**Password Strength Prediction**

**Business Objective**

A user must create a strong password so that their data is secure from unauthorized users.  
So, using this model, we will predict whether the password strength is strong or average, or weak.

**Data Description**

The dataset has 1 sqlite file,

Data has 3 columns and 10000 rows

The data consists of the following attributes:

* index
* password: User’s password
* strength: Strength of the password

0: Weak password

1: Normal password

2: Strong password

**Aim**

Predict Password Strength using Machine Learning (ML) & Natural Language Processing (NLP) in Python

**Tech stack**

* Language - Python
* Libraries – numpy, pandas, warning, seaborn, matplotlib, sklearn, sqlite3, TfidfVectorizer

**Approach**

1.Understanding the dataset

* Importing the required libraries mentioned above.
* Connected to the sql database.
* Reading the data from sqlite db using query.

2. Data Cleaning

* Drop irrelevant column
* Check null values

3. Data Analysis

* Make analysis of password feature

4. Feature Engineering

* Apply feature engineering on password feature
* Perform Univariate Analysis

5. Data Visualization

* Use boxplot and distribution plot for visualization

6. Model Building

* Apply NLP Algorithm
* Performing train test split
* Apply Logistic Regression

7. Creating the final model and making predictions

8. Model Validation

* Accuracy score
* Confusion matrix
* Classification Report