**HEALTH RISK MANAGEMENT SYSTEM**

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**Problem statement:**

The rising prevalence of chronic diseases and preventable health conditions emphasizes the need for proactive health management. Despite advancements in medical technology, individuals and healthcare providers often lack comprehensive tools to predict health risks, suggest preventive measures, and provide personalized recommendations. Furthermore, existing systems may struggle with accessibility, data privacy concerns, and the integration of diverse health data sources.

**Abstract:**

The Health Risk Management System (HRMS) is an advanced solution designed to predict, analyze, and manage health risks for individuals and organizations. By leveraging personal, medical, and environmental data, the system provides actionable insights into potential health risks such as diabetes, cardiovascular diseases, and hypertension. It employs predictive modeling, machine learning algorithms, and interactive dashboards to deliver a comprehensive health risk assessment and personalized preventive recommendations along with the calculating the risk scoring which is used to assess the health status and potential medical costs of individuals within a health insurance pool.

The HRMS integrates real-time data from wearable devices, external health APIs, and historical records to ensure accurate and dynamic predictions. Key features include user-friendly interfaces, alerts for preventive check-ups, and secure data handling in compliance with global privacy standards like GDPR and HIPAA. Designed for individuals, healthcare providers, and insurance companies, this system aims to empower users with knowledge and tools for better health management.

**Future enhancements**  
It include integration with wearable devices for continuous monitoring, deep learning models for advanced analytics, and a mobile application to ensure accessibility and engagement across diverse user bases. The HRMS represents a significant step forward in personalized healthcare and proactive risk management, promoting healthier lifestyles and reducing the burden of preventable diseases.

**Note**

1. Determination of Risk Score: Each individual is assigned a risk score based on specific demographic and health-related factors. Common factors include:
   * Age
   * Gender
   * Medical history
   * Current health conditions
   * Prescription drug usage
2. Risk Transfer Formula: After determining individual risk scores, insurers use a formula to balance premiums among different health plans. This ensures that plans with higher-risk enrollees receive appropriate funding to cover their costs

Parameter