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INSTITUTE

∞ Meta

Pragati

AI for Impact Hackathon

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HACK2SKILL

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Which domain does your idea address? (Agriculture / Healthcare / Skilling / Education): Skilling

What is the problem you are solving? (50 words max)

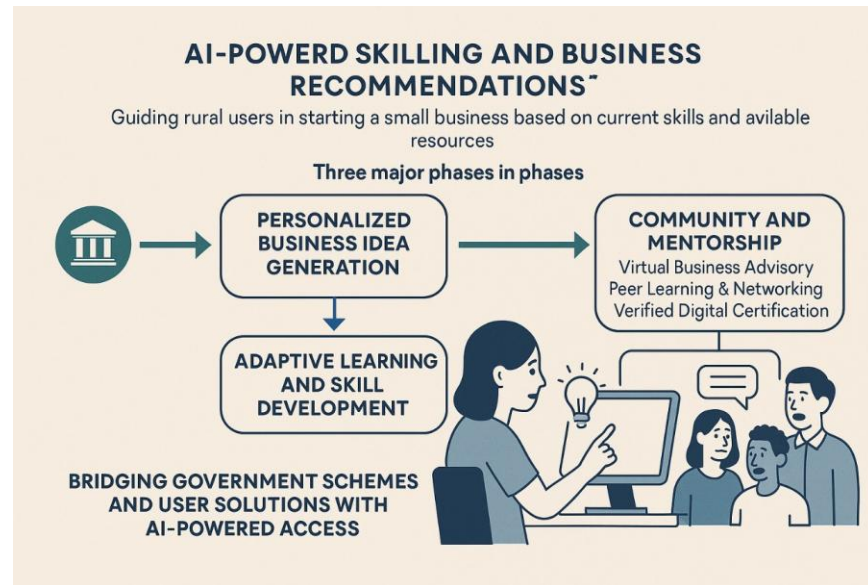
Many underprivileged individuals in small villages or towns lack access to business opportunities, skill development, and professional networks. Existing solutions do not combine personalized AI-driven learning with a community-based network. They are unaware of government schemes that could benefit them due to the absence of a centralized platform providing easy access to this information.



Describe your solution. How different is it from any of the other existing ideas? How will it be able to solve the problem? USP of the proposed solution? What is the intended impact of your solution (max 350 words).

Our platform is an AI-powered skilling and business recommendation website that guides rural users through the process of starting a small business based on their current skills and available resources. The system works in three major phases:

- **Personalized Business Idea Generation**
- **Adaptive Learning and Skill Development**
- **Community and Mentorship** (Virtual Business Advisory, Peer Learning & Networking)
- **Bridging Government Schemes and User Solutions with AI-Powered Access.**



USP & Impact:

This platform stands out by combining personalized AI-driven learning, automated business **idea recommendations for MSMEs**, and a strong **community support system**. It bridges the rural skill gap while fostering a social network for peer support and mentorship. The **goal is to empower** millions of underprivileged **rural youth**, driving local employment and sustainable economic growth.

Picture a platform that **fuels economic growth** by using AI to provide personalized business recommendations based on skills and resources. With **step-by-step AI Augmented guides** and seamless access to mentors, **job opportunities**, and **government schemes via AI-generated PDFs**, we simplify skill development and unlock new opportunities for success.

Who is the primary user of your solution, and explain how your solution will leverage open-source AI to address the aspects mentioned in the [Key Design Guidelines](#) (max 200 words).

Our **primary users** are rural individuals from **small villages and towns** in India—often with limited formal education—**seeking to improve their income** through various means. Rural Indians face significant challenges in starting businesses, including:

- A **lack of** personalized, hyper-localized **guidance** (e.g., "What crop-based business is best suited for my village?")
- **Difficulty accessing** and navigating **government schemes** (e.g., SVEP, KVIC)
- **Limited availability of offline**-first, voice-driven skill development resources in their native language.

Leveraging Open-Source AI:

Our platform helps underprivileged individuals in small villages and towns start small businesses or find jobs based on their skills and available resources. We will use **open-source AI** to make the platform accessible, efficient, and cost-effective.

How AI Will Power Our Solution:

- **Smart Recommendations** – Using **AI4Bharat/Llama 3.3**, our system will **analyze user inputs in regional languages** and suggest suitable businesses or jobs.
- **AI-Generated Learning Content** – NLP models will create personalized scripts, while **AI4Bharat & IndicConformer** will **generate voiceovers in local languages** to make skill-building easy.
- **Networking & Support** – **Custom RAG** will **recommend** mentors, **financial aid**, and **government schemes** to help users succeed.

By leveraging open-source AI, we ensure **cost efficiency, transparency, and rapid innovation**, making entrepreneurship and employment opportunities more accessible to the needy.



FAISS
Scalable Search With Facebook AI



How is this solution scalable? (100 words max)

Our platform is highly scalable due to its **AI-driven automation, modular architecture**, and **cloud-based deployment**. Using **open-source AI models**, we can continuously improve recommendations and learning content without heavy infrastructure costs. **Multilingual NLP** and **text-to-speech systems** ensure easy expansion to different regions. **FAISS-based indexing** allows efficient handling of large user databases, while cloud solutions enable seamless scaling as user demand grows. Additionally, AI-powered networking and government support features can be expanded dynamically. By leveraging **community-driven open-source advancements**, our solution remains adaptable, cost-effective, and capable of reaching millions across diverse geographies.

List of features offered by the solution

It is always better to add a few visual representations (drawings/sketches/illustrations etc.) to your presentation, it adds to the power through which it reaches the audience.

Features

1. Multilingual AI-Based Business Suggestions (based on user skills, resources, localized pricing, raw material availability, and success stories.)

2. Yojana Seeker (Scheme Assistant)

AI Agent: **Autonomous** LangChain agent matches profiles with schemes (e.g., SVEP loans).

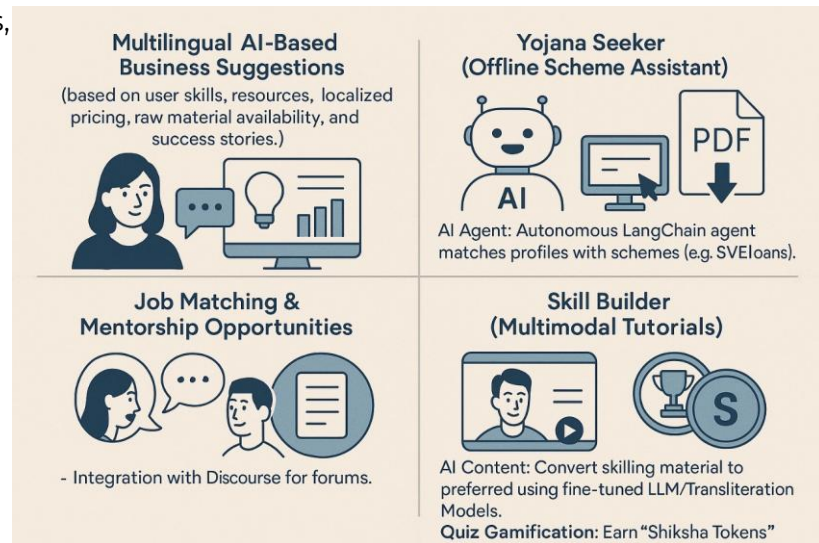
Offline Forms: Downloadable PDFs with voice-guided instructions ("Step 1: Take Aadhaar card to panchayat office").

3. Job Matching & Mentorship Opportunities – Integration with Discourse for forums.

4. Skill Builder (Multimodal Tutorials)

AI Content: Convert skilling material to preferred using fine-tuned LLM/Transliteration Models.

Quiz Gamification: Earn "Shiksha Tokens" to unlock advanced courses.



What open-source AI tools and technologies will you use to design the solution?
(Please list all.)

Open-Source AI Tools & Technologies

1. NLP & Chatbot: Llama 3 , LangChain, FastText

2. Speech & Text Processing: Whisper, AI4Bharat - IndicF5 and IndicConformer

3. AI Video Generation: Stable Diffusion, Gradio



4. Frontend: React (PWA for offline support)

5. Backend: FastAPI (Python), Discourse (Networking)



6. Database: SQLite for offline

7. Deployment: Docker, Kubernetes for scaling



Why are these open-source technologies the most appropriate for your solution? (150 words max)

These open-source tools provide **cost-effective, scalable solutions** for an AI-driven, low-bandwidth application. **Whisper and AI4Bharat models enable accessibility for users with low literacy** by offering automatic speech recognition and text-to-speech functionalities. **FastText ensures language flexibility**, crucial for supporting diverse Indian languages and dialects. **LangChain** enhances AI-driven user interactions by **enabling efficient question-answering** and contextual understanding with **Retrieval Augmented Generations**.

Additionally, **TensorFlow allows on-device AI processing to reduce cloud costs** and improve accessibility. **Hugging Face's model hub provides pre-trained models**, accelerating development. This combination ensures a scalable, inclusive, and cost-effective solution tailored for underprivileged communities.

Describe the Solutions Architecture (500 words)

Our platform is designed to be **lightweight, AI-driven, and optimized for users in low-connectivity regions**, ensuring accessibility and ease of use. The architecture consists of five key layers: **User Interface (PWA), Backend Layer, AI Layer, Skill-Building Content, and Community & Networking**.

1. User Interface (PWA)

The platform is built as a **Progressive Web App (PWA)** using **React + Vite**, ensuring fast performance even on mediocre **networks**. It supports both **text and voice-based interactions** for accessibility.

Key Features:

1. Voice Interface:

- **Whisper.cpp (Speech-to-Text):** Converts user voice inputs into text in 10+ Indian languages.
- **Coqui TTS (Text-to-Speech):** Provides audio guidance, making the platform user-friendly for those with low literacy.

2. Offline Support:

- **Service Workers & IndexedDB:** Enable caching of content, allowing users to access resources, forums, and tutorials offline.

2. Backend Layer

The backend is designed for **efficient AI orchestration, fast API handling, and lightweight storage** to ensure seamless performance.

Key Components:

1. AI Orchestration:

- **LangChain:** Manages AI workflows for business recommendations, government scheme discovery, and auto-filling application forms.
- **FastAPI:** Handles backend logic and API requests efficiently.

2. Database & Cloud Storage:

- **SQLite:** A lightweight database used for storing user profiles, progress, and recommendations.
- **Cloudinary:** Manages image storage for user profiles and business-related visuals.

3. PDF Generation:

- AI auto-generates pre-filled government scheme forms, allowing users to apply offline.

3. AI Layer

This layer powers **business recommendations, localized insights, and government scheme retrieval** using **fine-tuned AI models** and **retrieval-augmented generation (RAG)**.

Key AI Components:

1. Llama-3-70B:

- Connected with tool-calling to generate personalized business ideas based on user skills and resources.

2. RAG with FAISS:

- Fetches relevant government schemes and localized data.
- Ensures precise, real-time recommendations by retrieving knowledge from external sources.

3. data.gov.in Integration:

- Retrieves **real-time market trends, local commodity prices, and demand insights**, allowing hyper-localized business suggestions.

4. Skill-Building Content

To help users develop the skills required for their suggested businesses, the platform includes **AI-generated, offline-accessible learning materials**.

Key Features:

1. Video Tutorials:

- AI-generated instructional content in multiple languages, optimized for offline access.

2. Gamification:

- Users earn **“Shiksha Tokens”** by completing quizzes and engaging with content, unlocking advanced learning materials.

5. Community & Networking

A key aspect of the platform is **connecting users with mentors, networking opportunities, and a supportive community**.

Key Features:

1. Offline Forum:

- Community discussions are cached for **offline engagement**. Users can access past conversations and post queries even without an internet connection.

2. AI Moderation:

- **TinyBERT** ensures a **safe and high-quality discussion environment** by moderating content.

Data Flow

1. User Input:

- Users **speak or type their needs** (e.g., "I want to start a tailoring business").

2. AI Processing:

- **LangChain processes inputs** and generates **personalized business recommendations**, using localized data such as **market prices from data.gov.in**.

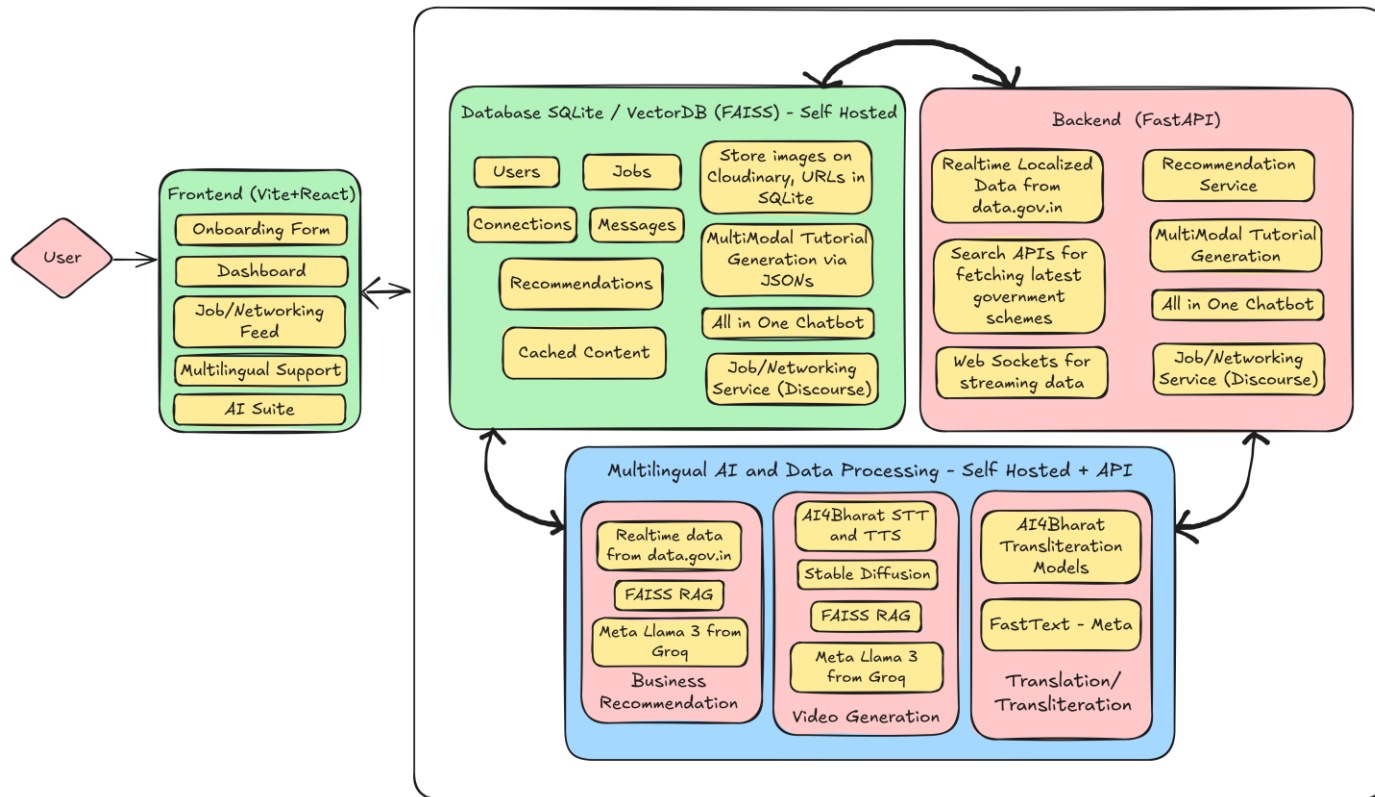
3. Scheme Application:

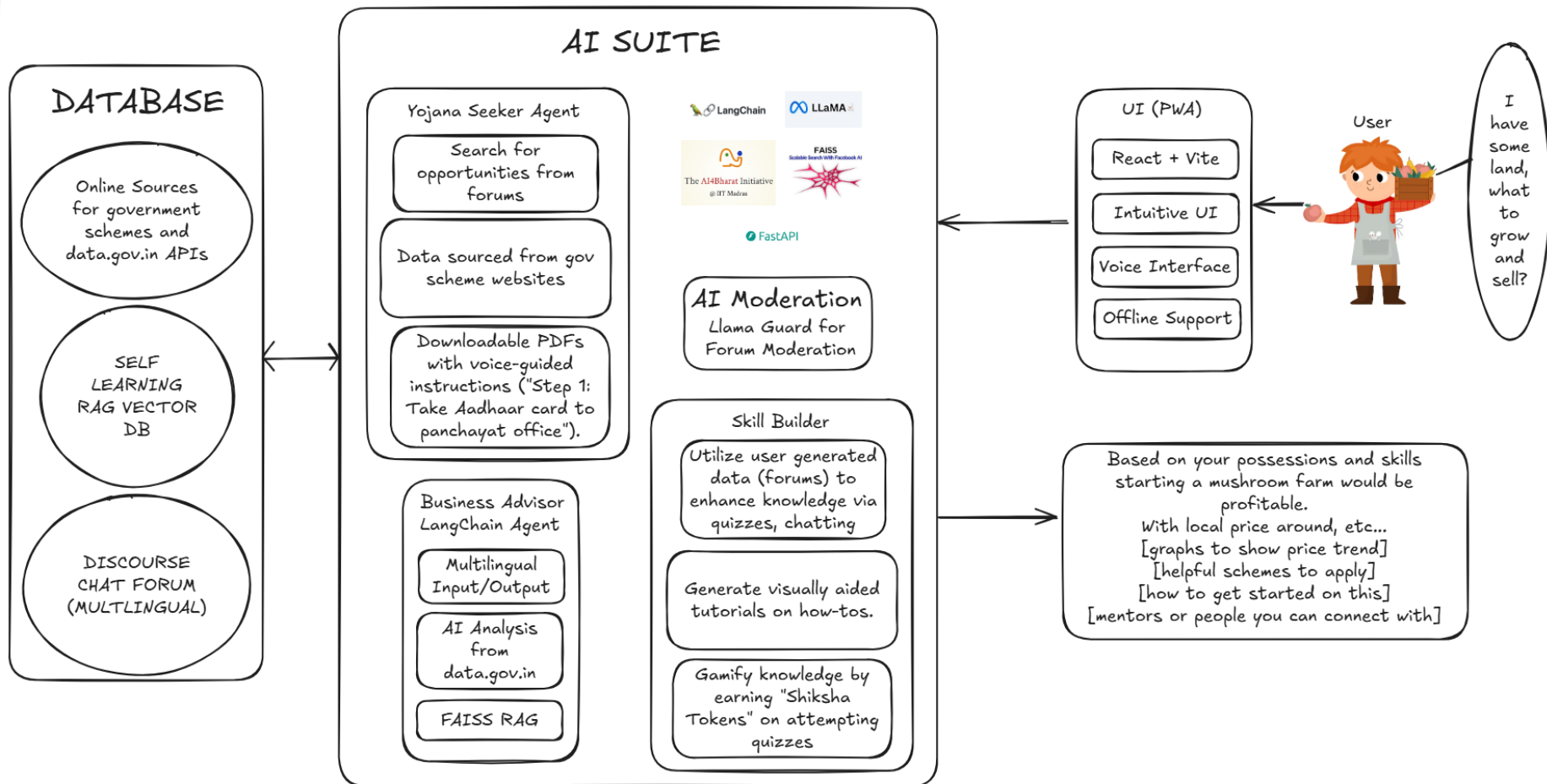
- AI **auto-fills government forms** and generates **PDFs for offline submission**, simplifying access to financial aid.

4. Skill Development:

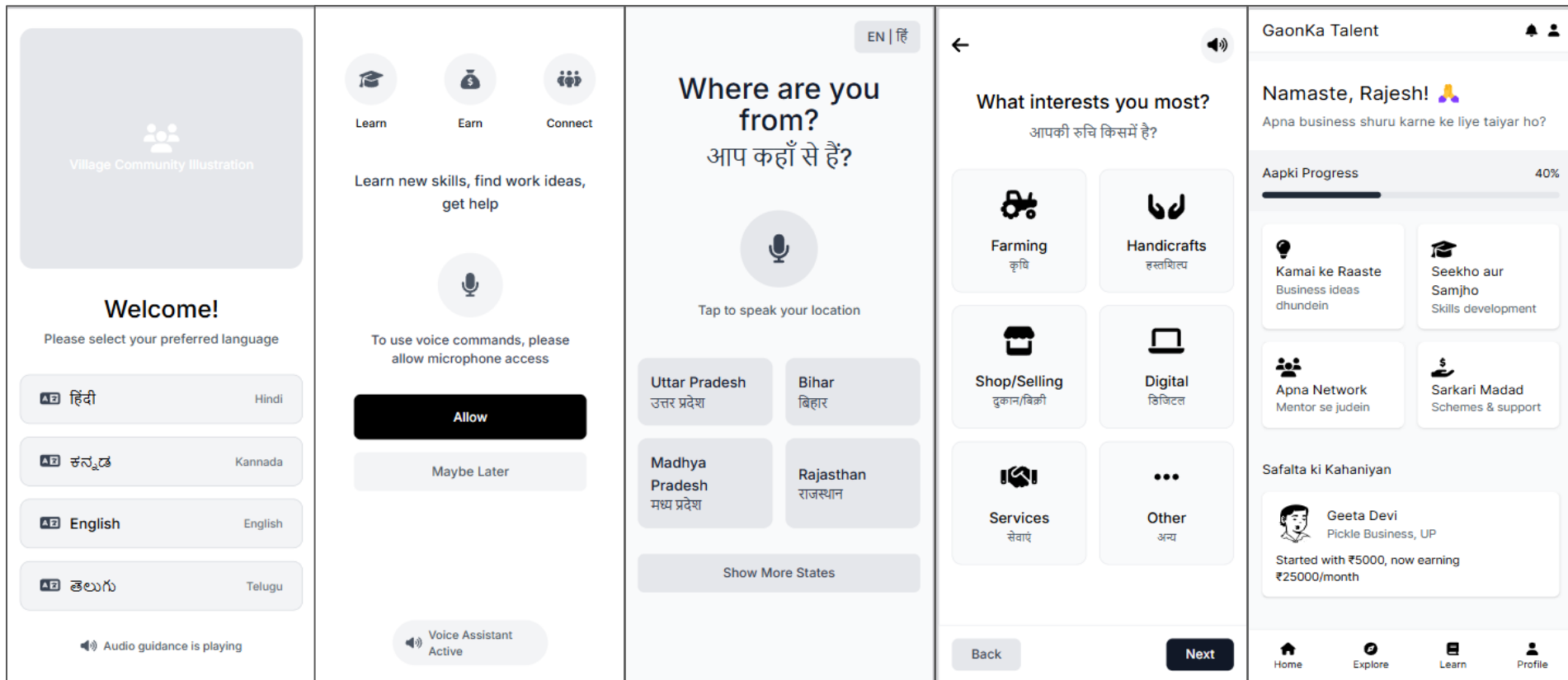
- Users access **offline tutorials and track progress**, ensuring **practical learning** to kickstart their business or job.

Provide a high-level architecture diagram or a use-case diagram of your proposed solution





Please share the wireframes/Mock diagrams of the proposed solution (optional)



How can we help?

हम कैसे मदद कर सकते हैं?

Loan for
Business

Farming Support



Education Help

View All
Schemes

Recommended Schemes

PM MUDRA Yojana

पीएम मुद्रा योजना

Loan up to ₹50,000 for small shops

View Details >

PM Kisan Samman Nidhi

पीएम किसान सम्मान निधि

₹6,000 yearly support for farmers

View Details >

Download Form PDF with Voice Guide



Tailoring Shop

सिलाई की दुकान

What you need

क्या चाहिए?

✂ Sewing Machine

🔧 Basic Tools

Potential Earnings

कमाई का अनुमान

₹15,000 - ₹30,000
per month

Steps to Start

शुरू करने के कदम

1. Complete basic tailoring course
2. Purchase equipment

Community



Discussions

Mentors



Priya Sharma

2h ago

कैसे मैं अपने सिलाई व्यवसाय को बढ़ा सकती हूँ?
How can I grow my tailoring business?

💬 12 📄



Meera Patel

5h ago

नए डिज़ाइन सीखने के लिए कौन सी क्लास अच्छी है?
Which class is good for learning new designs?

💬 8

+ Ask Question 🗣



Home



Community



Profile

Skill Builder



🔍 Search courses...



Basic Tailoring

बेसिक टेलरिंग

★ 50 tokens

Skillers@IITB



Naukri dhundho...



Sabhi Jobs

Part Time

Full Time

Dukan me Helper
ChahiyePaas
Me

📍 2 km door

₹300/din

Apply Kare

Silai ka Kaam

1 km

📍 Nearby Market

₹400/din

Apply Kare



Home



Jobs



Profile

What datasets will your solution use? Are they publicly available, synthetic, or user-generated?

Our solution will leverage a combination of publicly available and user-generated datasets to ensure highly personalized and accurate business recommendations.

1. Publicly Available Datasets

These datasets will provide foundational knowledge and insights:

- **MSME & Startup India Data** – Business opportunities, government policies, and funding programs.
- **Skill Development Datasets** – Open data from NSDC (National Skill Development Corporation) and other websites that offer skilling schemes.
- **Localized Prices** – Latest trends and prices of various goods from **data.gov.in**

2. User-Generated Data

Dynamic data from users will refine recommendations and improve learning of the RAG-powered recommendation system:

- **Skill & Resource Inputs** – User-submitted data on their existing knowledge and tools.
- **Learning Progress & Feedback** – User interactions with AI-generated content.
- **Community Engagement Data** – Peer discussions, mentorship interactions, and networking data.

By combining **public, synthetic, and real-time user data**, our platform ensures **scalable, adaptive, and inclusive solutions** for rural entrepreneurs.

Does your solution require cloud-based computation, or can it work with on-device processing? If cloud-based, how do you plan to address connectivity challenges and cost constraints?

Our solution utilizes a cost-effective hybrid approach, balancing on-device processing with cloud-based computation to ensure accessibility and manage costs effectively for rural users.

1. On-Device Processing:

Essential for addressing connectivity limitations, this allows users to:

Access **learning content offline** through downloadable multimodal tutorials. It's important to note these are not traditional videos but are assembled using **text scripts, AI-generated images/visuals** (potentially via tools like Stable Diffusion), and AI-generated speech/voiceovers in local languages (using tools like **AI4Bharat/IndicConformer/Coqui TTS**). This makes the content engaging yet suitable for low-bandwidth environments.

Use downloadable PDFs for government schemes, complete with voice-guided instructions. Run lightweight AI models directly on their devices for basic recommendations.

Benefit from cached content and **offline forum access via the Progressive Web App** (PWA).

2. Cloud-Based Computation:

Required for more complex, AI-intensive tasks such as:

- Generating personalized business recommendations using sophisticated AI models (like fine-tuned Llama-3).
- Creating the initial AI-driven text-to-speech and potentially the visual components for the downloadable tutorials.
- Managing the central community platform and mentorship matching features.

3. Addressing Connectivity Challenges:

Hybrid Model: The core reliance on downloadable content and on-device processing ensures basic functionality even with poor or no internet connection.

PWA & Caching: The React PWA architecture is designed for low-bandwidth use and utilizes caching for offline access.

Bandwidth Optimization: Techniques like data compression, AI model quantization/pruning, and progressive content loading are planned to minimize data usage when cloud access is needed.

4. Addressing Cost Constraints:

Open-Source Focus: Extensive use of open-source AI frameworks (Hugging Face, PyTorch, TensorFlow) and models (Llama 3, Whisper, AI4Bharat etc.) eliminates software licensing costs.

Efficient Cloud Architecture: Utilizing serverless computing (like AWS Lambda or Google Cloud Functions) reduces costs associated with idle servers.

Cloud Credits: Leveraging startup programs from cloud providers (AWS, Google, Azure) for initial credits or utilize hackathon credits.

Model Optimization: Quantizing and pruning AI models reduces computational requirements and thus inference costs.

Partnerships: Seeking collaboration with government schemes (Digital India, PMGDISHA) and NGOs for potential subsidized cloud hosting or sponsorships for learning content.

Maximizing On-Device Use: Shifting processing to the user's device whenever feasible directly reduces cloud operational costs.



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THANK YOU