**Project Design Phase-I**

**Proposed Solution Template**

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| Date | 20th November 2023 |
| Team ID | Team-592802 |
| Project Name | Disease Prediction Using Machine Learning |
| Maximum Marks | 2 Marks |

**Proposed Solution Template:**

Project team shall fill the following information in proposed solution template.

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| **S.No.** | **Parameter** | **Description** |
| 1. | Problem Statement (Problem to be solved) | Developing a machine learning model for predicting 42 diseases based  on input symptoms aims to tackle the challenges of delayed medical  consultations and inaccurate online symptom searches. |
| 2. | Idea / Solution description | The code presents a comprehensive approach to disease prediction by utilizing machine learning classifiers on a dataset containing various symptoms. It employs diverse algorithms such as K-Nearest Neighbors, Support Vector Machines, Decision Trees, and Random Forests to predict the prognosis of diseases based on symptom profiles. The code also includes exploratory data analysis, symptom importance visualization, and model evaluation, providing a holistic solution for disease prediction. |
| 3. | Novelty / Uniqueness | The uniqueness of this solution lies in its integration of multiple machine learning algorithms to predict diseases, offering a versatile and robust approach. The inclusion of exploratory data analysis and symptom importance visualization enhances transparency and interpretability, setting it apart from simpler models. This comprehensive strategy distinguishes the code as a novel and innovative solution in the field of healthcare analytics. |
| 4. | Social Impact / Customer Satisfaction | The code's ability to predict diseases based on symptoms has significant social impact potential, aiding in early diagnosis and timely medical intervention. By providing a tool that enhances the efficiency of disease identification, the solution contributes to improved patient outcomes and reduced healthcare costs. Increased customer satisfaction stems from the empowerment of individuals with a proactive healthcare tool that prioritizes prevention and early detection. |
| 5. | Business Model (Revenue Model) | While the code itself may not directly generate revenue, its application can be integrated into a broader healthcare platform or service. Potential revenue streams could include licensing the technology to healthcare providers, incorporating it into telemedicine platforms, or partnering with health insurance companies to enhance risk assessment models. The code's predictive capabilities can be leveraged within a larger business model to create value for stakeholders. |
| 6. | Scalability of the Solution | The solution exhibits scalability, as it can be applied to larger datasets and extended to encompass a wider array of diseases and symptoms. Its modular design allows for seamless integration of additional features or improvements in data collection, ensuring adaptability to evolving healthcare needs. The scalability of the solution positions it as a versatile tool capable of addressing a broad spectrum of health-related challenges on a larger scale. |