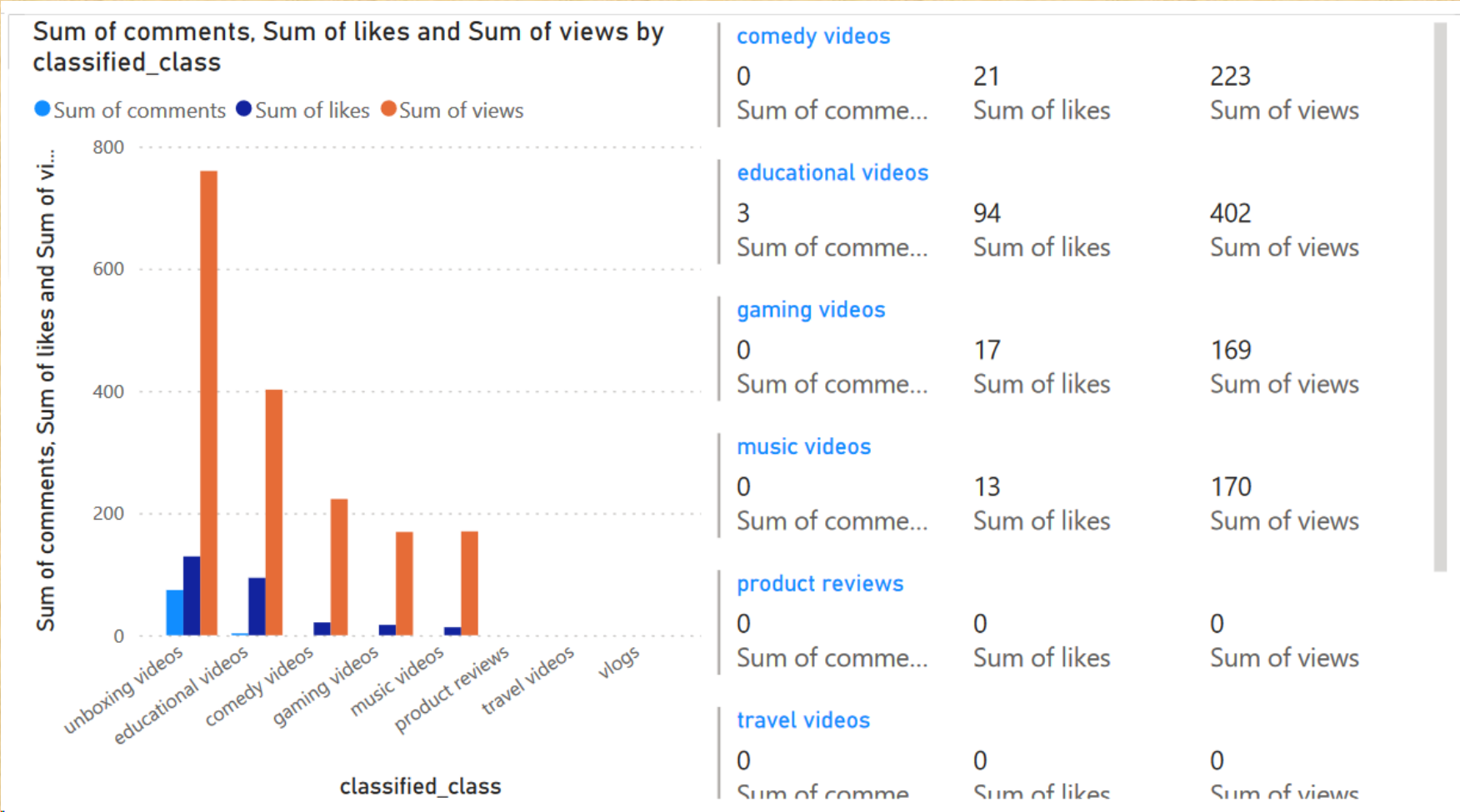
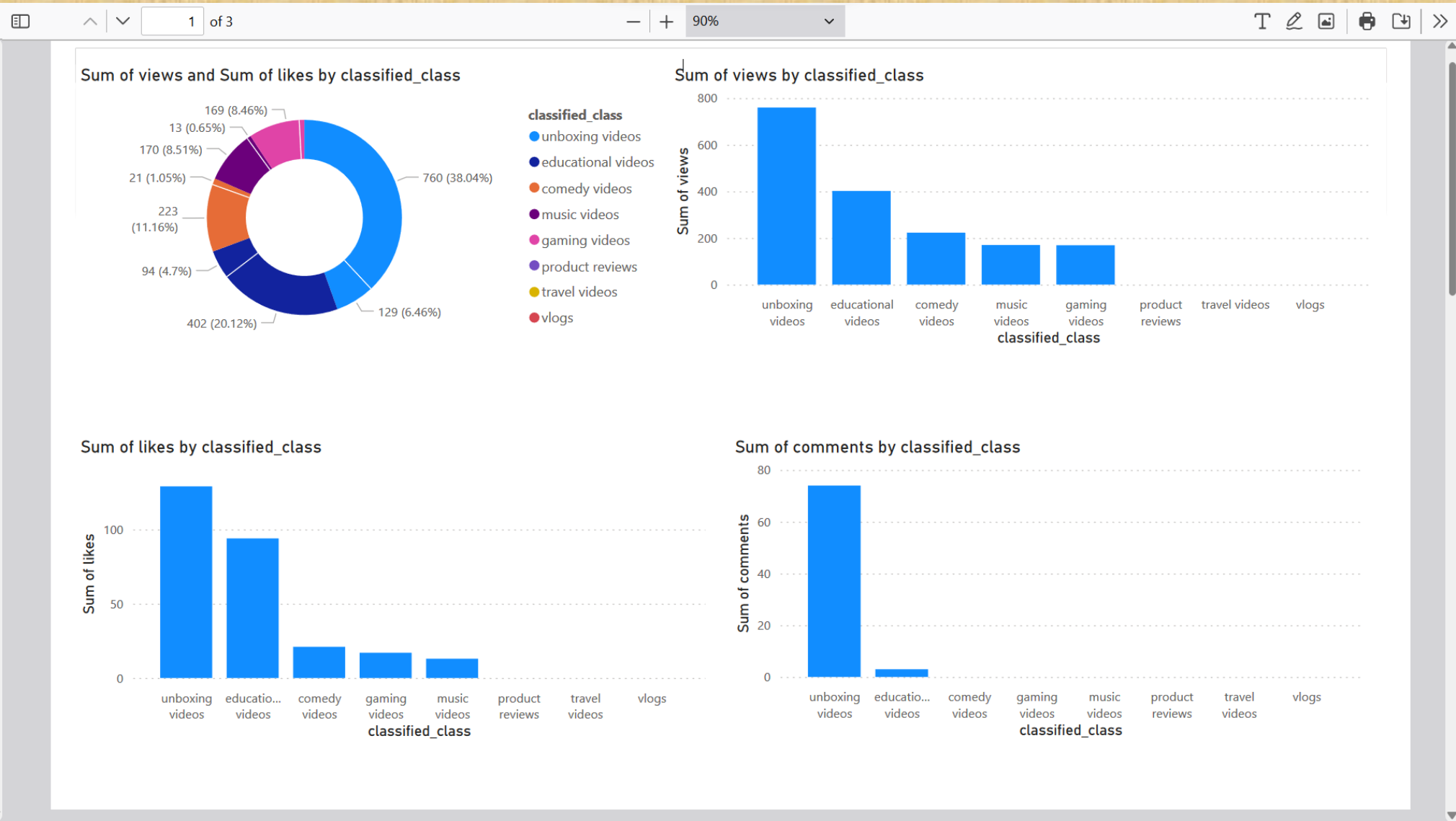
Amazon
DynamoDB



Amazon
S3

Results

- Screenshot of the Power BI dashboard showcasing various visualizations such as:
 - Trending video topics and formats.
 - Viewer engagement metrics (likes, comments, views).
 - Time-series analysis of video performance.
 - Comparative analysis of different content styles.



Thank

you!