

Format of Project Synopsis

Title: Patient Timeline Visualization by Streamlining Medical Questionnaires and Overcoming the Clinical Summary Challenge.

Introduction: The "Swastha" project intends to revolutionize healthcare by developing a user-friendly digital interface that gamifies questionnaires, streamlines patient timeline visualization, and delivers insightful clinical summaries. With multilingual text and speech support, this comprehensive digital solution promotes inclusivity and streamlines healthcare by integrating data from diagnosis centers and pathology labs. Additionally, the platform provides useful details on over 15+ government schemes and yojanas, is regularly updated, and includes state-specific benefits, making it a comprehensive tool for empowered patient engagement in the Indian healthcare system.

Problem statement: To design a digital interface that can take in any form or questionnaire and create an interactive gamified version to reduce user fatigue and develop an efficient and aesthetically pleasing visualization that depicts a patient's history on a timeline accurately and efficiently. Build a user-friendly dashboard that displays a comprehensive timeline of patients' medical history, including appointments, diagnoses, medications, and other important information also to develop an efficient and intelligent summary of key patient history and current data visual form on a single table/panel, or in text/spoken form, build a user-friendly graphic/table of clinical summary.

Objective:

The objective of this project is to develop a comprehensive and integrated solution that combines patient timeline visualization and clinical summary generation to improve healthcare management.

Specifically, our goals are:

1. Create an efficient and user-friendly patient timeline visualization dashboard that accurately represents a patient's medical history, including appointments, diagnoses, medications, and other significant events.
2. Design an intelligent clinical summary system that consolidates key patient history and current data, prioritizing recent information and trends in medical records.
3. Provide options for presenting the clinical summary in both visual and text/spoken formats, with durations of 1 minute, 2 minutes, and 5 minutes, to cater to the needs of both patients and physicians.
4. Ensure that the solution supports text-to-speech functionality, enabling verbal presentation of the summary for accessibility and ease of use.
5. Ultimately, enhance patient engagement and healthcare provider efficiency by empowering patients with a better understanding of their health journey and physicians with quick access to critical patient information for informed decision-making.

Scope:

1. Swastha Functionality: empowers healthcare providers with real-time access to patient information, simplifying documentation and enabling seamless communication between patients and their providers.
2. Patient History Data: The dataset will contain relevant medical history, lab results, diagnoses, treatments, and other essential health-related information.

3. Features: Often, physicians need to quickly review a chart and history before meeting with a patient. The presentation of a clinical summary can impact the efficiency of a physician.

Expanded Use Cases:

1. Patients **enroll** with the administrator, obtaining a unique identifier.
2. Patients or healthcare aides submit **information** and respond to predefined queries.
3. Patients view their **healthcare records** presented in a graphical timeline.
4. Physicians examine patient panels, historical **timelines**, and concise medical overviews.
5. Medical personnel **retrieve information** according to their responsibilities.

Methodology:

1. Swastha multilingual questionnaire utilizes various healthcare documents and forms to collect essential patient data and offers valuable insights into their medical background and preferences.
2. The Swastha timeline platform employs a user-friendly dashboard that arranges patient information in a clear timeline format, including medical history, appointments, diagnoses, and treatments with proper visualization.
3. Swastha Summarization will enhance physician efficiency by providing concise and intelligent summaries of patient histories with multilingual support, ensuring quick comprehension before appointments, and using machine learning techniques to efficiently extract and summarize key patient medical information.
4. Develop a sophisticated integration system utilizing APIs and seamlessly merge data from diverse diagnostic centers and pathology labs. Incorporate multilingual support through language processing efficient communication across various geographical regions.
5. Additionally, the platform provides useful details on over 15+ government schemes and yojanas, is regularly updated, includes state-specific benefits, and has partnerships with private insurance providers, making it a comprehensive tool for empowered patient engagement in healthcare.
6. Real-time access to patient data simplifies documentation and facilitates seamless communication between patients and their healthcare providers, fostering a personalized and caring approach to treatment

TimeLine:

1. Medical Questionnaires (web Interface): 1 Months.
2. Database Structuring – 1 Months.
3. Patient Timeline Visualization– 1.5 – 2 Months.
4. Clinical Summarization – 2 Months+.
5. Integration and Deployment – 1 Months.

Budget: We're not seeking funding, and we're concentrating on using free resources to build the project, at least for the prototype.

Expected Outcomes:

The expected outcomes of our college capstone project, aiming to create Patient Timeline Visualization, can be varied and should match our project objectives:

1. System with a user-centric digital interface that simplifies and gamifies medical questionnaires, making them engaging and easy to complete.
2. Secure patient-provider communication, quick information exchange, enhanced interactions, and comprehensive Patient timeline visualizations for informed healthcare.
3. Quick access to critical patient data leads to better-informed decisions in less time and Versatile Information Delivery with the help of Clinical Summarization.
4. Optimizing system infrastructure minimizes costs and enhances agility, enabling swift adaptation to evolving healthcare needs and technologies for efficient healthcare delivery.
5. This system addresses the issue of traditional paper based medical forms which leads to fatigue resulting in inaccurate or incomplete data by digital interface.
6. Summary of key patient history and current data in visual form or text/spoken.

Risks and Mitigation:

Identifying and dealing with risks is super important in project management. Here are some risks and how we'll handle them:

1. Rely on data provided by various healthcare institutions, hospitals, and clinics to ensure a comprehensive and accurate patient profile.
2. Streamline healthcare with data from **Diagnosis centers** and **Pathology labs**.
3. **Multilingual support** (21 regional languages) web-application that embodies the essence of empowered patient engagement.
4. Enhance communication, interactions, and timelines for improved healthcare through **Universal ID (UID)**.
5. Comprehensive Information on 15+ Indian **Government Health Insurance Schemes and Yojanas**, Regularly Updated, and State-Specific Benefits, including Private Insurance Partnerships.

Conclusion:

The "Swastha" project represents a pioneering initiative in the healthcare sector, offering a comprehensive and user-friendly digital interface that facilitates streamlined patient engagement and care. By integrating innovative technologies, multilingual support, and real-time data access, Swastha not only promotes inclusivity but also empowers healthcare providers and patients alike, revolutionizing the landscape of healthcare delivery in India.

