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**Final Project Proposal**

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**Project Proposal: Building an AI-Powered Early Disease Diagnosis System**

**Model to Build:**

The primary goal of this project is to construct a sophisticated AI-driven early disease diagnosis system. This innovative system will rely on the application of cutting-edge machine learning techniques and the extensive wealth of medical data available to us. Its primary purpose is to forecast the probability of individuals developing certain diseases or health conditions in the future.

To accomplish this, we will leverage the power of machine learning algorithms, which will be trained on vast datasets of medical information and clinical records. By analyzing this wealth of data, the AI model will be able to make predictions regarding the potential onset of specific diseases.

These predictions are invaluable as they offer individuals and healthcare professionals a proactive approach to health management. Instead of waiting for symptoms to manifest, this system will enable early identification of health risks, paving the way for timely intervention and preventive measures. In essence, it will empower individuals to take control of their health and make informed decisions to mitigate future health concerns.

**What Will Be Predicted:**

The model will predict the risk of individuals developing particular diseases or health conditions, such as diabetes, heart disease, cancer, or neurodegenerative disorders. Predictions will be based on individuals' medical history, lifestyle factors, and genetic information.

**Features to Explore:**

Personal health history

Lifestyle factors (e.g., diet, exercise)

Genetic markers

Environmental factors (e.g., pollution, location)

Medical test results (e.g., blood pressure, cholesterol levels)

**Algorithms to Explore:**

The project will explore a range of machine learning algorithms, such as logistic regression, decision trees, random forest, and potentially deep learning techniques for analyzing genetic data.

**Architecture:**

The project can be implemented as a web or mobile application where users input their health information. The AI model can be deployed on a cloud-based server for real-time analysis and prediction.

**Data Source and Cloud Services:**

Data sources will include electronic health records, medical databases, genetic testing data, and user input. Cloud services can be used for data storage, processing, and analysis. Data privacy and security will be of paramount importance.

**Relevance and Importance:**

The project addresses a pressing issue in healthcare: early disease detection. Timely identification of health risks can lead to early intervention and improved health outcomes. The project aligns with advancements in precision medicine and personalized healthcare. I thought that is interesting as it is a very big issue nowadays.

**Datasets:**

Electronic Health Records

EHRs from healthcare institutions often contain a wealth of patient data, including medical histories, diagnostic codes, lab results, and more. I will use this to build predictive models for various diseases.