Project Name: Oral Health Diagnosis and Medication Prescriber
Prepared By: Group 10
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Project Justification	Dental health issues can be expensive for both individuals and healthcare systems. By improving dental health, we may be able to lessen the financial burden associated with addressing dental diseases, which frequently necessitate costly operations. People who are unable to or have limited access to dental treatment are the project's target audience. Dental care is not always egalitarian, with marginalized communities frequently facing access restrictions to dental services. By increasing awareness, education, and inexpensive dental treatments, this effort can help overcome these inequities. Investment in dental care initiatives can contribute to breakthroughs in dental treatments, technologies, and preventive techniques. Dental care practitioners and patients alike can benefit from research in this subject. Dental care is a worldwide issue and relevant projects can facilitate the exchange of best practices, expertise, and resources across borders, thereby improving dental health worldwide.
Product Description	The project objective is to develop a pioneering dental care app designed to tackle the growing challenges associated with dental health while enhancing accessibility to dental healthcare services. One of the defining features of our dental care app is Remote Diagnosis. Users can swiftly obtain preliminary dental assessments by responding to a set of tailored questions about their dental health and the application user interface design is responsive and easy to navigate. What sets our app apart is the incorporation of cutting-edge Machine Learning and AI algorithms, implemented using Python programming language, at the backend. These algorithms analyze user responses and generate automated, highly accurate diagnostic reports, offering a novel approach to addressing dental issues. To further enhance diagnostic accuracy, we introduce the Image Upload feature, allowing users to submit visuals of their dental concerns. Following diagnosis, the app provides users with recommended medication and comprehensive oral care instructions. This medication is generated automatically using Artificial Intelligence ensuring accurate and effective medication. The scope of our project culminates in a user-friendly AI-based mobile and web

	application. We ensured the data privacy of our user by using health care databases like Redcap. The programming languages used for this project are python, JavaScript, html, PHP, and we built a strong interface using CSP (Content Security Policy), CORS (Cross Origin Resource Sharing) to avoid any security breach. This accessible and convenient platform empowers users to assess their dental health, receive personalized diagnoses and recommendations, and access medication.
Project Deliverables	Phase 1: Defining the project objective, gathering requirements from different medical professionals and from the IT team, identifying the risk associated with the plan. Time Period: September 14th to October 2nd Phase 2: Designing the user interface with web technologies, analyzing and processing data through ML algorithms. Integrating the medical questionnaire through secure API (Application Programming Interface) connection and developing the application system. Time Period: October 3rd to November 16th. Phase 3: Testing the application including software testing, and user acceptance testing. Maintenance and management of applications involving monitoring, updates, and bug fixes to ensure the application's long-term success. Time period: November 17th to December 4th.
Out-of-scope Items	• Does not include data pertaining to tumors and trauma cases. • The application does not encompass any physical medical examination or physical intervention of any degree as the data provided will be solely based on relevant information provided through the questionnaire.
Project Objectives	• To create a questionnaire that collects detailed information pertaining to the user's oral health, medical history, diet, and lifestyle. • To guarantee the privacy and security of data shared by the user through secure end-to-end data encryption which are compliant with the latest regulations. • To provide cross-platform compatibility on iOS and Android devices. • To provide an intelligent algorithm that provides appropriate and timely diagnosis that constantly updates itself based on the data provided the users.

Cost Objectives	1. Phase One - Project Initiation: Objective: To allocate resources for the initial project phase, including team formation, data procurement, planning, and risk assessment. Cost Objective: To manage the costs associated with project initiation, including team coordination and research data procurement ($10,000.00). 2. Phase Two - Execution and Development: Objective: To fund the development, testing, and launch of the dental care application. Cost Objective: To manage the costs of application development, data assimilation, and certification, including launching the beta version and developing marketing strategies ($75,000.00). 3. Phase Three - App Launch and Testing: Objective: To cover the costs related to launching the application, conducting testing, and providing user support. Cost Objective: To manage the costs of application testing, user support, obtaining feedback, and ensuring long-term support through continuous monitoring ($30,000.00). 4. Total Project Cost: Objective: To ensure that the project is completed within the allocated budget. Cost Objective: To manage the overall project budget, ensuring that the total anticipated cost does not exceed $115,000.00.
Schedule Objectives	1. Phase One - Project Initiation (14th 2023 – 02nd OCT 2023): Objective: To ensure the timely initiation of the project by defining objectives, gathering requirements, presenting information to the IT team, discussing schedules and budgets, addressing PHI and HIPAA policies, identifying and mitigating risks, and obtaining final approval from stakeholders. 2. Phase Two - Application Development and Implementation (03rd OCT 2023 – 16th NOV 2023): Objective: To complete the development phase on schedule by building the application, designing system architecture, creating the database and user interface, integrating medical questions, performing backend and frontend development, setting up security and compliance measures, and optimizing performance. 3. Phase Three - Closing Phase (17th November 2023 – 04th December 2023):

	Objective: To finalize the project within the designated timeframe by conducting application testing, user acceptance testing, launching the application, providing user support, obtaining feedback, and ensuring long-term support through continuous monitoring. 4. Overall Schedule Objective: Objective: To complete all project phases within the specified timeframes to ensure a timely launch of the dental care app by December 4, 2023. This includes meeting milestones and deadlines for each phase to keep the project on track. 5. Milestone Tracking: Objective: To track and meet key project milestones within each phase, ensuring that critical tasks are completed on time. 6. Risk Mitigation and Contingency Planning: Objective: To proactively identify and mitigate risks that may impact the project schedule and to have contingency plans in place to address unexpected delays or challenges. 7. Quality Assurance and Testing Compliance: Objective: To ensure that thorough quality assurance and testing activities are conducted without compromising the project timeline, maintaining a balance between quality and schedule.
Acceptance Criteria	The application will prioritize ease of use, accessibility for all users, and the delivery of relevant information. ▪ Diagnostic Accuracy: Achieve a diagnosis accuracy rate of at least 95% through user responses and image uploads. ▪ User Satisfaction: Maintain a user satisfaction level of 95% or higher regarding recommended treatments. ▪ Accessibility: Ensure an 80% or higher usability success rate for older adults. ▪ Data Security: Adhere to PHI and HIPAA data security policies. ▪ Engagement: Meet or exceed industry benchmarks for user engagement. ▪ Feedback Integration: Continuously update the app based on user feedback. ▪ Platform Compatibility: Guarantee that the app functions seamlessly on both iOS and Android. ▪ Clinical Validation: Obtain clinical certification for diagnostic accuracy and safety.

	▪ Budget Adherence: Complete the project within the allocated budget of $115,000. These criteria serve as a roadmap for evaluating the success of our dental care app project.
Constraints	▪ Data collection from various sources. ▪ Application development backlog. ▪ Limited time to develop and host the application. ▪ Constant requirement of maintenance and support staff in machine learning based applications may prove to be expensive in the long run.
Assumptions	▪ User Acceptance: The app will be embraced by users. ▪ Technology Access: Adequate access to technology will be available. ▪ Data Accuracy: Users will provide precise information. ▪ Data Protection: Robust data security measures will be in place. ▪ User Engagement: Users will actively engage with the app. ▪ Budget Adherence: The project will remain within budget constraints. ▪ Regulatory Compliance: The certification process will proceed smoothly. ▪ User Input: Valuable user feedback will be accessible. ▪ Platform Compatibility: The app will operate seamlessly on both iOS and Android. ▪ Market Demand: There will be substantial demand for remote dental services. These assumptions are pivotal for project planning and risk assessment