

# DATA PRE-PROCESSING

## READING THE DATASET

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### READING THE DATASET :

Firstly we will be loading the dataset from the folders using the pandas library. While reading the dataset we will be dropping the null column. This dataset is a clean dataset with no null values and all the features consist of 0's and 1's. Whenever we are solving a classification task it is necessary to check whether our target column is balanced or not. We will be using a bar plot, to check whether the dataset is balanced or not.

### PYTHON

```
# Reading the train.csv by removing the
# last column since it's an empty column
DATA_PATH = "dataset/Training.csv"
data = pd.read_csv(DATA_PATH).dropna(axis = 1)

# Checking whether the dataset is balanced or not
disease_counts = data["prognosis"].value_counts()
temp_df = pd.DataFrame({
    "Disease": disease_counts.index,
```

```

        "Counts": disease_counts.values
    })

plt.figure(figsize = (18,8))

sns.barplot(x = "Disease", y = "Counts", data = temp_df)

plt.xticks(rotation=90)

plt.show()

```

From the above plot, we can observe that the dataset is a balanced dataset i.e. there are exactly 120 samples for each disease, and no further balancing is required. We can notice that our target column i.e. prognosis column is of object datatype, this format is not suitable to train a machine learning model. So, we will be using a label encoder to convert the prognosis column to the numerical datatype. Label Encoder converts the labels into numerical form by assigning a unique index to the labels. IF the total number of labels is n, then the numbers assigned to each label will be between 0 to n-1.

## **PYTHON :**

```

# Encoding the target value into numerical

# value using LabelEncoder

Encoder = LabelEncoder()

data["prognosis"] = encoder.fit_transform(data["prognosis"])

```