Problem Statement: AI-Powered Learning Tool With Google Cloud Technologies [Code Vipassana].

Creating an advanced learning tool leveraging Google Cloud's Vertex AI, NLP API, and Cloud Run involves integrating Generative AI models like LaMDA and PaLM. The primary objectives are to dynamically adjust content, personalize learning paths, and provide real-time feedback to enhance accuracy, student engagement, and learning outcomes.

Team Name: HackHound

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"I hope the exit is joyful and i hope never to return."

— **Frida Kahlo**

NEHA SUSAN ABY

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"The people who are crazy enough to think they can change the world are the ones who do."

-Steve Jobs

ROSE TONY VITHAYATHIL

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"The only way to achieve the impossible is to believe it is possible." - Charles Kingsleigh

ANN MARY I.M

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"The future belongs to those who believe in the beauty of their dreams." - Eleanor Roosevelt

HYPOTHESIS

- The problem of accessibility in education is a critical issue.
- Traditional educational platforms often **lack resources and tools** for individuals who are interested in learning sign language.
- The existing problem could be the lack of accessible and engaging resources for learning sign language online.
- Traditional methods might not cater to various learning styles.
- Furthermore, there might be **limited integration** of sign language learning tools with modern technologies, which this initiative aims to solve.

Points to Address

1. **Limited Resources:** Existing online platforms might not have comprehensive or user-friendly resources for learning sign language.
2. **Engagement and Effectiveness:** Learning sign language can be challenging without interactive and engaging tools. Many platforms lack the interactive elements necessary to effectively teach sign language, such as video demonstrations, interactive quizzes, or live practice sessions.
3. **Technology Integration:** The use of modern technologies like API, Google Vertex, Lambda, and Palm presents an opportunity to innovate and create a more effective learning experience. However, the integration of these technologies into sign language learning platforms is often lacking or nonexistent.
4. **Diverse Learning Needs:** Individuals have diverse learning styles and preferences. Some might learn better through visual aids, while others might require more interactive methods. Existing platforms may not cater to these diverse learning needs adequately.
5. **Inclusivity and Accessibility:** Accessibility standards are often not met in educational platforms, excluding individuals with disabilities. A lack of support for sign language learners can further marginalize this community.

Values it will deliver :

The initiative has the potential to deliver multiple types of value, enriching users' experiences while also positioning the platform or organization as a leader in inclusive education powered by technology.

- Functional Value
- Emotional Value
- Economic Value
- Brand Value

- FUNCTIONAL VALUE

- This initiative creates a platform where people can easily learn sign language online.
- It's designed to work well for different ways people learn, making it easier for anyone to understand and use.
- By doing this, it makes online education more accessible for everyone, regardless of how they prefer to learn.
- Overall, it's a user-friendly way for people to learn sign language.

-EMOTIONAL VALUE

- Integrating sign language learning with advanced technology demonstrates the brand's dedication to inclusivity, education, and innovation.
- It's a modern and caring approach, ensuring that everyone, regardless of their abilities, feels included.
- Using cutting-edge tech to provide practical assistance makes the brand stand out as impressive and forward-thinking.
- This move signifies their commitment to society and showcases their mastery of the latest technology for making a positive impact.
- Ultimately, it positions the brand as socially responsible, forward-looking, and tech-savvy, earning praise for creating an inclusive learning environment.

-ECONOMIC VALUE

- Integrating sign language learning with advanced tech showcases the brand's commitment to inclusivity, education, and innovation.
- It's a modern approach that signals care for everyone, ensuring no one is left out. By using cutting-edge technology to offer practical help, the brand appears really impressive.
- This move suggests they're forward-thinking, caring about society, and mastering the latest tech to make a positive impact.
- Overall, this positions the brand as a socially responsible, forward-looking, and tech-savvy company, earning admiration for its efforts to create an inclusive learning space.

-BRAND VALUE

- By integrating sign language learning using advanced technologies, the brand or platform can show it cares about inclusivity, education, and innovation.
- This can make the brand look really good. It shows they're modern, care about everyone being included, and are using the latest tech to do something helpful.
- This can make people think highly of the brand, seeing it as a forward-thinking, socially responsible, and tech-savvy company.

TARGET AUDIENCE :

While the initiative primarily aims to cater to individuals interested in learning sign language, it supports and benefits the deaf and hard-of-hearing community.

By providing an accessible platform for learning sign language, it directly contributes to making education and communication more inclusive for this community.

However, the initiative's scope isn't limited solely to the disabled deaf community; it's designed to be inclusive and accessible for anyone interested in learning sign language, irrespective of their background or abilities.

Specially the Students or Learners , Educators or Instructors and Business or Organization.

Where does our solution fit:

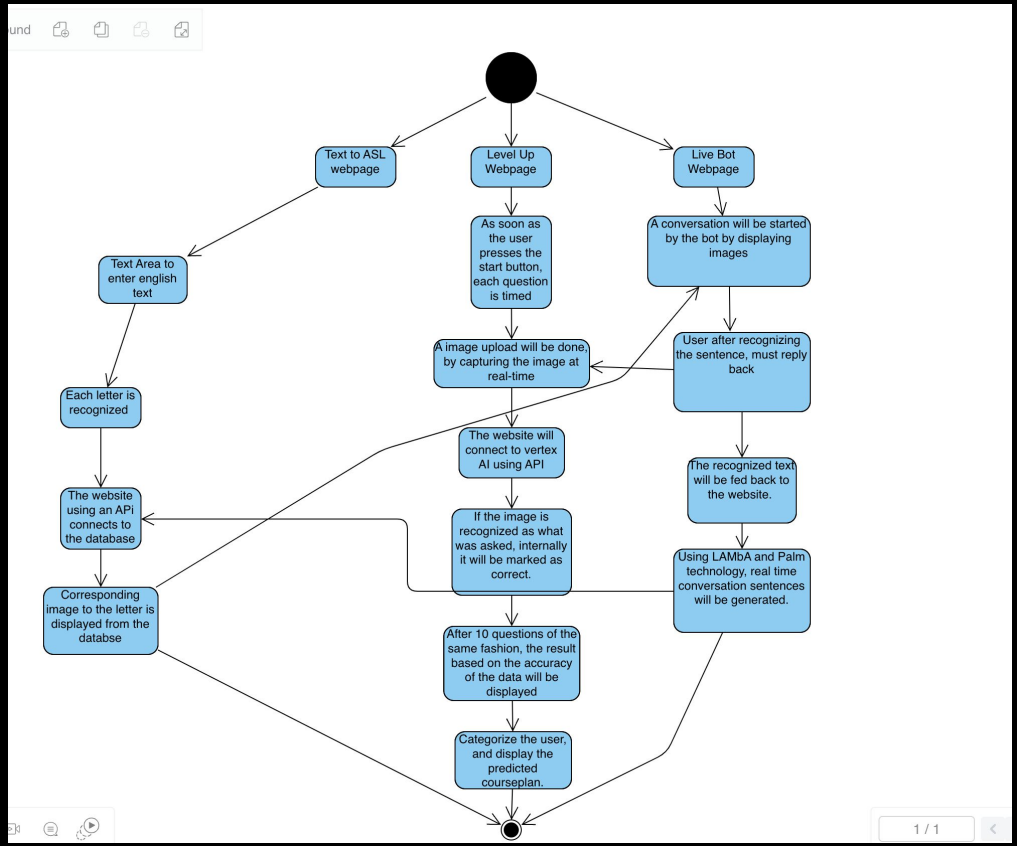
Our solution focuses on **Intelligent Process Management (IPM).**

- **Machine Learning:**
  - SignHound contents are customized read real-time data from the user and display the results by understanding the patterns displayed by the user.
  - The application is taught various ASL letters, words, etc. which will enable the website to recognize the same, when the user inputs it to the website.
- **ASL-Enhanced User Interfaces:**
  - In order to make the website accessible and user friendly to the deaf community, our website provides real-time translations by allowing the user to upload images to do the same.
  - In addition, as a learning website, our app provides real-time feedback to help the user/client modulate their input according to the feedback.

MAIN FEATURES USED :

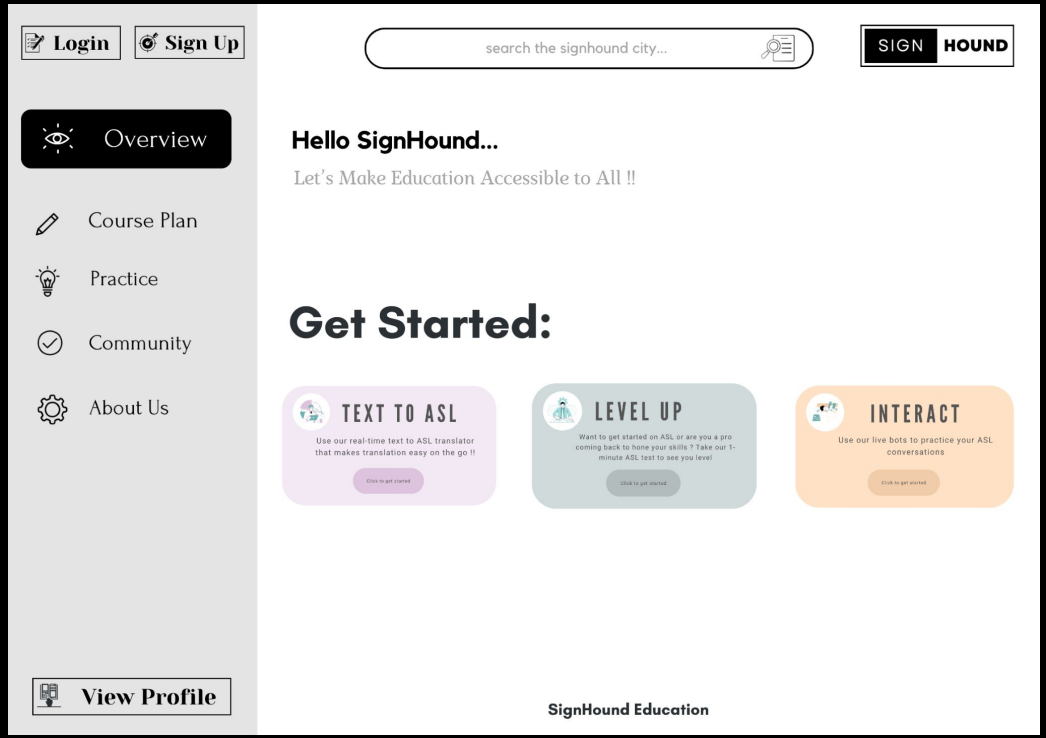
- **Introductory Quiz** : To Find the level of the user to provide specialized content.
- **Video Tutorials** : Covers all the lectures
- **Customized Learning Path** : Analyse the users Learning pattern based on their strengths and weakness and provide content
- **Progress tracking and Analytics** : Implement a system to track users progress and provide detailed analytics. Includes performance metrics , time spent etc.
- **Gesture Recognition** - Recognize and Interpret sign language gestures captured by the device's camera.
- **Real Time Translation** - Use tools to translate spoken language into sign language in real- time.
- **Realistic interaction with AI robot** - Generate conversational prompts in sign language. Allows user to engage in realistic conversations.
- **Dynamic content adjustment** – Adjust content , based on analysis and suggest relevant materials based on user performance.
- **Real time feedback system** - Tracks hand movements and provide instant feedback to the user.

Data Flow Chart:



Our current POC address the initial UX/UI and Data Management:

UX/UI:



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1.Enter the ASL for the letter: C

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User entered ASL translated to text

Live Bot ASL will be displayed in the next box

BOT ASL VISUAL DISPLAY

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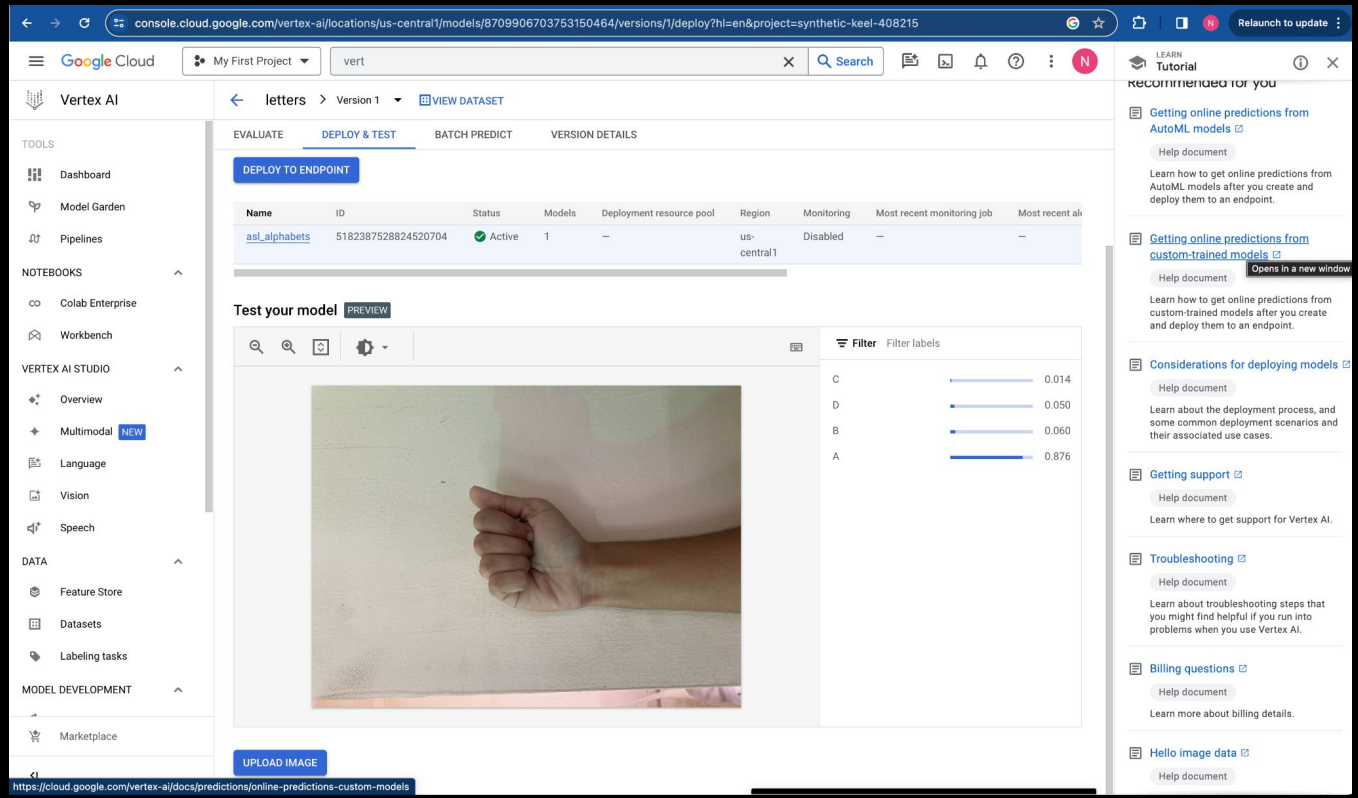
Data Management



Data Management