**PHASE-3**

**FAKE NEWS DETECTION USING NLP**

**Data preprocessing:**

from google.colab import drive

drive.mount("/content/drive")

import pandas as pd

data = pd.read\_csv('/content/drive/MyDrive/creditcard.csv')

missing\_values = data.isnull().sum()

numeric\_columns = data.select\_dtypes(include=['number']).columns

data[numeric\_columns] = data[numeric\_columns].fillna(data[numeric\_columns].mean())

missing\_values\_after = data.isnull().sum()

data.to\_csv('preprocessed\_dataset.csv', index=False)

**Program :**

import pandas as pd

from sklearn.model

\_selection import train\_test\_split

from sklearn.feature\_extraction.text import TfidfVectorizer

from sklearn.naive\_bayes import MultinomialNB

from sklearn.metrics import accuracy\_score, classification\_report, confusion\_matrix

# Load your dataset (fake and real news with corresponding labels)

data = pd.read\_csv("fake\_news\_dataset.csv")

# Data Preprocessing

# Assuming you have a 'text' column in your dataset containing the news content

X = data['text']

y = data['label'] # 1 for fake news, 0 for real news

# Split the dataset into training and testing sets

X\_train, X\_test, y\_train, y\_test = train\_test\_split(X, y, test\_size=0.2, random\_state=42)

# Text Vectorization (TF-IDF)

tfidf\_vectorizer = TfidfVectorizer(max\_df=0.8, max\_features=5000)

X\_train\_tfidf = tfidf\_vectorizer.fit\_transform(X\_train)

X\_test\_tfidf = tfidf\_vectorizer.transform(X\_test)

# NLP Model (Naive Bayes Classifier)

clf = MultinomialNB()

clf.fit(X\_train\_tfidf, y\_train)

# Predictions

y\_pred = clf.predict(X\_test\_tfidf)

# Model Evaluation

accuracy = accuracy\_score(y\_test, y\_pred)

conf\_matrix = confusion\_matrix(y\_test, y\_pred)

report = classification\_report(y\_test, y\_pred)

print("Accuracy:", accuracy)

print("Confusion Matrix:\n", conf\_matrix)

print("Classification Report:\n", report)

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