Team Prominence

**PS Number (ID):** Software SIH1348 (Ministry of Railways)

**Heading:**

Natural language translation engine for announcements and information dissemination at stations

**Description:**

|  | Design of a system to provide information in a desired Indian language on demand by passengers and other customers, in written and oral form. The system should be extendable to foreign languages for tourists as and when required. Limited vocabulary systems for commonly required railway information services are acceptable. Scope of the system - announcements at stations, information over IVRS (Interactive Voice Response System), information through chatbots and web interfaces. constraints to be considered - voice recognition in different languages; noisy ambience at stations; adequate computing power for on-the-fly content generation; delivery on mobile devices. |
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**Elaboration:**

The problem statement you've provided is about designing a system to deliver information in an Indian language, both in written and oral form, based on demand from passengers and other customers. It also needs to be extendable to foreign languages for tourists when necessary. The scope of the system includes providing information through announcements at stations, over Interactive Voice Response System (IVRS), via chatbots, and through web interfaces. Several constraints need to be considered during the design process. Let's break down the statement further:

\*\*1. Information Delivery in Desired Indian Languages:\*\*

- The system's primary purpose is to provide information to users in Indian languages as per their preferences. This could include languages like Hindi, Bengali, Tamil, etc.

\*\*2. Written and Oral Information:\*\*

- The system should be capable of delivering information both in written and oral forms. Written information might include text messages or web content, while oral information involves spoken announcements or responses.

\*\*3. Extendability to Foreign Languages:\*\*

- The system needs to be flexible enough to accommodate foreign languages for tourists when required. This suggests a need for multilingual support.

\*\*4. Limited Vocabulary for Railway Information:\*\*

- It's acceptable to have a limited vocabulary system specifically for commonly required railway information services. This might include information about train schedules, platform changes, delays, and ticketing.

\*\*5. Scope of the System:\*\*

- The system's scope is quite extensive and covers various communication channels:

- Announcements at Stations: Providing real-time information to passengers waiting at railway stations.

- Information over IVRS: Offering automated voice-based information when passengers call a designated number.

- Information through Chatbots: Employing chatbots for text-based communication to address passenger queries.

- Information through Web Interfaces: Delivering information via websites or mobile apps.

\*\*6. Constraints:\*\*

- Voice Recognition in Different Languages: The system must be able to accurately recognize and process spoken languages in various Indian languages and possibly foreign languages.

- Noisy Ambience at Stations: The system should be capable of functioning in noisy environments typically found at railway stations.

- Adequate Computing Power: There's a need for sufficient computing power to generate content on-the-fly, especially for languages not pre-programmed into the system.

- Delivery on Mobile Devices: The information should be accessible on mobile devices, indicating the need for responsive design or mobile apps.

In essence, the challenge here is to create a versatile and user-friendly information system that can handle multiple languages, noisy conditions, and various communication channels to serve both local passengers and tourists efficiently. It involves aspects of language processing, voice recognition, and user interface design to ensure a seamless experience for all users.

**Break-Down:**

We will need to develop 2 things

1. Web Solution or simply Web-site: with all the given requirements of the problem statement
2. Mobile App: Because I think the focus is on Providing information and app will be easiest way for our users to engage, I understand that developing an application is a different dimension, so to compensate for our lack of experience we will reduce the scope of the app to
   1. Information
   2. Translation
   3. Chatbot