Assignment -10

Prescription Drug Effectiveness Analysis

Overview

This project aims to analyze the effectiveness and prescription patterns of various drugs based on patient demographics and health metrics. The dataset, named `drug200.csv`, contains information on 200 patients, including their age, sex, blood pressure, cholesterol levels, sodium to potassium ratio, and the drug prescribed to them.

Dataset Description

The dataset comprises several columns, each representing different attributes related to the patients and the drugs prescribed:

- `Age`: The age of the patient in years.
- `Sex`: The sex of the patient (`F` for female, `M` for male).
- `BP`: The blood pressure level of the patient (`HIGH`, `LOW`, or `NORMAL`).
- `Cholesterol`: The cholesterol level of the patient (`HIGH` or `NORMAL`).
- `Na_to_K`: The sodium to potassium ratio in the patient's blood.
- `Drug`: The name of the drug prescribed to the patient (`DrugY`, `drugC`, `drugX`, and others).

Download Link

Data set link-
https://drive.google.com/file/d/1t8GmVoYkhJpLpy67By20-NY5iBGuA2ph/view?usp=sharing

Objectives

The main objectives of this project are:

To understand the factors influencing the prescription of different drugs.
To analyze the relationship between patient characteristics (age, sex, BP, cholesterol, Na_to_K ratio) and the drug prescribed.
To evaluate the effectiveness of different drugs based on patient recovery or response rates, if such data can be inferred or obtained.

Methodology

The project will be conducted through the following steps:

Try to follow MLDLC Steps :-

Data Preprocessing: Cleaning the data, handling missing values if any, and encoding categorical variables.

Exploratory Data Analysis (EDA): Analyzing the distribution of patient characteristics and prescriptions to identify patterns and trends.

Statistical Analysis: Using statistical tests to understand the significance of relationships between patient characteristics and drug prescriptions.

Predictive Modeling (Optional): If applicable, developing a model to predict the drug prescription based on patient characteristics.

Insight Generation: Drawing insights from the analysis to inform prescription practices.

Expected Deliverables

The project is expected to yield:

- A detailed report with insights into prescription patterns and the influence of patient demographics and health metrics on drug selection.
- Visualizations highlighting key findings from the data.
- Recommendations for healthcare professionals regarding prescription practices.
- (Optional) A predictive model for drug prescription, along with an evaluation of its performance.

Submission Link:-

Link:- https://forms.gle/Fq5ArdchXCd6w6Jb6