

News On The Go

How targeted advertising benefits
the companies and the users

Final Presentation

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COEN 6313 Programming on Cloud



Group - 11

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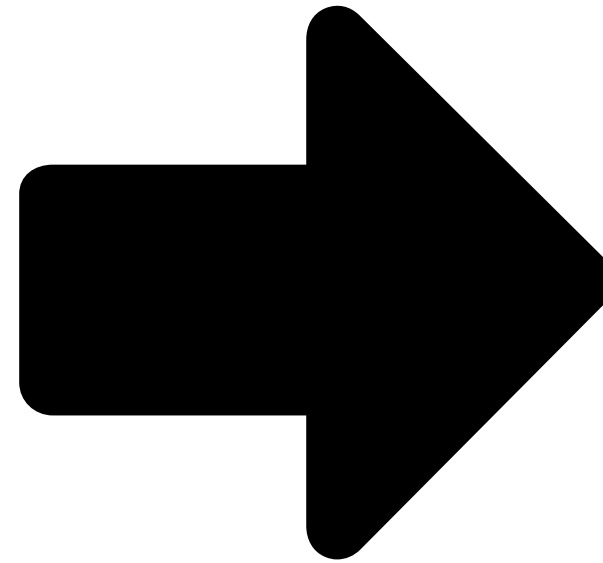
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Pranav Vachhani (40168567)



Conventional advertising



**50% off on restaurants
near you !! Grab the deal
now!**



Targeted advertising

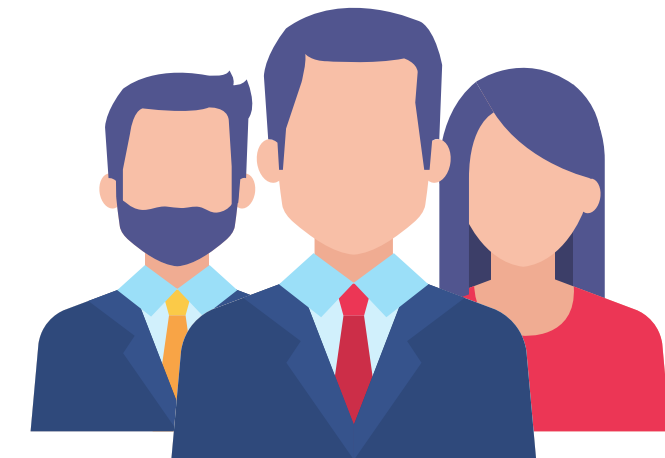
Web Service

An News application where different advertisers can reach their potential customers through targeted advertisements

- Provides users an one-stop location for global news.
- Provides advertisers to publish and make awareness for the product they are advertising and targeting customers.

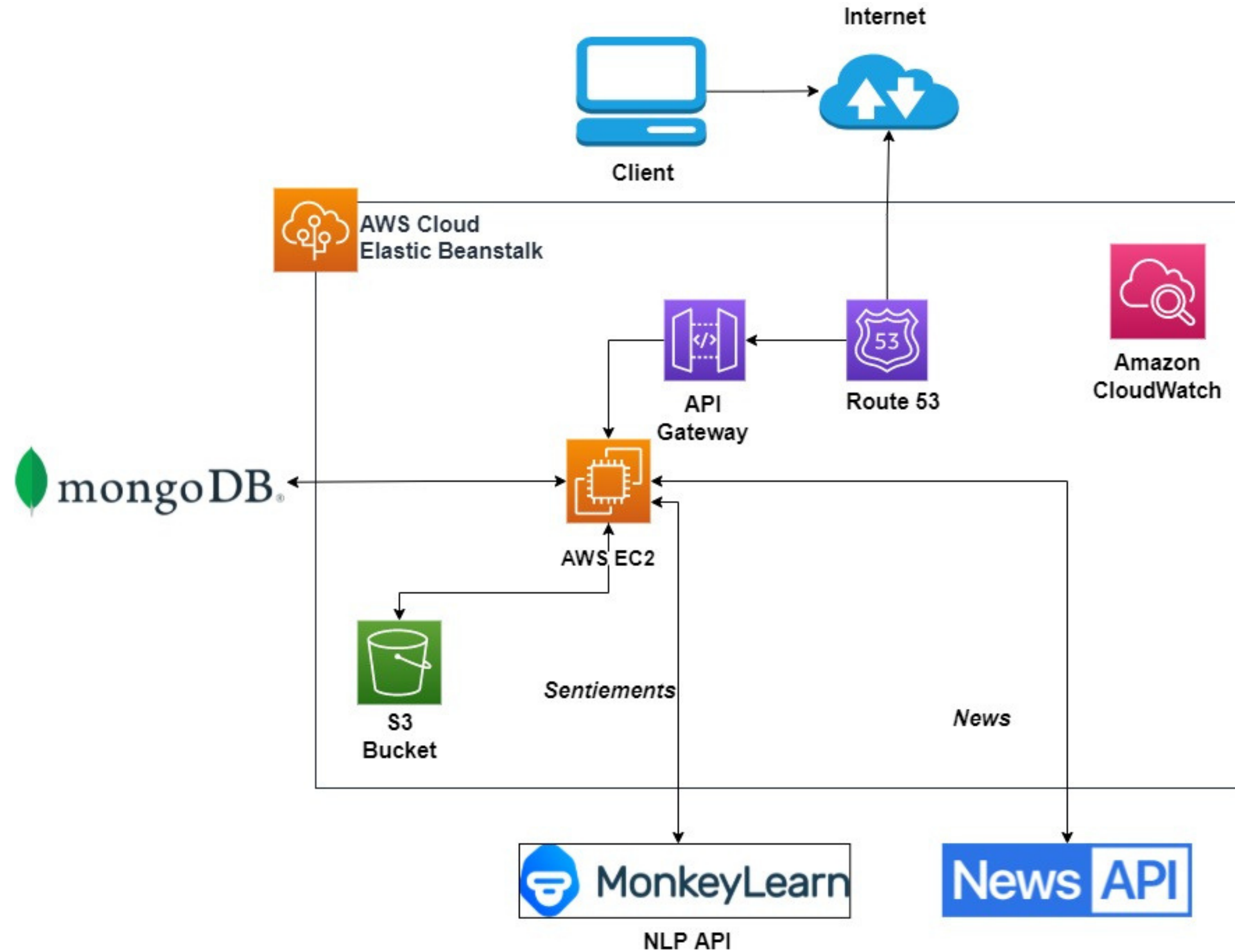


Users



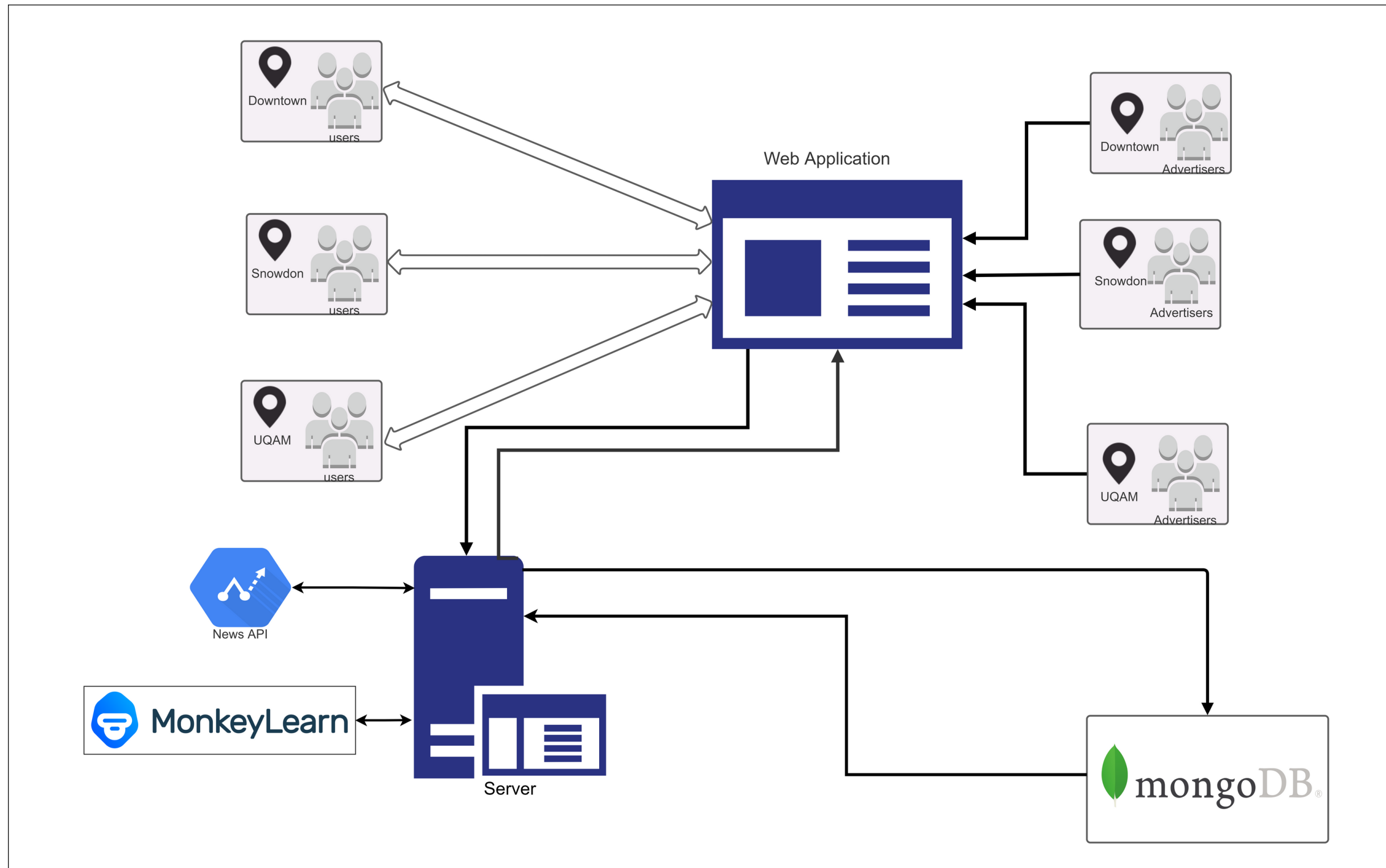
Advertisers

Architecture Design

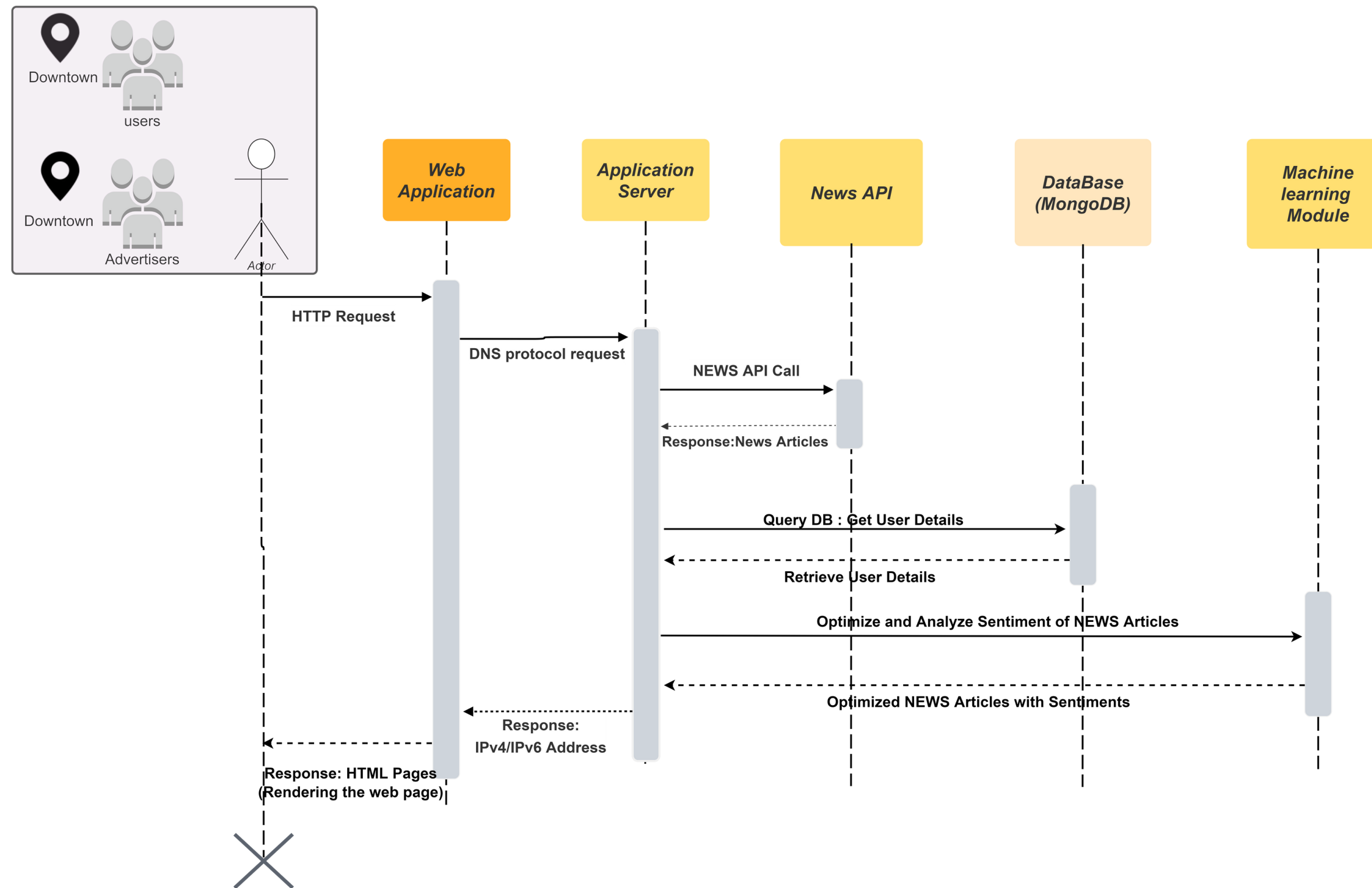


Higher Level Architecture Diagram

(Block Diagram View)



Sequence Diagram



Data Model - News

```
{  
  "author": "USA Today",  
  "title": "Dutch officials found two omicron cases.",  
  "content": "While South Africa first...",  
  "date_posted": "2021-11-30T17:48:45Z",  
  "url": "https://www.usatoday.com/story....",  
  "url_image": "https://www.gannett-cdn.com/presto...",  
  "article_number": 3,  
  "websitetitle": "News On The Go",  
  "sentiment": "Neutral",  
  "sentiment_accuracy": 0.74,  
  "ad_tagline": "Satisfy your appetite with spicy noodles.",  
  "ad_image_url": "https://www.linkpicture.com/q/food4.jpg",  
  "ad_landing_url": "https://www.noodles.com/menu/"  
}
```

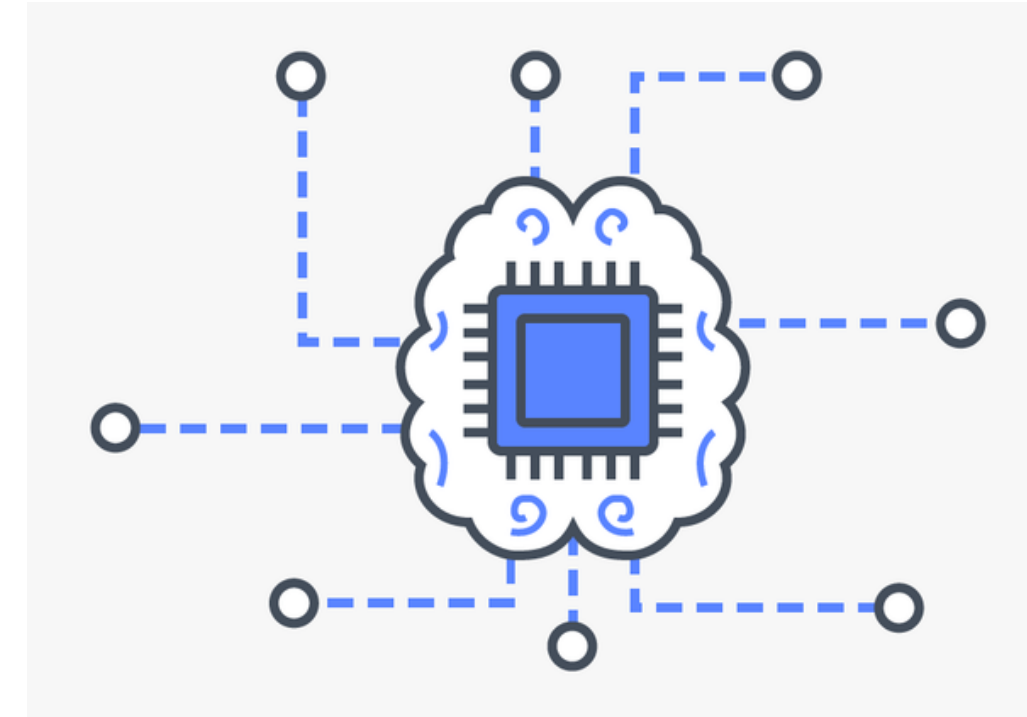
Data Model - Advertisement

```
{
  {
    "_id": {
      "$oid": "61a542fea47061ccbadbec63"
    },
    "Advertisement_theme": "Sports",
    "Sports_ad_1": {
      "ad_theme": "Sports",
      "ad_vendor": "addidas",
      "ad_tagline": "upto 70% off! use this coupon",
      "ad_Image_url": "https://www.linkpicture.com/q/addidas_1.jpg",
      "ad_landing_url": "https://www.wired.com/coupons/adidas"
    }
  }
}
```


Natural Language Processing

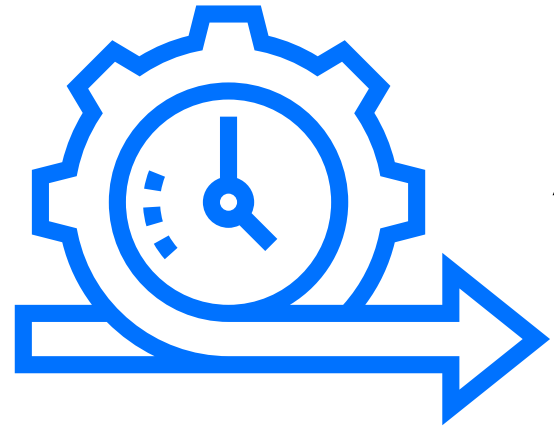
We use sentiment analysis for the news that is being published. The categorization is done in accordance to the nature of the news, Positive, Negative, Neutral.

Monkey Learn Machine Learning model is used for this purpose

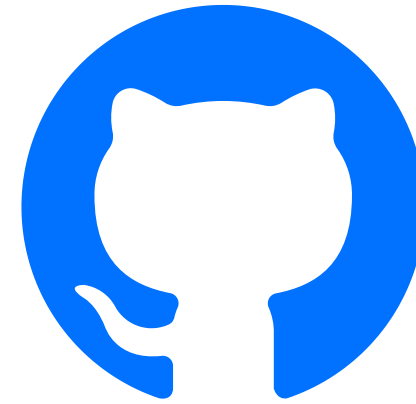


MonkeyLearn

Techniques applied



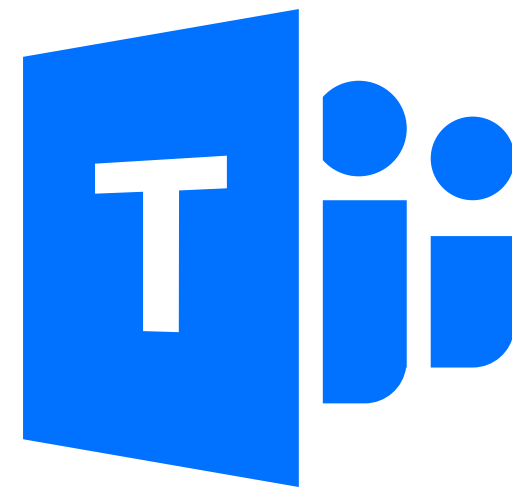
Agile Methodology



Code Repository - GitHub



Project Management - JIRA

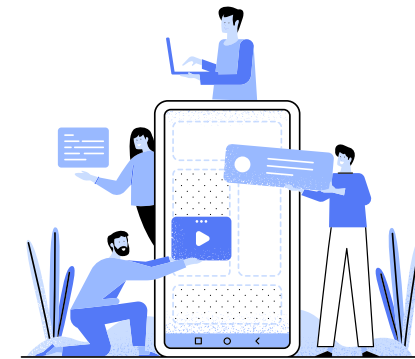


Sprint Meeting- MS Teams

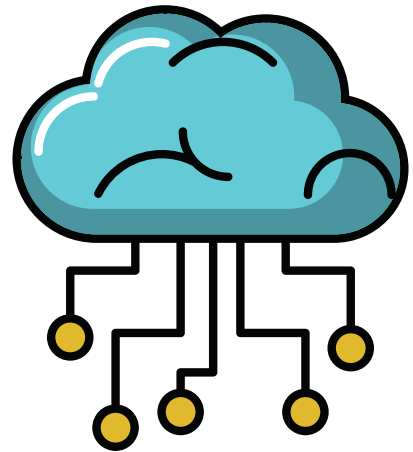
Technologies used



**Backend - Flask
framework in Python.**



**Front End - HTML , CSS
and JavaScript**



**Cloud - Amazon Web
Service**



**Storage - Mongo DB
and S3 Bucket**



**Natural Language
Processing - Monkey Learn
Machine Learning model**



Global News - NEWS API

Cloud Technologies

- AWS Elastic Beanstalk
 - AWS EC2
 - AWS S3
 - Route 53 (DNS)
 - AWS Cloud Watch
 - API Gateway



Current functionalities and future additions

Current Working functionalities:

- User registration and authentication both users
- Advertisers registration and authentication both users
- Collection and display of news articles from an RESTful API - NEWS API.
- Sentiment Analysis of news articles through NLP API - Monkey Learn.

Future additions:

- Currently, we use user location based upon the user address provided during registration. In future, we can track real-time location of users with the help of third party applications - Google Maps.

Architectural attributes

Scalability and Availability:

- We make use of Amazon Elastic Bean Stalk for deploying our application in the cloud.
 - The EB uses several services that are scalable.
 - It provides high availability and scalability.
- .

Security:

- MongoDB uses its own encryption.
 - The S3 provides both server-side and client-side encryption for data uploads.
 - It supports Audit Logs that list the requests made against your S3 resources for complete visibility into who is accessing what data.
 - Also, it provides time-limited access to others with temporary URLs.
- .

Strengths and Limitations

Strengths:

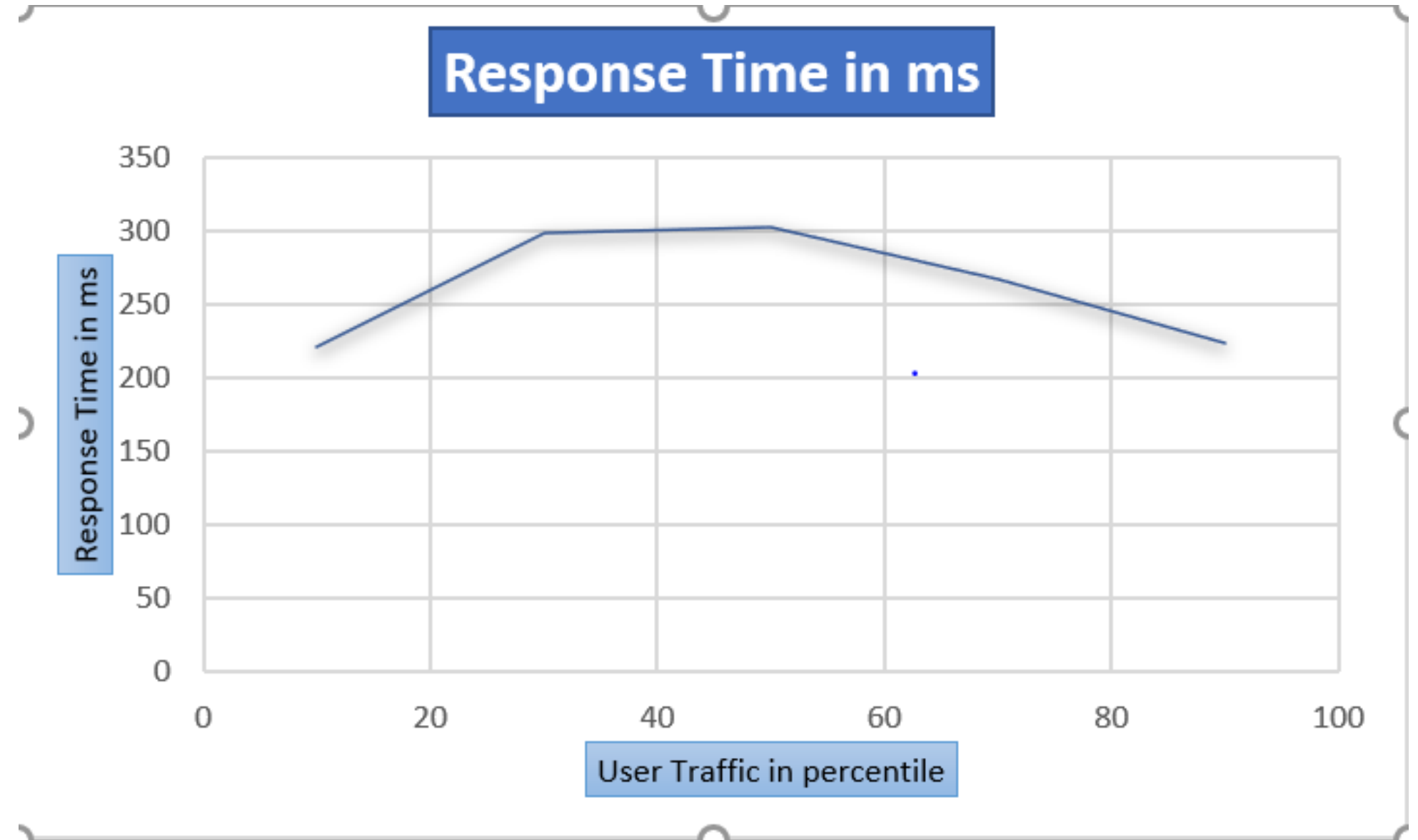
- Cloud is an “Pay for use” model.
- High Scalability and availability.
- Low Latency.
- Broad network access.
- Lower initial costs

Limitations:

- The free tier for NEWS API does not provide real-time news.
- The Monkey Learn free tier limits the API calls and thereby increasing the latency.

Performance

Percentile	Time(ms)
10th percentile	221
30th percentile	298
50th percentile	305
70th percentile	367
90th percentile	406



Cost Estimation:

AWS Service

Pricing (USD)

CloudWatch

0.30

EC2

0.0255 per 2GB

S3

0.023 per GB

Route 53

0.40 per million queries

AWS ELB

0.0255 per hour

APIs

Pricing (USD)

News API

449

Monkey Learn

299

MongoDB

57

Average cost per user per month : \$ 8.05 to \$22

LIVE DEMO

<http://clouddemo-env.eba-sjfmgcx4.ca-central-1.elasticbeanstalk.com/>

Thank You