Assignment: "Smart Job Description Analyzer"

Objective:

Build a **web application** where users can upload or paste a **job description**, and the app uses an **AI model (NLP)** to extract key insights, such as required skills, experience level, job role type (e.g., frontend/backend/data), and generate a summary.

Deliverables:

- A **web app** with:
    - Frontend UI (basic input form and results display)
    - Backend API in Python (FastAPI or Flask)
    - AI/NLP model for extracting and summarizing content
- Clean, readable code with comments and a README
- Optional: Dockerfile (bonus)

Functional Requirements:

1. Frontend (React/HTML + JS + Tailwind/Bootstrap):

- Input form for:
    - Pasting or uploading a **job description (JD)**
- "Analyze" button
- Display section for:
    - Extracted **Skills**
    - Detected **Role Type**
    - **Experience Level** (e.g., Junior/Mid/Senior)
    - A **Summary** of the JD (2–3 lines)

2. Backend (Python, Flask or FastAPI):

- Expose a POST endpoint `/analyze` that accepts JD input
- Implements:
    - Skill extraction (via regex/NLP or small model like spaCy)
    - Role classification (simple rule-based or keyword-matching logic)
    - Experience level estimation (based on years mentioned or job wording)
    - JD summarization (can use `transformers` or simple text rank)

AI/NLP Requirements:

Use any of the following libraries (as applicable):

- `spaCy` for NER and keyword extraction
- `transformers` (e.g., `t5-small` or `bart`) for summarization
- `scikit-learn` or custom logic for classification

Model-based approaches can be simple—focus is on applying AI tools, not training from scratch.

Bonus (Optional):

- Add login page (mock user)
- Save analysis history (use localStorage or in-memory on backend)
- Use Docker for deployment

Evaluation Criteria:

Area	Points
Functional correctness	25

Clean code structure	15
Use of Python + libraries effectively	20
Fullstack integration	15
AI/NLP implementation	15
Bonus features (Docker, UI polish, persistence)	10
Total	**100**