# MERN Stack Developer Assessment

Thank you for applying for the MERN Stack Developer position. As part of the first-level assessment, we would like you to complete the following assignment. You may use GitHub Copilot, LLMs, or any other productivity tools you are comfortable with. The goal is to evaluate your ability to design, build, and integrate different parts of a MERN stack application.

## Problem Statement: AI-Powered Note Searcher

You are tasked with building a collaborative note-taking application where users can:  
1. Create, edit, and delete notes.  
2. Search their notes using both keyword-based search and AI-powered semantic search.  
3. See search results ranked appropriately.

## Requirements

### Backend (Express + MongoDB):

- Implement user authentication using JWT (register and login).  
- Create CRUD endpoints for managing notes (store in MongoDB).  
- Build a search API endpoint (`/search?query=...`) to return relevant notes.  
- The search should support two modes:  
 • Basic keyword search using MongoDB’s text index.  
 • Semantic search using embeddings from an external AI/LLM API (e.g., OpenAI, Hugging Face).

### Frontend (React):

- Build a login/register screen.  
- Create a dashboard for managing notes (create, view, edit, delete).  
- Add a search bar where users can enter queries and toggle between keyword search and AI search.  
- Display search results clearly, showing the most relevant notes first.

## Deliverables

- A GitHub repository containing the complete MERN application code.  
- A README file with setup instructions, API key usage, and design explanations.  
- A working implementation of both keyword search and AI-powered semantic search.

## Time & Submission

You will have 2–3 days to complete this assignment. Please share the GitHub repository link with us once you are done.

## Evaluation Criteria

- Correctness and completeness of the implementation.  
- Code structure, readability, and documentation.  
- Proper use of MERN stack technologies.  
- Successful integration of AI-powered semantic search.  
- User experience and usability of the frontend.

## Allowed Tools & Guidelines

You may use productivity tools to assist with development. However, please follow these guidelines:  
- Do not upload this assessment prompt directly into these tools. The goal is to evaluate your own design and implementation skills.  
- Ensure your submission reflects your own thought process, customization, and implementation choices.  
- Your submission will be evaluated not just on functionality, but also on code structure, clarity, and documentation.  
- Along with the GitHub repository, please include a short README or implementation notes describing your design decisions and approach.  
- (Optional but encouraged) You may provide a short screen recording (2–3 minutes) walking through your solution and explaining your choices.