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AI for Bharat Hackathon

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Team Name : **Ai_product**

Team Leader Name :Abhishek Pant

Problem Statement : Students lack realistic interview practice.

Brief about the Idea:

Purpose: A practice platform for students to simulate real interviews with flexibility, voice interaction, and coding rounds, while storing performance data for analysis.

Key Features:

LLM Choice: Students can select which language model powers the interview (default suggested by you).

Interview Flow:

Questions displayed on screen and spoken aloud.

Answers captured via voice recognition.

Coding round with on-screen problems and code editor.

Customization:

Students can tailor the interview (full interview, coding-only, skip introduction).

Job description + company name input → system fetches/tailors questions accordingly.

Data & Dashboard:

All questions, answers, scores, and domains stored in a database.

Performance analytics shown in a dashboard (strengths, weaknesses, trends).

Differentiators:

Flexible LLM integration.

Realistic voice + coding simulation.

JD-aware interview customization.

Data science-driven feedback dashboard.

1. How different is it from any of the other existing ideas?

- Most mock interview apps are either **text-only** or **coding-only**.
- Your assistant combines **voice Q&A + coding rounds + JD-aware customization** in one flow.
- It also lets students **choose the LLM** powering the interview, which is rare — most platforms lock you into one model
- Adds a **data science dashboard** for performance analytics, not just transcripts.

2. How it solves the problem:

- Students struggle to simulate real interviews.
- The app delivers questions both **on screen** and via **voice**, capturing **spoken answers** for realism.
- Coding rounds replicate **technical interviews**.
- **Customization** (skip intro, coding-only, JD-based tailoring) makes practice flexible and relevant.
- **Stored answers** + scores feed into a **dashboard**, giving measurable feedback and progress tracking.

3. Unique Selling Proposition (USP):

- **LLM flexibility**: choose your inference engine.

- **Realistic simulation**: voice + coding integration.Coding rounds replicate **technical interviews**.

- **Personalized prep**: JD/company-aware interviews..

- **Analytics-driven feedback**: dashboard showing strengths, weaknesses, and trends.

List of features offered by the solution :

1. **LLM Flexibility** – choose your preferred language model (default suggested).
2. **Voice + Text Interaction** – questions displayed on screen and spoken aloud; answers captured via speech recognition.
3. **Coding Round Simulation** – integrated code editor with real-time problem solving.
4. **Customizable Interview Flow** – full interview, coding-only, or skip introduction.
5. **JD & Company-Aware Questions** – tailor interviews using job descriptions and known company patterns.
6. **Per-Interview Analytics** – track time taken, answer length, technical depth, pauses, tone, and communication style.
7. **Overall Performance Tracking** – cumulative analysis across multiple interviews to show growth and consistency.
8. **Data Storage** – secure repository for questions, answers, scores, and domains.
9. **Dashboard Insights** – visual breakdown of strengths, weaknesses, and progress trends.

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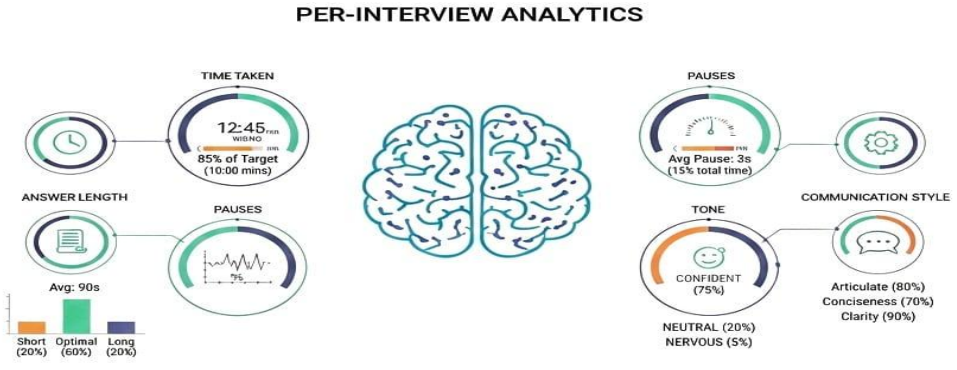
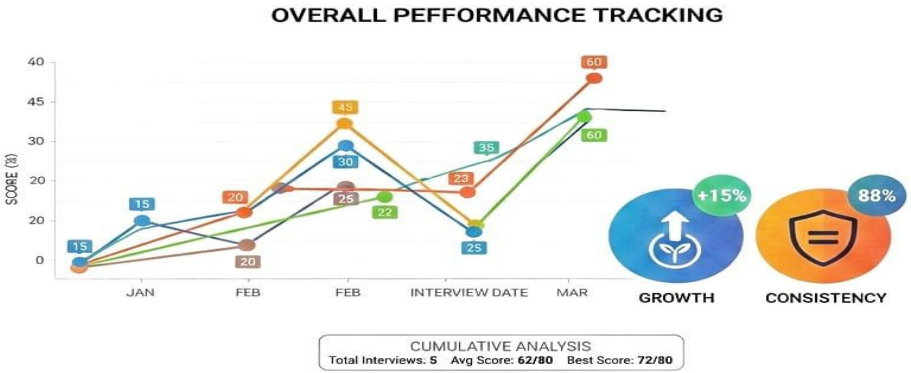
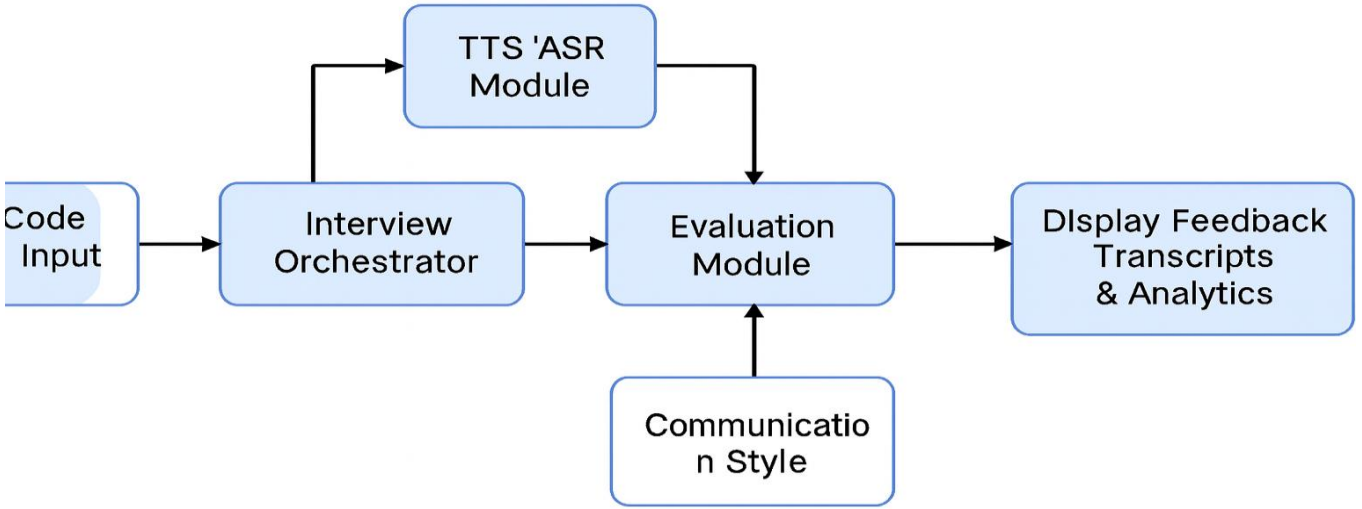
Per-Interview Analytics and Overall Performance Tracking

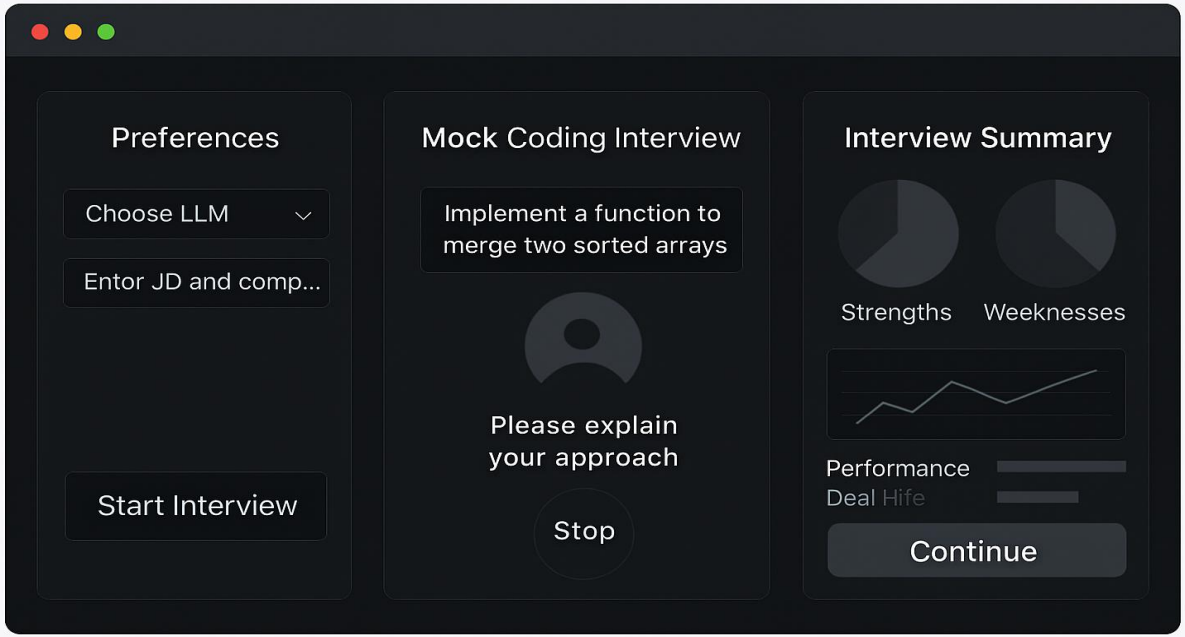




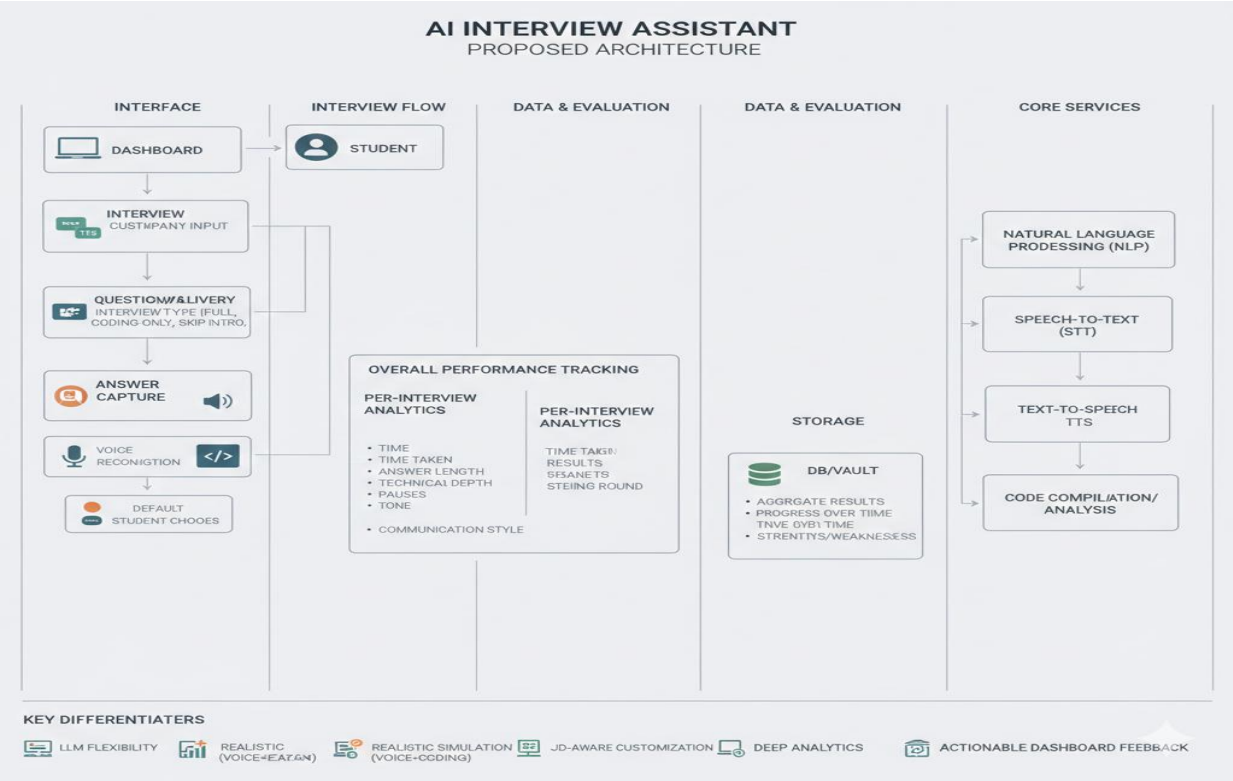
Process flow diagram :



Wireframes/Mock diagrams of the proposed solution :



Architecture diagram of the proposed solution:



Technologies to be used in the solution:

- Frontend (UI/UX): **Streamlit** (web app framework) Streamlit-Code-Editor(coding interface)
- Backend & Orchestration: Python (**FastAPI**) , Custom Interview Flow Orchestrator .
- Voice Interface: Speech Recognition **(Whisper / Google Speech-to-Text)** , Text-to-Speech (gTTS / Amazon Polly / **ElevenLabs**)
- LLM Integration :**Opensource Models**,OpenAI / Cohere / Mistral APIs (**user-selectable models**)
- Prompt customization based on JD & company
- Data & Storage:- SQLite / PostgreSQL / MongoDB (interview logs, analytics)
- Analytics & Dashboard:
- - Pandas, Plotly / Altair / Chart.js (visualizations)
- Deployment & Scaling (Future Scope): Docker (containerization) ,GitHub Actions (CI/CD) ,Cloud hosting (AWS)

Estimated implementation cost :

1. Hardware Requirements :Laptop/Desktop (Mid-range)
CPU: Quad-core (Intel i5 / AMD Ryzen 5)
RAM: 16 GB (to handle Streamlit + small ML models)
Storage: 256–512 GB SSD (for logs, transcripts, models)
GPU: *Optional.*

2. LLM APIs (Optional) → If you use small local models (e.g., transformers with DistilBERT, GPT4All), cost = **₹0**.
If cloud APIs (OpenAI/Cohere): ~$10–20/month for light usage.

✅ **Total Cost (Local Setup)**
Initial Setup: **₹0** (if hardware already available).
Recurring Cost: **₹0** (local models) OR ~$10–20/month (if using external LLM APIs).

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Thank You