

FAKE NEWS CLASSIFICATION

EX.NO : 5

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DEVELOP A CLASSIFIER SYSTEM FOR FAKE NEWS DETECTION

AIM:

To write a program to develop a classifier system for detecting fake news articles.

ALGORITHM:

- Step 1: Start
- Step 2: Import necessary libraries.
- Step 3: Load and preprocess news dataset.
- Step 4: Clean articles (lowercase, remove punctuation, stopwords).
- Step 5: Convert text to TF-IDF vectors.
- Step 6: Split into train and test sets.
- Step 7: Train Logistic Regression model.
- Step 8: Evaluate accuracy and classification report.
- Step 9: Test with a custom input article.

PROGRAM:

```
import pandas as pd
import re
import nltk
from sklearn.model_selection import train_test_split
from sklearn.feature_extraction.text import TfidfVectorizer
from sklearn.linear_model import LogisticRegression
from sklearn.metrics import accuracy_score, classification_report

nltk.download('stopwords')
from nltk.corpus import stopwords
stop_words = set(stopwords.words('english'))

def clean_text(text):
    text = re.sub(r"[^A-Za-z\s]", "", text)
    text = text.lower().split()
    text = [word for word in text if word not in stop_words]
    return " ".join(text)

data = {...}
```

```
df = pd.DataFrame(data)
df['cleaned'] = df['text'].apply(clean_text)
df['label'] = df['label'].map({'real': 1, 'fake': 0})

X_train, X_test, y_train, y_test = train_test_split(df['cleaned'], df['label'],
test_size=0.2, random_state=42)

vectorizer = TfidfVectorizer()
X_train_vec = vectorizer.fit_transform(X_train)
X_test_vec = vectorizer.transform(X_test)

clf = LogisticRegression()
clf.fit(X_train_vec, y_train)

y_pred = clf.predict(X_test_vec)

print("Accuracy:", accuracy_score(y_test, y_pred))
print(classification_report(y_test, y_pred))

test_news = "A misleading article spreads false information online."
cleaned_test = clean_text(test_news)
test_vec = vectorizer.transform([cleaned_test])

result = clf.predict(test_vec)
```

OUTPUT:

(Model evaluation output with accuracy and prediction.)

RESULT:

Thus a program to develop a classifier system for fake news detection has been executed successfully.