Subject: Data mining & Machine learning
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Healthy Lifestyle Suggester

Problem Statement:

Many people adopt daily habits that unknowingly lead to poor health outcomes such as high stress, lack of sleep, and physical inactivity. There is a need for an intelligent system that can analyze personal lifestyle data and provide practical, personalized suggestions to improve overall well-being.

Objectives

.To develop a machine learning model that analyzes lifestyle indicators and classifies individuals into healthy or unhealthy lifestyle categories.
.To generate tailored lifestyle suggestions (e.g., improve sleep, increase activity, manage stress) based on input data patterns.
.To raise awareness about the impact of lifestyle choices on sleep and health through data-driven insights.

Proposed Methodology

Data Preprocessing

- Handle categorical variables (`Gender`, `Occupation`, `BMI Category`, etc.).
- Normalize numerical data (`Sleep Duration`, `Heart Rate`, `Daily Steps`, etc.).
- Create a new target feature (e.g., `Lifestyle Category`: Healthy / Unhealthy) based on combined conditions (e.g., low sleep + high stress → Unhealthy
- Use **Decision Tree** and **Random Forest** classifiers to classify lifestyle as Healthy or Unhealthy.
- Evaluate with accuracy, precision, and confusion matrix.

Tools

- Python (Pandas, Scikit-learn, Matplotlib, Seaborn)

Dataset Description

The dataset includes 374 records with features like:

- **Demographics**: Age, Gender, Occupation
- **Lifestyle and Health**: Sleep Duration, Physical Activity, Daily Steps, Stress Level, Heart Rate, BMI Category, Blood Pressure
- These provide a complete view of individual wellness.

Expected Outcomes

- A trained ML model that evaluates lifestyle health.
- A system that gives **custom, data-driven health tips** (e.g., sleep more, walk more, reduce stress).
- A simple, user-friendly tool for promoting healthier habits.