AI-Powered Resume Ranker

- **Project Title**: AIviHire (AI Vision for Hiring) – Smart Resume Ranking System

- **Technology Stack**: Python, SpaCy, Sklearn, Flask, HTML/CSS, JavaScript

- **Introduction :**

  Resume screening is one of the most repetitive and time-consuming tasks in the recruitment process. HR professionals spend hours reading resumes and comparing them against job requirements. This project proposes AIviHire, a web-based resume ranking system powered by NLP techniques that automatically ranks resumes based on their similarity to a job description.

- **Abstract :**

  The AIviHire system is designed to simplify and accelerate the resume evaluation process. It uses NLP preprocessing with SpaCy, vectorization using TF-IDF, and cosine similarity to score each resume. The system accepts multiple PDF resumes, extracts the text, and ranks them in comparison to a job description. The ranked results are presented in a visually interactive dashboard, with a chart, table, and downloadable HR report. An integrated chatbot assistant enhances user interaction and provides support regarding the ranking process.

- **Tools Used :**

Python	Core logic and backend processing
Flask	Web framework for routing and UI rendering
SpaCy	NLP preprocessing (tokenization, lemmatization)
Scikit-learn	TF-IDF vectorization and cosine similarity calculation
PyPDF2	Extracting text content from PDF resumes

Chart.js	Visualizing resume scores in bar charts
HTML / CSS / JS	Frontend layout, styling, and chatbot interactivity
Particles.js	AI-style animated background for futuristic dashboard

Steps Involved in Building the Project :

1. Job Description Input: A job description is provided as the benchmark for comparison.
2. Resume Upload: Multiple resumes (PDF format) are uploaded via the web interface.
3. Text Extraction: PyPDF2 is used to extract raw text from PDF files.
4. Preprocessing with SpaCy: Text is cleaned, lemmatized, and stop words removed.
5. TF-IDF Vectorization: Resumes and JD are converted into numerical vectors.
6. Scoring Algorithm: Cosine similarity is used to calculate how closely each resume matches the JD.
7. Ranking: Scores are sorted in descending order.
8. Output: Results are displayed as a table and a bar chart.
9. Report Download: An HR report is generated as a downloadable CSV file.
10. AIvi Assistant: A chatbot helps users understand features like ranking, scoring, and usage tips.

Conclusion :

The AIviHire resume ranker automates and enhances resume screening using AI and NLP. It improves accuracy, saves time, and ensures an unbiased comparison between resumes and job descriptions. With its user-friendly interface, visual outputs, and assistant chatbot, AIviHire serves as a practical tool for modern hiring teams.
This project successfully combines backend AI logic with an interactive frontend, meeting all deliverables including ranking algorithm, UI, scoring output, and real-time assistant support.