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Problem Statement Category: Foundational or Scalable Solution

Problem Statement: Indic language support

Architecture & Design for the innovative solution.

In our pursuit of creating an innovative solution for Indic Language Support in E-commerce, we present a comprehensive design that seamlessly integrates various modules to enhance user experience and accessibility. Let's delve into the key design elements:

Our system supports multiple input methods to cater to a diverse user base:

- *Text Input:* Leveraging advanced Natural Language Processing (NLP) models for Indic languages, including language detection for accurate processing.
- *Voice Input:* Employing Automatic Speech Recognition (ASR) for voice input, with robust support for various Indic languages.
- *Image Input:* Implementing Optical Character Recognition (OCR) for extracting text from images, tightly integrated with NLP for comprehensive language understanding.

Define customization & deployment options of your proposed solution.

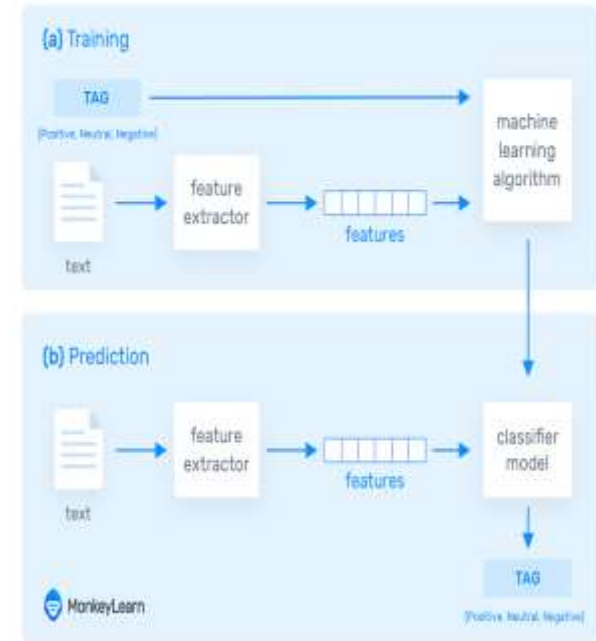
The heart of our solution lies in a sophisticated Language Translation Engine:

- *Transformer Architecture*: Utilizing transformer-based models for efficient and accurate language translation, with the flexibility of pre-trained models.
- *Pipelined Approach*: Designing a modular architecture that ensures scalability and adaptability, creating a seamless translation experience.



Our output module ensures a user-friendly presentation of translated content:

- *Text Output:* Utilizing open fonts for translated text, with considerations for layout and formatting to enhance readability.
- *Voice Output:* Implementing Text-to-Speech (TTS) systems to provide a natural and contextually accurate voice output.
- *Image Output:* Generating visually appealing images with translated text, considering cultural and design preferences for Indic languages.



Demonstrate working of the solution to the evaluation team

In a live demonstration, the system would seamlessly execute these actions, providing a user-friendly and inclusive experience for Indic language-speaking users in an E-commerce context. The robust integration of NLP, ASR, and OCR ensures that the system can understand and respond to user queries effectively, irrespective of the chosen input method. Continuous improvement mechanisms further refine the system over time based on user feedback and evolving language models.



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