



# NLP

## Project Assessment – 1

Open Domain Question Answering  
based on NCERT

# Motivation

The need to create an open domain question answering (ODQA) platform based on NCERT textbooks arises from the necessity to bridge educational gaps and enhance learning efficiency.

Clear and immediate answers to students' questions are often lacking, holding back understanding and progress.

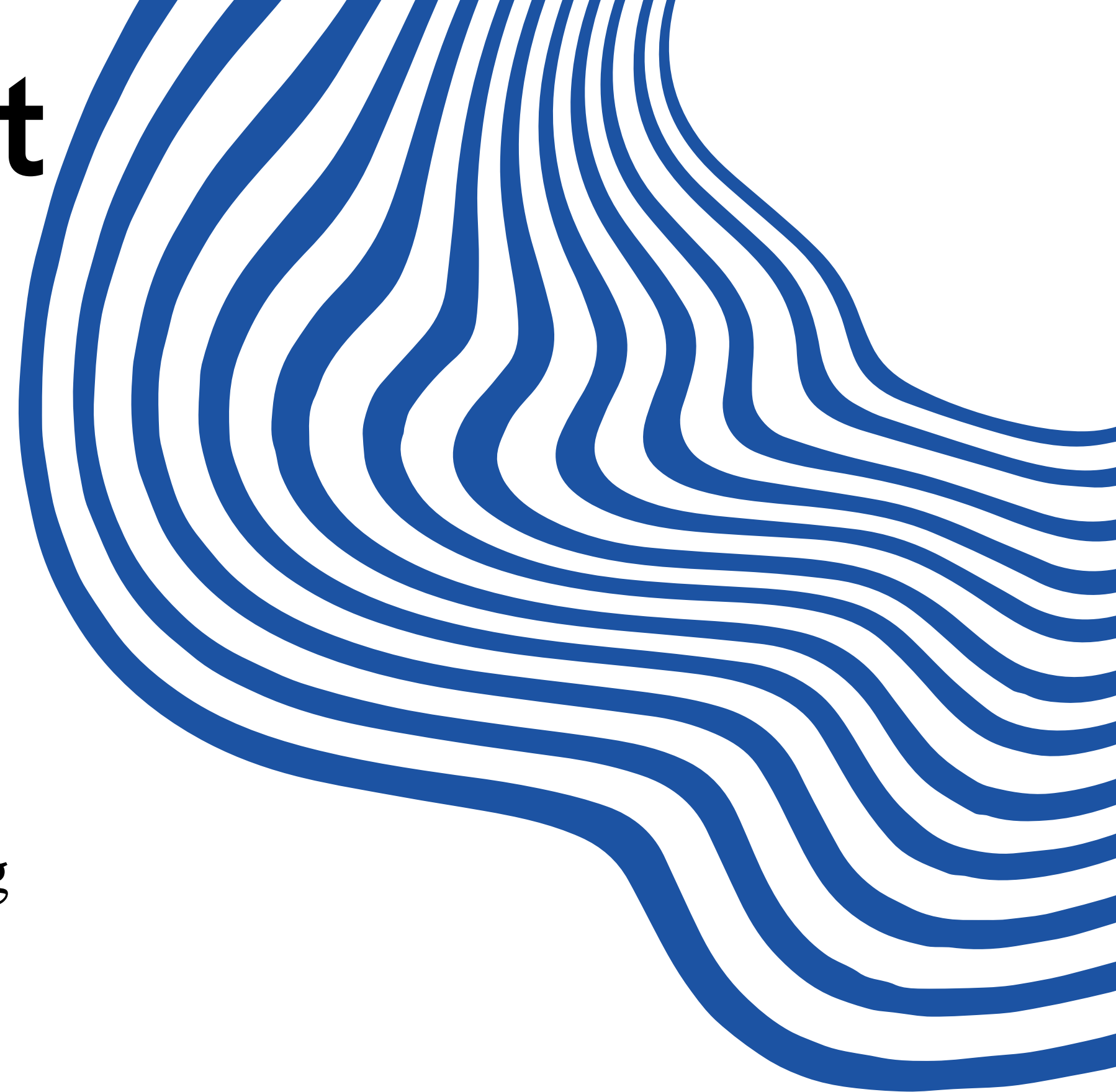
We, through this platform aim to provide instant, accurate responses, ensuring that students have continuous access to reliable information , thereby supporting their academic growth and fostering a more effective learning environment.



# Problem Statement

The aim is to enhance access to standardized, curriculum-aligned knowledge for students across India.

ODQA intends to provide scalable, precise, and contextually relevant answers, therefore enhancing personalized learning and improving study efficiency. By addressing the limitations of traditional learning methods, this initiative will serve as a reliable educational tool to support students' academic progress.



# Proposed Pipeline



## Objective 1: Data Collection

### Tasks:

1. Collect digital versions of all relevant NCERT textbooks.
2. Include additional educational resources.

## Objective 2: Data Preprocessing

### Tasks:

1. Text Normalization: Standardize the text.
2. Tokenization: Break down the text for easier processing.
3. Content Filtering: Remove irrelevant content

## Objective 3: NLP Model Development

### Tasks:

1. Model Selection: Choose appropriate NLP models (e.g., BERT, GPT)
2. Training: Understand and process questions effectively.
3. Fine-Tuning: Improve accuracy and relevance of the answers.

## Objective 4: Question Answering System Implementation

### Tasks:

1. System Design: Design the architecture, including components for question processing, answer retrieval, and response generation.
2. Integration: Integrate the trained NLP models into the system to handle user queries.
3. Optimization: Optimize the system for speed and accuracy.

## Objective 5: User Interface Design

### Tasks:

1. Interface Development: Develop a user-friendly interface.
2. Accessibility Features: Ensure the interface is accessible to all users.
3. User Experience Testing: Gather feedback and make necessary improvements.

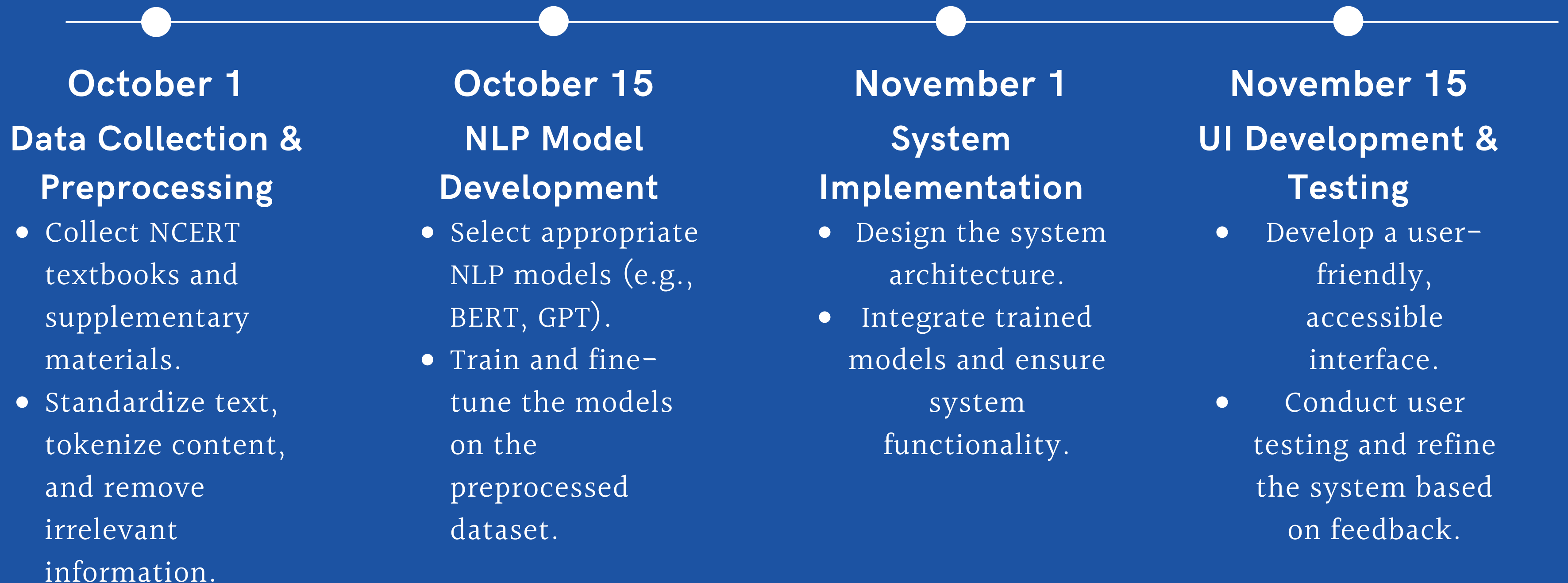
## Objective 6: Testing and Evaluation

### Tasks:

1. Extensive System Testing: Ensure the system works correctly under various conditions.
2. Accuracy Evaluation: Evaluate the accuracy using a set of benchmark questions.
3. User Feedback: Identify areas for improvement.
4. Iterative Refinement: Continuously refine the system based on feedback and testing results to enhance performance and user satisfaction.



# Timeline





# Expected Outcome

We plan to develop an NLP based open domain question answering system using NCERT textbooks. The application will assist learners, teachers, and students in accessing precise answers in a variety of disciplines. The system will ease information access and improve educational engagement by accurately interpreting and answering complicated inquiries.

This tool has the potential to transform learning experiences by making academic content more accessible and interactive.

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# THANK YOU

TEAM 20

Chandana goud V-SE22UARI217

Kshitij Karmuse-SE22UARI134

Mithil Josyula-SE23LARI001

Yuwan reddy M-SE22UARI091