

# Project Proposal - Market Trend Analysis Using News Articles

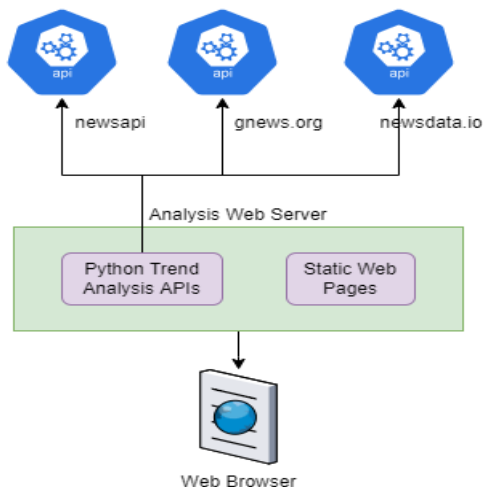
## Member Details - NetID: atodkar2

I am going to submit the project individually. Also thinking of collaborating with other teams who are working on similar topic (I see there are synergies in the topic with team MATH and others)

## Topic Description

The topic is about trend analysis based on the daily news articles. User will select the **date** on the UI and the top trends will be displayed on screen for the user. These trends are derived based on topics trending on that date. Below will be the user journey-

1. User opens the website and selects the date.
2. Based on the selected date, the top market trends on that day will be shown on the screen along with the related news article link.
3. Market sentiments will also be calculated based on how the market performed that day. This will be derived based on the common words used in the articles.
4. User feedback will be captured based on the articles which the user opens and reads. This will be the implicit feedback and will be used to decide the relevance to users.



This topic gives **top trends of the market** on any given date and so one can figure out how the sentiments were in the market on the day and what was the outcome of the market on that day.

The planned approach is shown in the figure here. This approach will use a user input as a date and pull all news articles from three different websites. These articles then will be combined as a collection of documents to find

trend analysis using PSLA or EM algorithms. Additionally the market data can be fetched to show it to users and compare trends along with market results for that day. Outcome of the overall project is to get trend insights into the market quickly for the user. Also to validate their understanding with market stats. Feedback mechanism will be used based on implicit user document selection for reading.

There are similar projects like the [Trading Sentiment Analysis](#) which are similar in nature but the novelty with this approach is to use news feeds from three different sources and also to show the market results (the sensex information along with the difference). Additionally in the above project, the UI is not developed but the report is generated. In this exercise a react based UI will be developed which will be helpful for users.

## Technology

I am planning to use **python** for **trend analysis** algorithm implementation which will expose APIs for the UI. On the frontend the **React** based **UI** will show these trends along with other details.

The simple version will not use any persistent database and all trends will be calculated based on input date by user.

REST APIs from [newsapi](#), [gnews](#) and [newsdata](#) will be used to fetch articles. The source can also be extended by collaborating with some of the classmates who have similar projects planned. Additionally, this project can become a source of data from other projects. APIs can be extended to support such use cases.

## Workload

News API client and python API development - 6 hours

Topic and trend retrieval algorithm implementation - 8 hours

UI implementation - 8 hours

Project administrative work (submission, presentation and documentation) - 4 hours

## Github Repository

<https://github.com/atodkar/CourseProject>

## References

News APIs: <https://newsapi.org/docs> <https://gnews.io/> <https://newsdata.io/>

Project Reference:

[https://mediaspace.illinois.edu/media/t/1\\_6omj3uhq/91021621](https://mediaspace.illinois.edu/media/t/1_6omj3uhq/91021621)