**Project: "Intelligent Help Desk System"**

**Time Limit**: 4 hours  
**Technologies**: Python, LLM API, Vector Search, REST API

**Scenario**

Build an AI-powered help desk system that can classify user requests, provide relevant solutions from a knowledge base, and route complex issues appropriately.

**Requirements**

Create a system with the following components:

1. **Request Classification**: Categorize incoming requests into predefined types
2. **Knowledge Retrieval**: Search relevant information from provided documents
3. **Response Generation**: Generate contextual responses using an LLM
4. **Escalation Logic**: Determine when human intervention is needed

**Provided Assets**

* Sample help desk documents (FAQ, procedures, policies)
* 20 test user requests with expected classifications

**Evaluation Criteria**

* **Architecture (25%)**: Clean separation of concerns, extensible design
* **AI Integration (25%)**: Effective LLM usage and prompt engineering
* **Retrieval Quality (20%)**: Relevant information extraction
* **Code Quality (20%)**: Testing, error handling, documentation
* **Performance Analysis (10%)**: Evaluation methodology and insights