



Reddit Stock Analysis using AWS Cloud Analytics Services

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Objective

**Finding out about stocks before they make the news
using Reddit Data , Nasdaq Data & Cloud Analytics
Services from Amazon Web Services.**



Introduction

- **Reddit and WallStreetBets blew up Gamestop's Stock**
- **Identifying the stocks which are being discussed on Reddit.**
- **Understanding the sentiment of the overall conversation.**
- **Automating the workflow for seamless user experience**
- **AWS Cloud Analytical Services**
- **Serverless Architecture**



Executive Summary

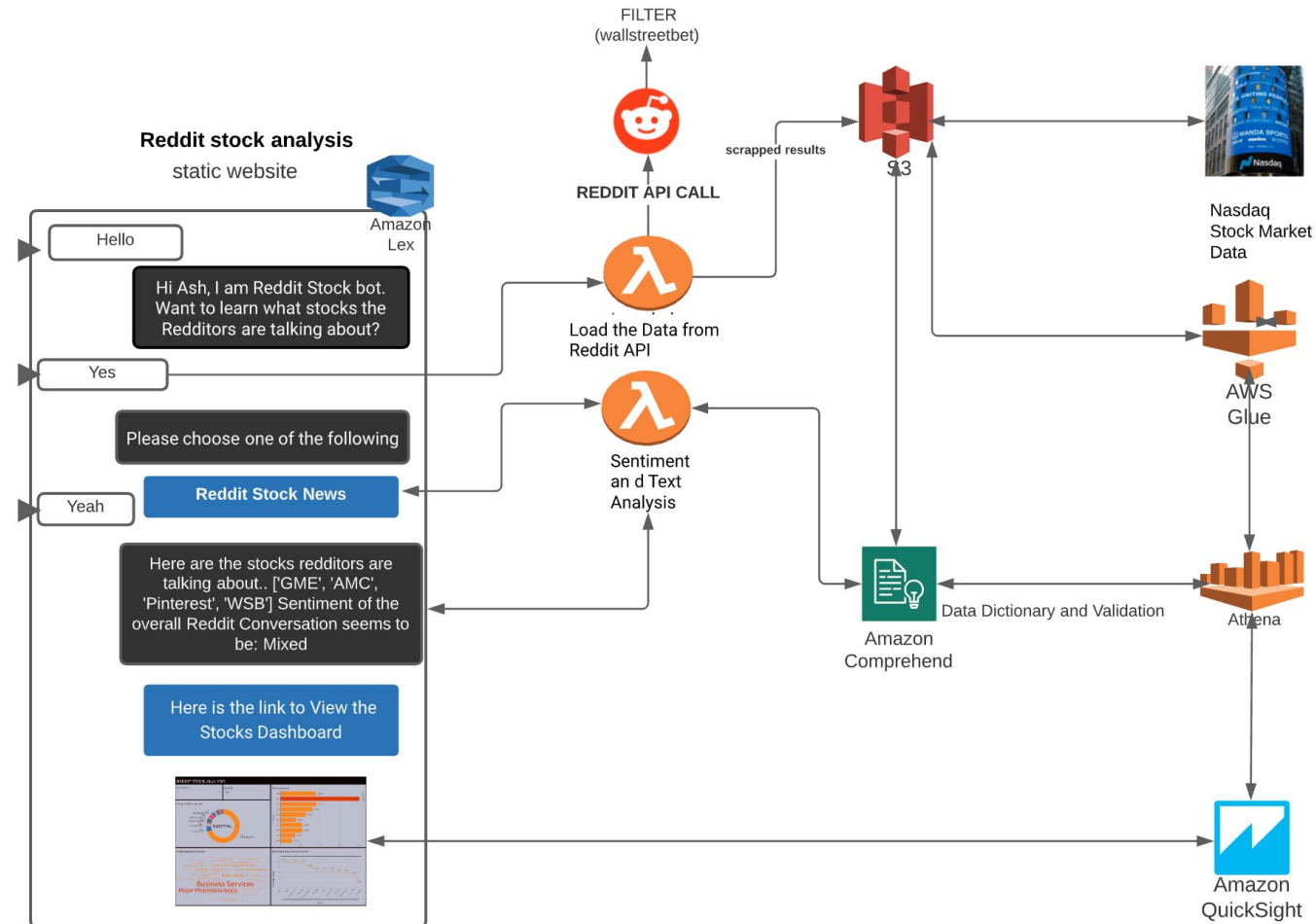
- **User Chatbot interaction**
- **Reddit data and Nasdaq data**
- **Stocks Names and overall Sentiment of discussions**
- **Interactive Dashboard to understand market trend**



Assumptions

- **Redditors on the channel “/WallStreetBets” discuss only about stocks & option trading.**
- **We are analyzing the top 100 trending posts of reddit only assuming the top 100 posts are the ones which are highly upvoted and active on the “/WallStreetBets” channel.**
- **Nasdaq has been the place for the fast-growing stocks thus we have considered Nasdaq stocks data in our analysis.**

Architecture Design



AWS Services

- **Amazon Lex** : Conversational User Interface
- **AWS Lambda** : Lambda Triggers to collect data from Reddit upon specific Lex Intent.
- **Amazon Comprehend** : Text Analytics [Detect Entities & Detect Sentiment]
- **Amazon S3** : Storage of the Output files [reddit scrapped data & nasdaq stock data]
- **AWS Glue & AWS Athena** : Athena Table for the Nasdaq Stocks Data
- **Amazon QuickSight** : Interactive dashboard allowing users to visualize the stock data attributes.



Amazon
Lex



Lambda
function



Amazon
Comprehend



Amazon
S3



AWS
Glue



Amazon
Athena

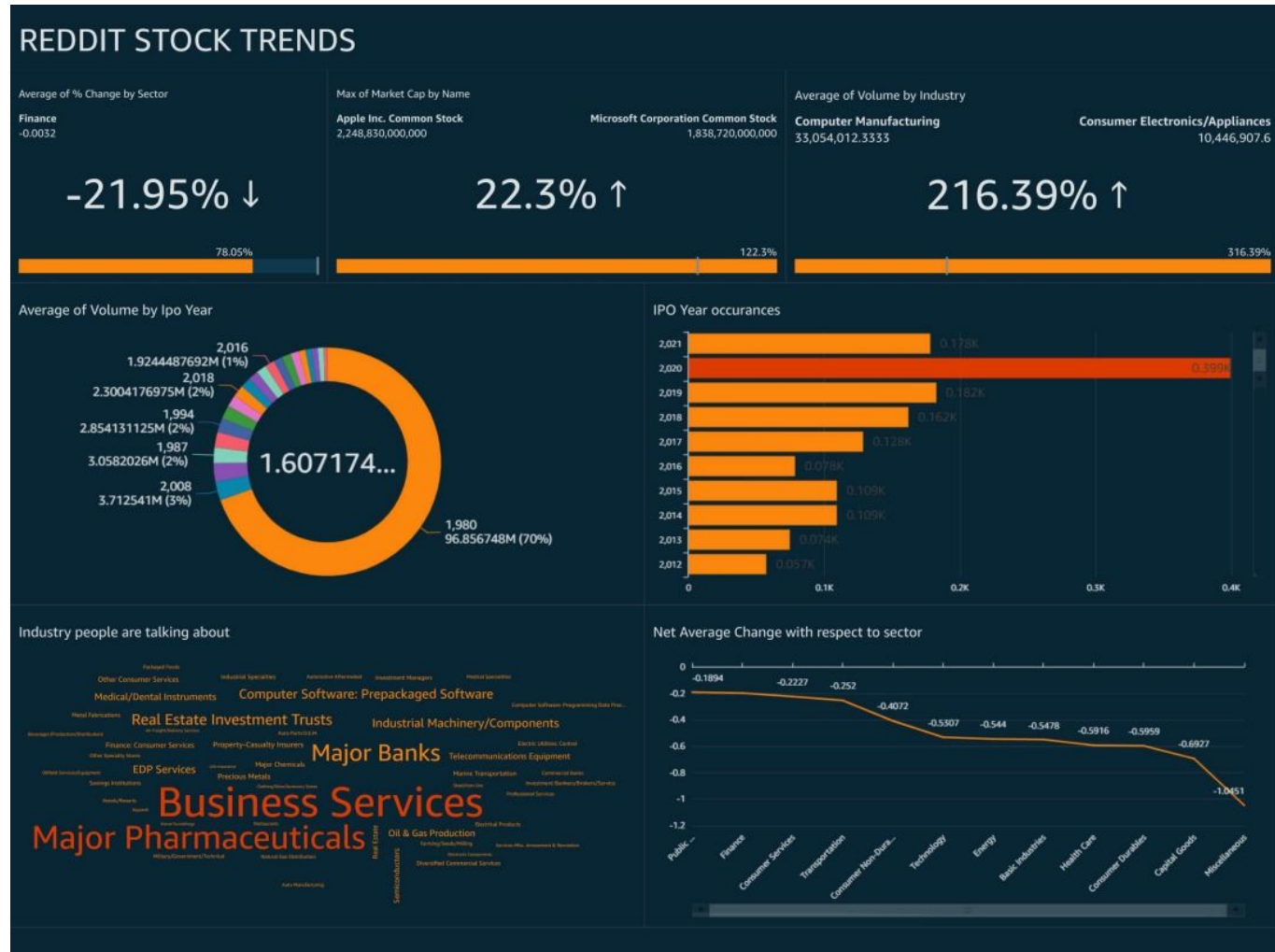


Amazon
QuickSight



DEMO

Dashboard Visualizations





Challenges

- **Limitations in the size of data that can be analyzed at a time by Comprehend.**
- **Limitations on the execution time of the lambda function used in fulfilling an intent.**
- **Limitation with the publicly shareable quicksight dashboard , as these links come only with premium subscription.**



Future Scope

- **Adding additional stock data attributes to the workflow allowing the user to deep dive into the history of the respective stock.**
- **Adding NYSE stock data along with the existing NASDAQ stocks data.**
- **Can Incorporate more intents related to a specific stock over the conversational Interface.**
- **Provide sufficient data for decision making.**
- **Near Real Time Stock data collection and Analysis**



Conclusion

- **Thus our solution delivered**
 - **Provides a Conversational User Interface deployed on a webpage**
 - **Allows the User to understand the stock trends on Reddit**
 - **Allows visualizing the Stock Attributes using Interactive Dashboard**
 - **Is a Intent Driven Data Flow Pipeline**
 - **Is a Serverless Architecture**

- **Utilizes the AWS Cloud Analytics Services**



References

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Thank You

Questions?