SMART INDIA HACKATHON 2024

TITLE PAGE

- **Problem Statement ID –** 1555
- **Problem Statement** Title- Virtual Herbal Garden: Discover AYUSH Medicinal Plants
- **Theme-** MedTech / BioTech / HealthTech
- **PS Category-** Software
- **Team ID- 28330**
- **Team Name :** Griffyndor

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e-ausadhi Darshika

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❖ Proposed Solution:

❑ **Detailed explanation of the proposed solution:** A Virtual Tour to the Herbal Garden that provides users with an interactive, educational experience of medicinal plants used in the AYUSH department.

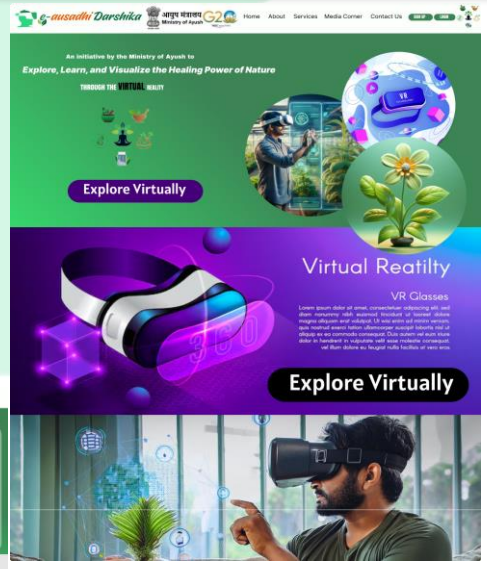
❑ **How it addresses the problem:**

1. **Accessibility**: Traditional herbal gardens are not easily accessible to everyone due to location or physical limitations. But e-ausadhiDarshika comes with totally different approach and removes these limitations by providing broad spectrum of learning methodologies.
2. **Educational Value:** A rich educational experience for students, practitioners, and enthusiasts that poses for a attractive way of learning through graphics and 3D models.
3. **Engagement:** Engage directly with the plants, which enhances learning and retention through VR experiences.

❑ **Innovation and Uniqueness of the Solution:**

- **Immersive Experience** at your comfort via non-traditional ways of learning.
- **Customizable Learning Paths:** Allows users to tailor their learning journey based on their interests in

➢ **Virtual Reality (VR)**
➢ **Augmented Reality (AR)**
➢ **High quality Images/Videos**
➢ **3D Models**
➢ **Audio description**



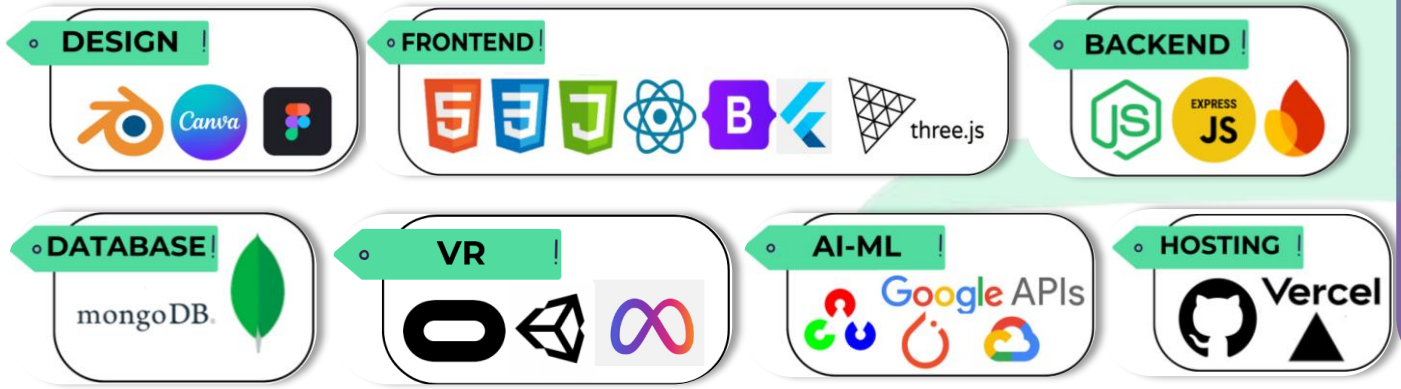
❑ **Features :**

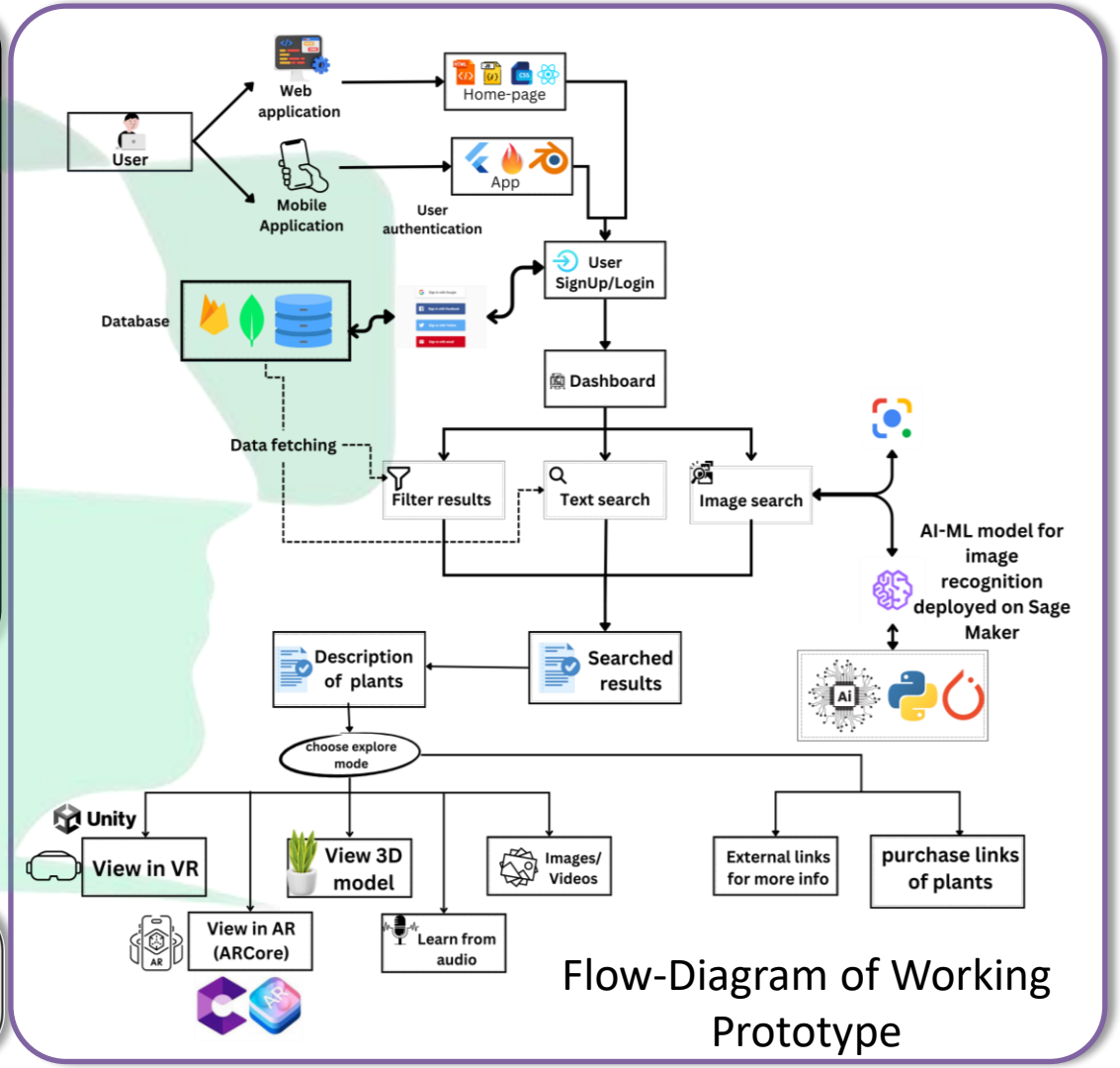
- Filter based on categories & Bookmark
- Text and Image search & Social Media Sharing
- AI chatbot for assistance

TECHNICAL APPROACH

❑ **Technologies to be used (e.g. programming languages, frameworks, hardware)**

a. Programming Languages – HTML,CSS, JS, Python, Dart, C#
b. Frontend – React, Bootstrap, Tailwind, Three.js
c. Backend – Node, ExpressJS, Docker
d. Database – MongoDB, Firebase, GCP
e. VR – Unity, Blender, Oculus
f. AI-ML – PyTorch,OpenCV,Pandas,Numpy,Scikit-Learn,SageMaker
g. Web Hosting – Vercel, GitHub
h. Mobile Application – Flutter





Flow-Diagram of Working Prototype

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FEASIBILITY AND VIABILITY

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❑ **Analysis of the feasibility of the idea :**

- **Technical Feasibility:** Whether the technology needed is available and whether the project can be built with current technological resources.
- **Economic Feasibility:** Evaluate the financial aspects, including initial ongoing expenses, and potential revenue.
- **Operational Feasibility:** Analyze if the organization has the resources and capability to implement and maintain the project.
- **Legal and Regulatory Feasibility:** Ensure the project complies with relevant laws, regulations, and standards.

❑ **Potential challenges and risks:**

- **Technical Challenges:** Identify potential technical hurdles such as integration issues, technology limitations.
- **Financial Risks:** Address the risk of budget overruns, funding shortages, or financial mismanagement.
- **Operational Risks:** Consider issues related to resource allocation, staff turnover, or operational inefficiencies.
- **Market Risks:** Evaluate the risk of market changes, competition, or shifts in customer preferences that could impact the project's success.
- **Regulatory Risks:** Discuss potential legal challenges, compliance issues, or changes in regulations that could affect the project.

❑ **Benefits of the solution (social, economic, environmental, etc.) Strategies for overcoming these challenges**

- **Technical Solutions:** Implement robust testing and quality assurance processes. Invest in scalable technology and consider alternative technical solutions if necessary.
- **Financial Management:** Seek additional funding sources if needed and maintain financial oversight.
- **Operational Planning:** Create a comprehensive project plan with clear milestones. Ensure adequate training and support for the team.
- **Market Analysis:** Conduct thorough market research to stay ahead of trends and competitors.
- **Legal Compliance:** Engage with legal experts to ensure compliance with all regulations.

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IMPACT AND BENEFITS

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❑ Potential impact on the target audience :

1. **Target Audience Identification:** Clearly define who the primary and secondary target audiences are. Consider their demographics, needs, and how they interact with the solution.
2. **Impact on Users:** Discuss how the solution will directly affect the lives of users. This could include improved quality of life, enhanced productivity.
3. **Feedback and Adoption:** Address how feedback from target audiences will be collected and how it will influence the implementation.
4. **Long-Term Impact:** Consider the long-term effects on the target audience, such as changes in behavior, attitudes, or lifestyle.

❑ Benefits of the Solution

1. **Social Benefits:** Explain how the solution will contribute to the community or society. This could include improved social interactions, enhanced access to services, or positive effects on social well-being.
2. **Economic Benefits:** Outline the economic advantages, such as cost savings, revenue generation, job creation, or increased economic activity. Consider both direct and indirect economic impacts.
3. **Environmental Benefits:** Detail any positive environmental impacts, such as reduced resource consumption, decreased waste, or improved sustainability practices. If applicable, mention any certifications or standards the solution adheres to.
4. **Other Benefits:** Highlight any additional benefits that do not fall into the above categories, such as technological advancements, innovation, or contributions to knowledge.

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RESEARCH AND REFERENCES

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- **Video for Demonstration :**
  1. https://drive.google.com/drive/folders/1amD_IMZoOznnxJ0uj6pv-NGxFsNe2baD?usp=sharing*
  2. https://www.youtube.com/watch?v=FDE1CwYFCrM
- **Demo Project (GitHub Link) :**
  1. https://github.com/ayushrskiaa/SIH-project-2024
  2. https://github.com/ayushrskiaa/SIH-project-docs
- **Research on various Herbal Plants :**
  Link : https://drive.google.com/drive/folders/1amD_IMZoOznnxJ0uj6pv-NGxFsNe2baD?usp=sharing*
- **Research & Refferences :**
  1. **Wikipedia :** https://en.wikipedia.org/wiki/Medicinal_plants
  2. **Dabur :** https://shorturl.at/M9Dc4
  3. **Medicine Library :** https://www.ncbi.nlm.nih.gov/books/NBK92773/
  4. **HerbMed :** https://www.herbday.org/gallery/
  5. **Herbal Academy :** https://theherbalacademy.com/
  6. **NCCIH :** https://www.nccih.nih.gov/health/herbs

Virtual Reality (VR) immerses users in simulated environments, enhancing experiences . Research shows VR improves learning retention, therapeutic outcomes, and real-world skill application.

Augmented Reality (AR) overlays digital content onto the real world and enhance user interactions. Research indicates AR improves task performance and learning engagement.

3D models of plants offer detailed visualization for scientific research, enhancing botanical studies. Research shows these models aid in plant morphology analysis and accurate simulations of ecological environments.