SMART INDIA HACKATHON 2024

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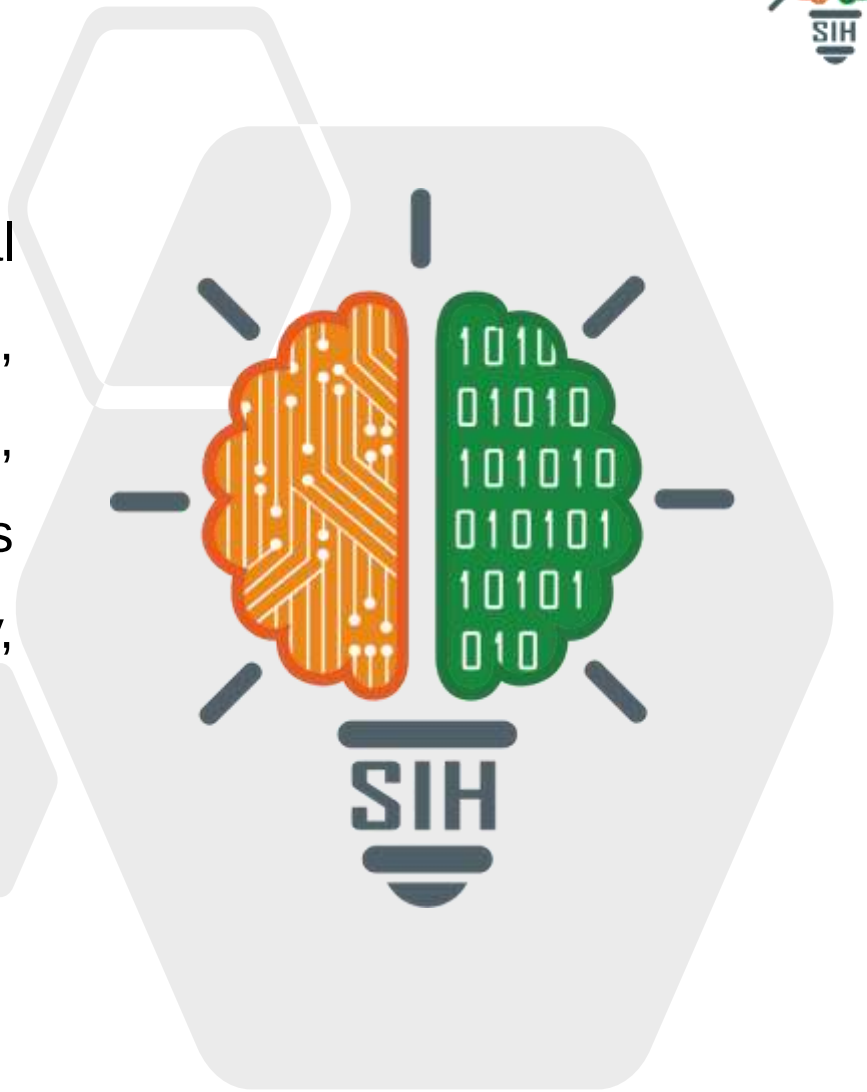
- **Problem Statement ID** - SIH1555
- **Problem Statement Title -** Create a Virtual Herbal Garden that provides an interactive, educational, and immersive experience to users, showcasing the diverse range of medicinal plants used in AYUSH (Ayurveda, Yoga & Naturopathy, Unani, Siddha, and Homeopathy).
- **Theme** - MedTech / Bio-Tech / Health-Tech
- **PS Category** - Software
- **Team Name** - Femme Futurists



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VIRTUAL HERBAL GARDEN

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Proposed solution :

- The **Virtual Herbal Garden** is an innovative digital platform designed to offer users a comprehensive and interactive experience with medicinal plants
- By leveraging advanced technologies like **3D modeling** and **Augmented reality/Virtual Reality**, the platform allows users to virtually explore a rich variety of medicinal plants.
- It offers **comprehensive botanical details**, *skincare and hair-care tips, nutritional guidance, fitness advice,* and *insights into traditional medicinal practices,* all **conveniently accessible** from the comfort of home.

Approach :

- The AYUSH sector is deeply rooted in the use of medicinal plants, yet **access to these plants is limited by the physical location of herbal gardens.**
- The **Virtual Herbal Garden addresses this gap by bringing the experience online**, making it accessible to a wider audience.
- This solution ensures that the **rich heritage of traditional healing practices is preserved** and made available to a broader population.

Innovation and Uniqueness :

- What sets the Virtual Herbal Garden apart is its use of **realistic 3D models** that users can interact with, along with high-quality content that enhances the learning experience.
- The platform also offers advanced **search and filter functionalities, virtual tours,** and user interaction features like **bookmarking and note-taking.**
- This **combination of technology and traditional knowledge** bridging the gap between ancient wisdom and modern accessibility.

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TECHNICAL APPROACH

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PROCESS IMPLEMENTATION

Research and Planning

- ✓ Conduct research on medicinal plants and gather data.

Design

- ✓ Design the UI for the platform, ensuring it is intuitive and user-friendly.
- ✓ Create 3D models of the plants.

Development

- ✓ Develop the front-end using React.js and integrate it with the 3D models.
- ✓ Set up the backend server with Node.js and integrate the database.

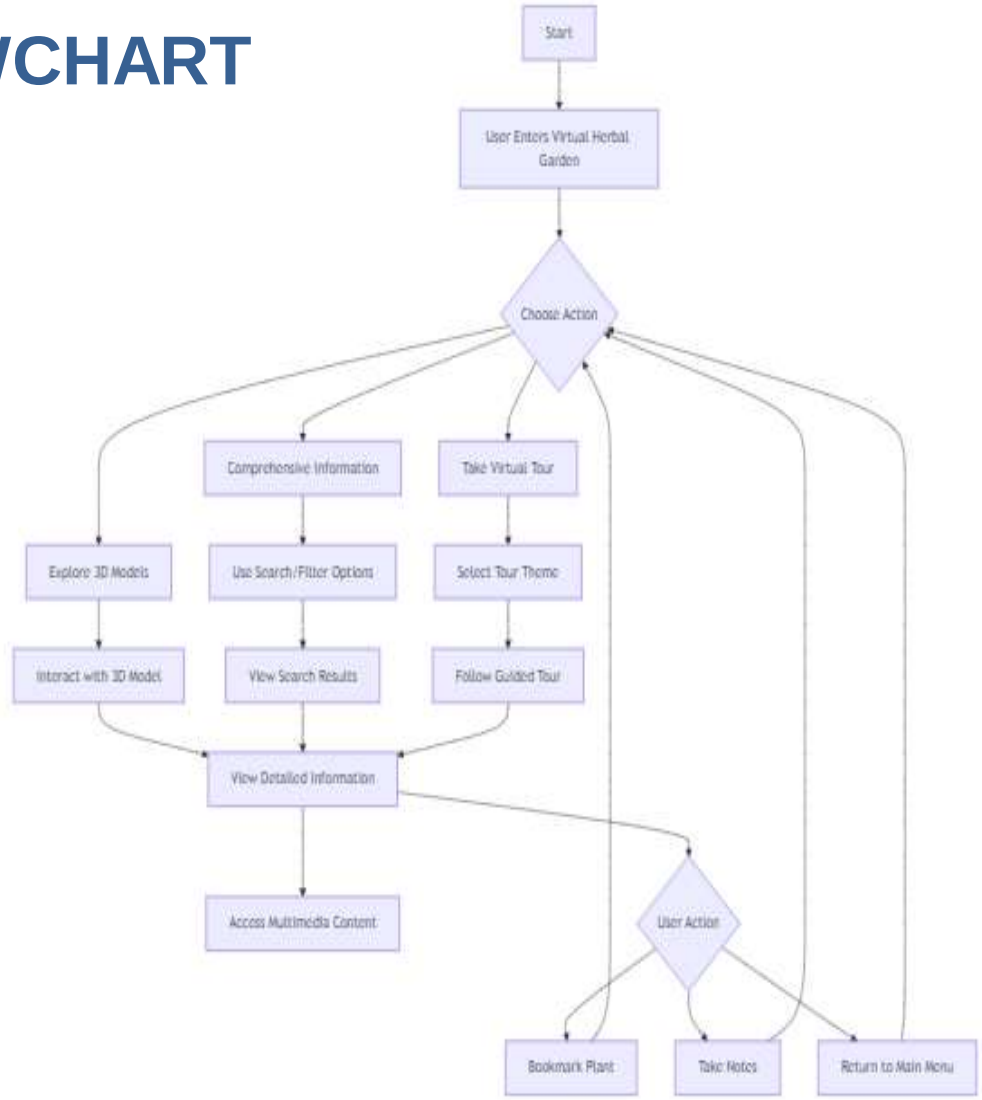
TECH STACKS

Tailwind CSS

blender

MongoDB

FLOWCHART



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FEASIBILITY AND VIABILITY

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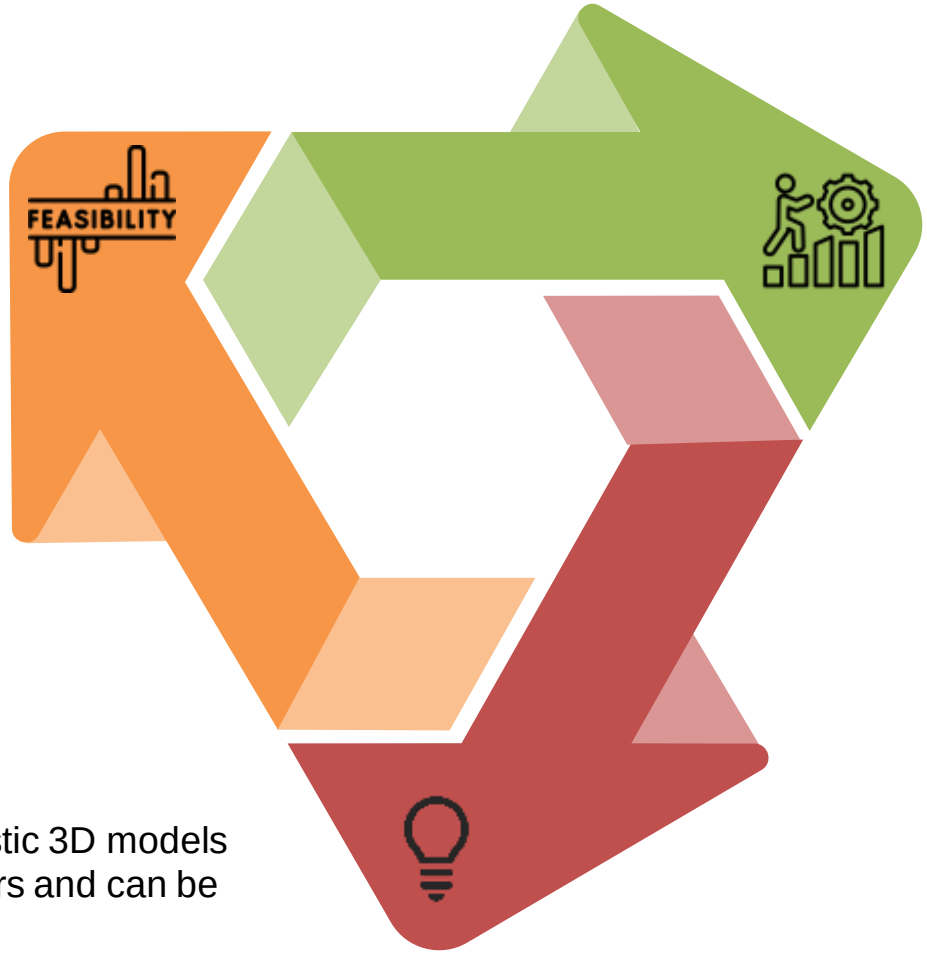
ANALYSIS OF FEASIBILITY OF IDEA

- It **leverages established 3D modeling software and AR/VR technologies** that are well-documented and supported.
- **Platforms like Unity have extensive libraries** and assets that facilitate the creation of interactive 3D environments



POTENTIAL CHALLENGES AND RISKS

- **High-Quality 3D Modeling:** Creating realistic 3D models of medicinal plants requires skilled designers and can be time-consuming.
- **Performance Optimization:** Ensuring that the virtual garden performs smoothly across different devices, especially on lower-end hardware, may pose challenges.

STRATEGIES FOR OVERCOMING THESE CHALLENGES

- **Modular Development:** Break down the project into smaller, manageable modules, allowing the team to focus on one aspect at a time.
- **Cross-Platform Testing:** Regularly test the platform on different devices and operating systems to identify and address compatibility issues.

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IMPACT AND BENEFITS

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POTENTIAL IMAPCT ON TARGET AUDIENCE

- **AYUSH Practitioners:**
- Provides practitioners with a comprehensive digital reference for medicinal plants, aiding in their practice and education.
- **Students & Researchers**
- Serves as an innovative learning platform for students studying botany, pharmacology, or traditional medicine
- **General Public:**
- Allows users to explore herbal remedies from the comfort of their homes, promoting self-care and wellness practices.

BENEFITS OF SOLUTION

- **Social Benefits:**
- **Health & Wellness:** Educates the public about natural remedies, contributing to a healthier society.

- **Economic Benefits:**
- **Cost-Effective Education:** Reduces the need for physical resources (like printed materials) by providing a digital alternative, making education more affordable.

WEB APPLICATION PREVIEW

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RESEARCH AND REFERENCES

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- **AYUSH Ministry Guidelines:** Leveraged guidelines from the AYUSH Ministry to ensure accurate representation of medicinal plants and their uses. https://ayush.gov.in/

- **Ethnobotany and Traditional Knowledge:** Incorporated research from ethnobotanical studies and traditional Ayurvedic texts to curate the list of medicinal plants and their properties.

- **Digital Herbarium Studies:** Referenced existing digital herbariums and virtual gardens to understand best practices in creating interactive plant models and user-friendly interfaces. https://en.wikipedia.org/wiki/Virtual_herbarium

- **3D Modelling and Interactive Media:** Utilized academic papers on 3D modelling and interactive media for developing the immersive virtual environment.

- **User Experience in Educational Platforms:** Researched UX design principles specific to educational platforms to create a user-centric, engaging digital garden experience.