CS552: Introduction to Cloud Computing

A presentation on

Comprehensive Movie Review Analysis System using Microservice-architecture”

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Motivation

- Understanding the working of text-analytical system deployed on cloud.
- Deployment of several layer microservices architecture for NLP-based application.

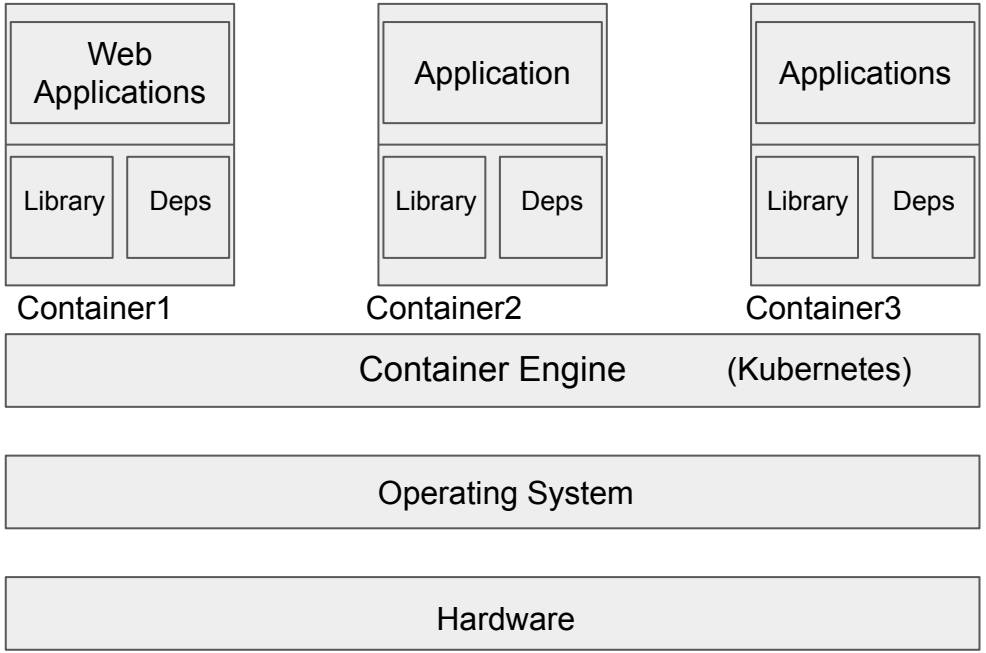
Goals

- To develop the Movie Review Analysis System using Microservice-architecture.
- To explore the services provided by Google Cloud for NLP.

Introduction

- Sentiment analysis is contextual mining of text which identifies and extracts subjective information in source material.
- Extensive application of Natural Language Processing domain.
- Web scraping is a term for various methods used to collect information from across the Internet.

Block Diagram



All containers use the same cloud storage

Container1: In this the web application is deployed.

Container2: Makes API Calls to IMDB and fetches the data.

Container3: Performs sentimental analysis on the fetched data and sends the data to the container.

Figure- Block diagram of proposed approach.

Proposed Google Cloud Services

- **Google Cloud Pub/Sub-**Ingest events for streaming data in operational databases.
- **Google Cloud Natural Language API-** Derive insights from unstructured text using Google machine learning.
- **Google Data Studio -** Create reports and charts to visualize the BigQuery data.

Working

1) User enters the text to search for the review in the Web Application which is deployed in container1 and sends the signal to container2 to fetch the data
2) Container2 makes API calls to fetch the data and stores the data in a shared cloud storage and sends signal to Container3
3) Container3 performs data filtration, text analysis, classifies the reviews as positive or negative and notifies the Conatiner1
4) Container1(Web Application) dynamically display the user comments once classified

Conclusion

- The proposed system provides a approach for analysis of movie review based on microservices architecture and GCP services.
- Involvement of Web-scraping, Natural Language Processing, Cloud computing & Data analytics.

References

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