

# Internship Hiring Challenge: Context-Aware AI-Powered Form Builder

## Project Overview

The Context-Aware AI-Powered Form Builder is an application designed to simplify and automate the process of creating dynamic, contextually relevant forms. The application uses Cohere AI API for generating form questions based on user inputs. The forms generated are fully editable and can be shared via a link or QR code. Users can collect responses and analyze them in real-time. The project is built using Streamlit and Cohere AI, with the ability to save, edit, and analyze forms and their responses.

## Project Objectives

1. AI-Powered Form Generation: Enable users to generate forms automatically by inputting contextual information, such as form description, goal, target audience, preferred tone, and question preferences.
2. Editable Forms: Allow users to edit the generated forms to customize the questions as per their specific needs.
3. Shareable Forms: Provide functionality to generate a shareable link or QR code to distribute the forms to users for responses.
4. Response Collection and Analytics: Collect responses from users and store them in a CSV format for analysis. Provide basic analytics like response trends.
5. Enhanced User Experience: Use AI to ensure that forms are context-aware, meaning the generated questions and structure adapt to the inputs provided by the user.

## Features

1. Form Generation: Uses Cohere API to generate dynamic form questions based on user input.
2. Editable Forms: The form can be edited by users after generation, allowing for flexibility and customization.
3. Shareable Link or QR Code: Forms can be easily shared with others by generating a link or QR code.
4. Response Collection: All responses are stored in a CSV file for future analysis.
5. Response Analytics: After responses are collected, users can view the analytics to gain insights into their data.
6. Real-time Form Editing: Allows users to make changes to forms dynamically and see those updates immediately.

## Technology Stack

- Cohere AI: For generating context-aware form questions.
- Streamlit: A Python framework used for building the interactive web application.
- Python: The core language used for implementing the app logic, handling responses, and processing data.
- JSON: Used to structure and save the generated forms.
- CSV: Format used to store responses for analytics.

## Application Workflow

1. User Inputs: The user provides details such as form description, goal, target audience, tone, number of questions, question preferences, and additional context.
2. Form Generation: Cohere API generates a context-aware form with structured questions in a JSON format.
3. Form Display: The generated form is displayed in JSON format and can be saved for future editing or usage.
4. Editable Form: The user can edit the form's questions, text, and options through the Streamlit interface.
5. Save Form: Forms are saved locally in a JSON file and can be loaded later for further editing.
6. Sharing: A shareable link or QR code is generated to share the form with others for collecting responses.
7. Response Collection: Responses submitted through the form are stored in a CSV file.
8. Analytics: Basic response analytics provide insights into trends and data collected.

## Implementation Details

1. Cohere API Integration: Generates form questions in JSON format based on user inputs. The AI adapts question types and structure to the form's context.
2. Form Structure: Consists of a form ID, title, description, and an array of questions. Questions have types (e.g., multiple-choice) and optional fields like text and options.
3. Saving Forms: Forms are saved as local JSON files and identified by unique IDs.
4. Form Editing: Users can modify questions and details dynamically using Streamlit widgets.
5. Sharing: Forms are distributed via unique links or QR codes for accessibility.
6. Response Collection: Data is stored in a CSV format for later analysis.
7. Analytics: Includes metrics like response counts, trends over time, and popular answers.

## Conclusion

The Context-Aware AI-Powered Form Builder leverages AI to automate and simplify the form generation process. By allowing users to edit, share, and analyze forms, it streamlines workflows and enhances data collection efficiency. The use of Cohere AI ensures the forms are contextually relevant and tailored to user needs, making it a valuable tool for organizations seeking efficient solutions for dynamic form creation.