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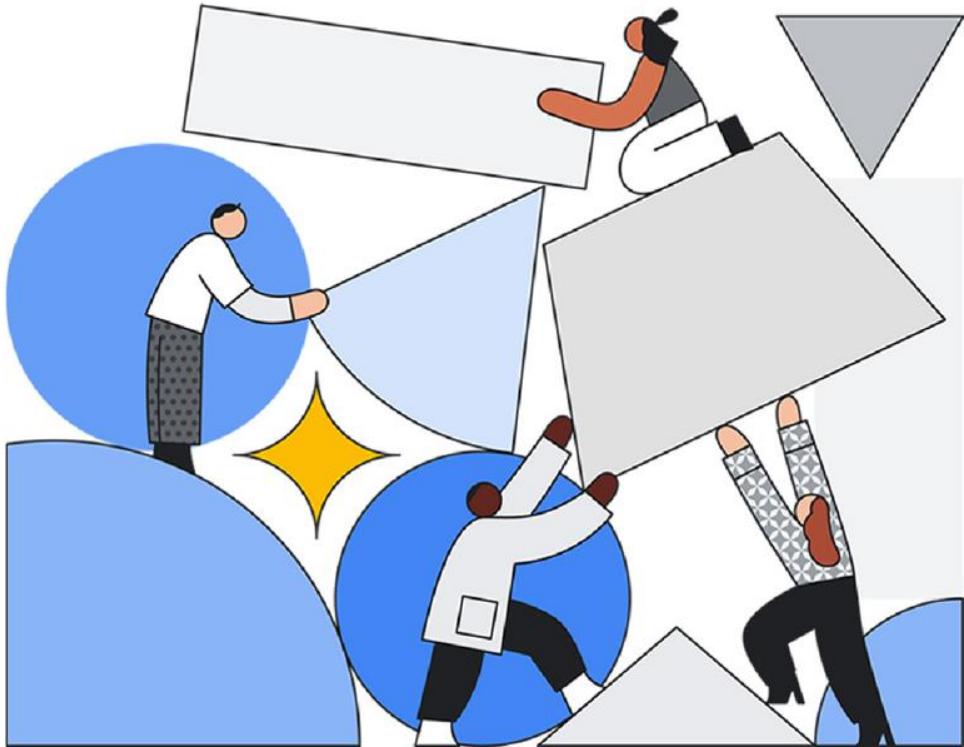

Indic Language Support in Online Commerce

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TEAM NAME : FLASH CODERS

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PROBLEM STATEMENT:

- Currently, online commerce only caters to a specific segment of customers who can type the name of the product in English and read all the details carefully before purchasing the product.

- However, if the vision of achieving ecommerce penetration of 75% needs to be fulfilled, we need to enhance customer adoption and provide a more inclusive and accessible experience. Example: Individuals who may not be comfortable typing, or comfortable in English.

SOLUTION OVERVIEW

Indic language support

Our solution enables customers to input text or voice commands in an Indic language or English and receive output in the corresponding language. This allows for a more inclusive and accessible experience for customers who prefer to communicate in their native language.

Input Methods:

Customers can input their queries using text, voice, or even images. Our advanced language processing algorithms can accurately understand and interpret the customer's intent, regardless of the input method.

Output Options:

Once the customer's query is processed, the solution provides the output in the same interface as the input. This means that if the customer inputs in an Indic language, the output will be generated in the corresponding Indic language. Similarly, if the customer inputs in English, the output will be in English.

Benefits:

Enhanced customer adoption
Improved accessibility
More inclusive experience

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Input Methods:

To enhance customer adoption and provide a more inclusive and accessible experience, our online commerce platform supports Indic language input through various interfaces including text, voice, and image.

Interface	Description
Text Input	Users can type in Indic languages using their keyboards or virtual keyboards provided on the platform.
Voice Input	Users can speak in Indic languages using voice recognition technology. The platform converts their speech into text.
Image Input	Users can upload images containing Indic text, and the platform uses optical character recognition (OCR) to extract the text for processing.

Output Methods

Text

Provide output in the same interface, i.e. text, in the corresponding language.

Voice

Provide output in the corresponding language through voice-based interfaces.

Image

Provide output in the corresponding language through images and visual representations.

Linguistic Collation Algorithm for Indic Language

Step	Description
1	Normalize the input text by removing diacritical marks, punctuation, and whitespace.
2	Tokenize the normalized text into individual words or characters.
3	Convert each token into its corresponding Unicode code point representation.
4	Apply a linguistic collation algorithm specific to the Indic language being used.
5	Sort the tokens based on the collation algorithm's rules.
6	Reconstruct the sorted tokens to form the collated output text.

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Evaluation of Newer Technologies

Transformers with Text2Vec

Transformers, such as the BERT model, have shown promising results in natural language processing tasks . These models can be used to improve the accuracy and efficiency of language processing in online commerce . By leveraging transformers with text2vec, we can enhance the Indic language support in our solution and provide a more inclusive and accessible experience for customers.

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Flow Considerations

E-commerce Flows

Flow	Considerations
Search & Discovery	- Enable search functionality in Indic languages to improve discoverability.- Provide filters and sorting options in Indic languages for a personalized shopping experience.
Payment Confirmation	- Display payment confirmation messages in Indic languages to ensure clarity and understanding.- Use localized payment methods to cater to diverse customer preferences.
Post Order updates	- Send order updates and delivery notifications in Indic languages to keep customers informed.- Provide tracking information in Indic languages for easy tracking of orders.
Customer Service	- Offer customer service support in Indic languages to address customer queries and concerns .- Provide Indic language options for chatbots and automated customer service systems..

Artefacts Used

User Interface

The user interface of the online commerce platform has been designed to support Indic languages, allowing customers to navigate and interact with the platform in their preferred language.

Language Translation

Language translation tools and APIs have been integrated into the platform to automatically translate product descriptions, reviews, and other content into Indic languages.

Language Detection

Language detection algorithms have been implemented to identify the language preferences of customers and provide personalized language settings.

Assumptions

Assumptions 1

- The target audience for the online commerce platform includes users who are familiar with Indic languages and prefer to use them for their online interactions.

Assumptions 2

- There is a demand for Indic language support in online commerce, and providing this support will lead to increased customer adoption and eng agement.

Assumptions 3

- The online commerce platform has the technical capability to implement Indic language support, including font rendering, input methods, and language-specific functionalities.

Assumptions 4

- There are no legal or regulatory barriers to providing Indic language support in
the target market.

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