# Proposal Section for Medicine and Appointment Extraction:

## 1. Problem Statement:

# In the Medicine and Appointment Extraction phase, the goal is to extract medicine names and appointment instructions from handwritten prescriptions accurately. This involves:

# handling mixed-language text (Arabic and English)

# Correcting misspellings in handwritten text.

# normalizing appointment instructions into a standardized format.

* Ensuring the extracted data is accurate and usable for downstream tasks like automated scheduling.

## 2. Proposed Solution:

# We propose a Natural Language Processing (NLP)-based solution that uses Named Entity Recognition (NER) models to extract medicine names and appointment instructions. The solution will:

# Use BERT for English text and AraBERT for Arabic text.

# Fine-tune the NER model on a dataset of medical prescriptions.

# Implement rule-based systems to handle variations in appointment instructions and normalize them into a standardized format.

* Correct misspellings automatically using BERT’s Masked Language Model (MLM).

## 3. Implementation Steps:

# Preprocessing:

# Clean the extracted text

# detect the language

# correct misspellings.

# NER Model:

# Train and fine-tune a NER model to extract medicine names and appointment instructions.

# Rule-Based Systems:

# Implement rule-based systems to handle variations in appointment instructions.

# Post-Processing:

# Validate the extracted data and handle errors.

## 4. Expected Outcomes:

# Accurate extraction of medicine names and appointment instructions from handwritten prescriptions.

# A lightweight and efficient model that can handle mixed-language text and correct misspellings.

# Improved patient care through accurate and standardized prescription data.

## 5. Evaluation Metrics:

# F1 Score: To measure the accuracy of the NER model.

# Precision and Recall: To evaluate the model’s performance in extracting entities.

# Model Efficiency: To ensure the model is lightweight and efficient.