Ministry Name : **Ministry of Railways**
Problem Statement : Media Plan
Team Name : **ateamhasnoname**
Team Leader Name : Nilansh Rajput
College Code : U-0378

Description of Idea :

A. We will get the data from the DAVP Publisher-on-Panel Portal and serve it to a website after filtering and sorting of data on the basis of price, reach, and region.

B. We will get news related to the railways either from the Bing News search API or develop a custom web scraper to monitor news from selected trusted news website for headlines/articles. We will check newly posted news items against the existing ones in the database for similarity. If found similar in content, we will ignore that particular news item. Otherwise, we will analyse the content for positive or negative sentiment and alert the app users while simultaneously updating the information on the web portal.

Technology Stack

- Python
- TFIDF & Cosine Similarity
- TensorFlow
- Flutter, Dart (App Development)
- Firebase (Backend for App)
- Word2Vec & SVM (Sentiment Analysis)
- HTML, CSS, Javascript (Web Development)
- BeutifulSoup or Bing search API,Numpy,etc.
- Other Open-Source Python Libraries (like numpy)

Use Case

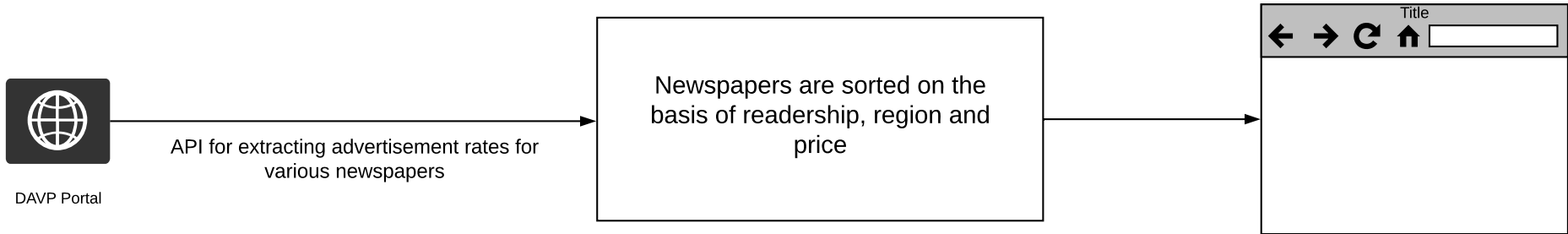The System is meant to be used by Railway Employees.

Show Stoppers

- Server Cost

- Need Publisher-on-Panel Database API from DAVP (due to Captcha on their site) / Require Captcha Relaxation Otherwise

Newspaper Selection from DAVP Portal

DAVP Portal

API for extracting advertisement rates for various newspapers →

Newspapers are sorted on the basis of readership, region and price

Title

News Monitoring System for Railways

News Search API / Custom News Site Scrapper

Our proposed system goes further than just monitoring the news, it classifes the news into multiple levels according to positivity/negativity for better understanding and ability to take action accordingly

TFIDF
(term frequency–inverse document frequency)

Cosine Similarity

Check similarity with news items already stored in the databse to avoid reporting of same news from different sources

If Found Similar

If Found Different, Store in Database

Database

Use Word2Vec embedding to convert words into Vector for processing

SVM
(Support Vector Machine)

Sentiment Analysis to segregate positive and negative news

Update Database with Sentiment Segregation

Update Info on Portal
(with Sentiment Data)

Update Info in App
(with Sentiment Data)

Firebase Cloud Notification Service

Real Time Notification