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Lampiran

1. analisa.py

- Streamlit

```python
import pandas as pd
import numpy as np
import streamlit as st
import matplotlib.pyplot as plt
from sklearn.feature_extraction.text import TfidfVectorizer
from sklearn.cluster import KMeans

# Load dataset
@st.cache
def load_data():
    return pd.read_csv('tweets_01-08-2021.csv')

# Main function
def main():
    st.title("K-Means Clustering of Tweets on Economy and Security")

    # Load data
    data = load_data()
    st.write("Dataset Loaded:")
    st.dataframe(data.head())

    # Define keywords for filtering
    economy_keywords = ['economy', 'jobs', 'growth', 'tax']
    security_keywords = ['security', 'safety', 'crime', 'law']

    # Filter relevant tweets
    data['economy_relevant'] = data['text'].apply(lambda x: any(word in x.lower() for word in economy_keywords))
    data['security_relevant'] = data['text'].apply(lambda x: any(word in x.lower() for word in security_keywords))

    economy_tweets = data[data['economy_relevant']]
    security_tweets = data[data['security_relevant']]
```

```python
# Display pie charts for economy and security tweets
st.subheader("Distribution of Relevant Tweets")
labels = ['Ec
sizes = [len(economy_tweets), len(security_tweets)]
colors = ['#ff9999','#66b3ff']

plt.figure(figsize=(8, 6))
plt.pie(sizes, labels=labels, colors=colors, autopct='%1.1f%%', startangle=140)
plt.axis('equal')  # Equal aspect ratio ensures that pie is drawn as a circle.
st.pyplot(plt)

if economy_tweets.empty and security_tweets.empty:
    st.write("No relevant tweets found.")
    return

# Preprocess data for economy tweets
if not economy_tweets.empty:
    vectorizer_economy = TfidfVectorizer(stop_words='english')
    X_economy = vectorizer_economy.fit_transform(economy_tweets['text'])

    # K-Means parameters for economy
    k_economy = st.slider("Select number of clusters for Economy (K):", 1, 10, 3)
    kmeans_economy = KMeans(n_clusters=k_economy, random_state=0)
    kmeans_economy.fit(X_economy)

    # Assign clusters
    economy_tweets['cluster'] = kmeans_economy.labels_

    # Show cluster distribution for economy
    st.subheader("Economy Cluster Distribution")
    st.write(economy_tweets['cluster'].value_counts())

    # Visualize economy clusters
    plt.figure(figsize=(10, 6))
    plt.scatter(economy_tweets['cluster'], economy_tweets['favorites'], alpha=0.5)
    plt.title("Economy Cluster Visualization based on Favorites")
    plt.xlabel("Cluster")
    plt.ylabel("Number of Favorites")
    st.pyplot(plt)

    # Display tweets in each economy cluster
    for i in range(k_economy):
        st.subheader(f"Economy Tweets in Cluster {i}")
        cluster_tweets_economy = economy_tweets[economy_tweets['cluster'] == i]
        st.write(cluster_tweets_economy[['text', 'favorites', 'date']])

# Preprocess data for security tweets
if not security_tweets.empty:
    vectorizer_security = TfidfVectorizer(stop_words='english')
    X_security = vectorizer_security.fit_transform(security_tweets['text'])

    # K-Means parameters for security
    k_security = st.slider("Select number of clusters for Security (K):", 1, 10, 3)
    kmeans_security = KMeans(n_clusters=k_security, random_state=0)
    kmeans_security.fit(X_security)

    # Assign clusters
    security_tweets['cluster'] = kmeans_security.labels_

    # Show cluster distribution for security
```

(variable) economy_tweets: DataFrame

(variable) economy_tweets: DataFrame

```
        # Assign clusters
        security_tweets['cluster'] = kmeans_security.labels_

        # Show cluster distribution for security
        st.subheader("Security Cluster Distribution")
        st.write(security_tweets['cluster'].value_counts())

        # Visualize security clusters
        plt.figure(figsize=(10, 6))
        plt.scatter(security_tweets['cluster'], security_tweets['favorites'], alpha=0.5)
        plt.title("Security Cluster Visualization based on Favorites")
        plt.xlabel("Cluster")
        plt.ylabel("Number of Favorites")
        st.pyplot(plt)

        # Display tweets in each security cluster
        for i in range(k_security):
            st.subheader(f"Security Tweets in Cluster {i}")
            cluster_tweets_security = security_tweets[security_tweets['cluster'] == i]
            st.write(cluster_tweets_security[['text', 'favorites', 'date']])

if __name__ == "__main__":
    main()
```

- Analisis.py

```
import pandas as pd
import numpy as np
import streamlit as st
import matplotlib.pyplot as plt
from sklearn.feature_extraction.text import TfidfVectorizer
from sklearn.cluster import KMeans
from sklearn.metrics import f1_score
import nltk
from wordcloud import WordCloud
from textblob import TextBlob

# Unduh stopwords NLTK (jalankan sekali)
nltk.download('stopwords')

# Judul Aplikasi
st.title("Analisis Tweet Donald Trump")

# 1. Memuat data
data = pd.read_csv('Dataset_new_real donaldtrump_insult_tweets_2014_to_2021.csv')
tweets = data['tweet'].astype(str)

# 2. Preprocessing teks
def preprocess_text(text):
    text = text.lower()
    text = ''.join(char for char in text if char.isalpha() or char.isspace())
    return text

# Terapkan preprocessing
tweets = tweets.apply(preprocess_text)

# 3. Ekstraksi fitur menggunakan TF-IDF
from nltk.corpus import stopwords
```

```python
from nltk.corpus import stopwords
vectorizer = TfidfVectorizer(stop_words=stopwords.words('indonesian'))
X = vectorizer.fit_transform(tweets)

# 4. K-Means Clustering
num_clusters = 5
kmeans = KMeans(n_clusters=num_clusters, random_state=42)
kmeans.fit(X)

# 5. Menambahkan hasil cl
data['cluster'] = kmeans.labels_

# 6. Menambahkan kolom tahun
data['date'] = pd.to_datetime(data['date'])
data['year'] = data['date'].dt.year

# 7. Analisis Sentimen
def get_sentiment(text):
    analysis = TextBlob(text)
    if analysis.sentiment.polarity > 0:
        return 'Positif'
    elif analysis.sentiment.polarity < 0:
        return 'Negatif'
    else:
        return 'Netral'

data['sentiment'] = data['tweet'].apply(get_sentiment)

# 8. Visualisasi

# a. Jumlah Tweet per Cluster
st.subheader('Jumlah Tweet per Cluster')
```

(variable) labels_: ndarray

```python
# a. Jumlah Tweet per Cluster
st.subheader('Jumlah Tweet per Cluster')
fig1, ax1 = plt.subplots()
data['cluster'].value_counts().plot(kind='bar', color='skyblue', ax=ax1)
ax1.set_title('Jumlah Tweet per Cluster')
ax1.set_xlabel('Cluster')
ax1.set_ylabel('Jumlah Tweet')
st.pyplot(fig1)

# b. Kata Paling Umum per Cluster
for i in range(num_clusters):
    cluster_tweets = data[data['cluster'] == i]['tweet']
    text = ' '.join(cluster_tweets)
    wordcloud = WordCloud(width=800, height=400, background_color='white').generate(text)

    st.subheader(f'Word Cloud untuk Cluster {i}')
    plt.figure(figsize=(10, 6))
    plt.imshow(wordcloud, interpolation='bilinear')
    plt.axis('off')
    st.pyplot()

# c. Grafik Distribusi Panjang Tweet per Cluster
data['tweet_length'] = data['tweet'].apply(len)

st.subheader('Rata-rata Panjang Tweet per Cluster')
fig2, ax2 = plt.subplots()
data.groupby('cluster')['tweet_length'].mean().plot(kind='bar', color='lightcoral', ax=ax2)
ax2.set_title('Rata-rata Panjang Tweet per Cluster')
ax2.set_xlabel('Cluster')
ax2.set_ylabel('Rata-rata Panjang Tweet')
st.pyplot(fig2)
```

```python
# d. Diagram Lingkaran Jumlah Tweet per Cluster
st.subheader('Distribusi Tweet per Cluster')
fig3, ax3 = plt.subplots()
data['cluster'].value_counts().plot(kind='pie', autopct='%1.1f%%', startangle=90, colors=plt.cm.Paired.colors, ax=ax3)
ax3.set_title('Distribusi Tweet per Cluster')
ax3.set_ylabel('')
st.pyplot(fig3)

# e. Jumlah Tweet per Tahun
st.subheader('Jumlah Tweet per Tahun')
fig4, ax4 = plt.subplots()
data['year'].value_counts().sort_index().plot(kind='bar', color='lightgreen', ax=ax4)
ax4.set_title('Jumlah Tweet per Tahun')
ax4.set_xlabel('Tahun')
ax4.set_ylabel('Jumlah Tweet')
st.pyplot(fig4)

# f. Distribusi Sentimen
st.subheader('Distribusi Sentimen Tweet')
sentiment_counts = data['sentiment'].value_counts()

fig5, ax5 = plt.subplots()
sentiment_counts.plot(kind='bar', color=['lightblue', 'lightcoral', 'lightgreen'], ax=ax5)
ax5.set_title('Distribusi Sentimen Tweet')
ax5.set_xlabel('Sentimen')
ax5.set_ylabel('Jumlah Tweet')
ax5.set_xticklabels(sentiment_counts.index, rotation=0)
st.pyplot(fig5)

# g. Memisahkan Sentimen
st.subheader('Tweet Positif, Negatif, dan Netral')
```

```python
# Menghitung jumlah tweet berdasarkan sentimen
positive_tweets = data[data['sentiment'] == 'Positif']
negative_tweets = data[data['sentiment'] == 'Negatif']
neutral_tweets = data[data['sentiment'] == 'Netral']

st.write(f"Jumlah Tweet Positif: {len(positive_tweets)}")
st.write(f"Jumlah Tweet Negatif: {len(negative_tweets)}")
st.write(f"Jumlah Tweet Netral: {len(neutral_tweets)}")

# Menampilkan beberapa contoh tweet
st.write("Contoh Tweet Positif:")
st.write(positive_tweets['tweet'].sample(5).values)

st.write("Contoh Tweet Negatif:")
st.write(negative_tweets['tweet'].sample(5).values)

st.write("Contoh Tweet Netral:")
st.write(neutral_tweets['tweet'].sample(5).values)

# h. Menghitung F1 Score
if 'true_sentiment' in data.columns:  # Pastikan kolom ini ada
    # Mencetak F1 Score
    f1 = f1_score(data['true_sentiment'], data['sentiment'], average='weighted')
    st.write(f"F1 Score: {f1:.2f}")
else:
    st.write("Kolom 'true_sentiment' tidak ditemukan dalam dataset. F1 Score tidak dapat dihitung.")
```

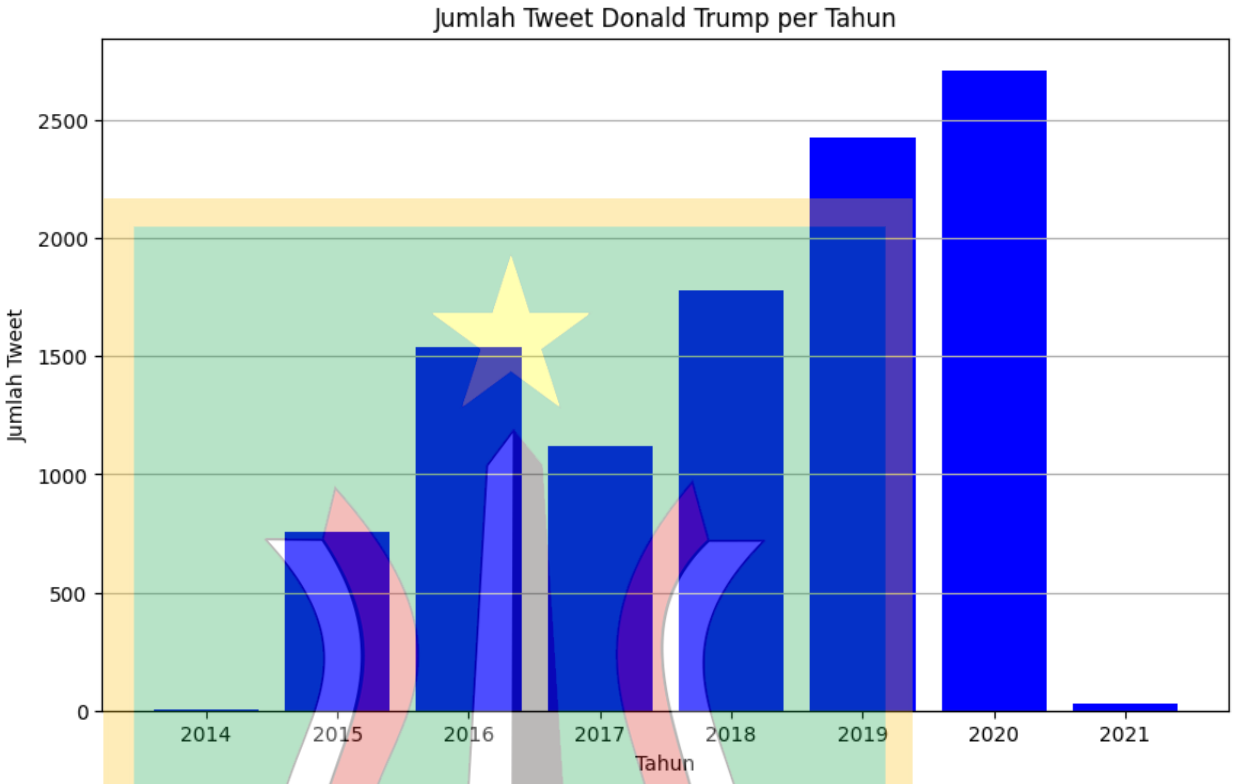
- Model

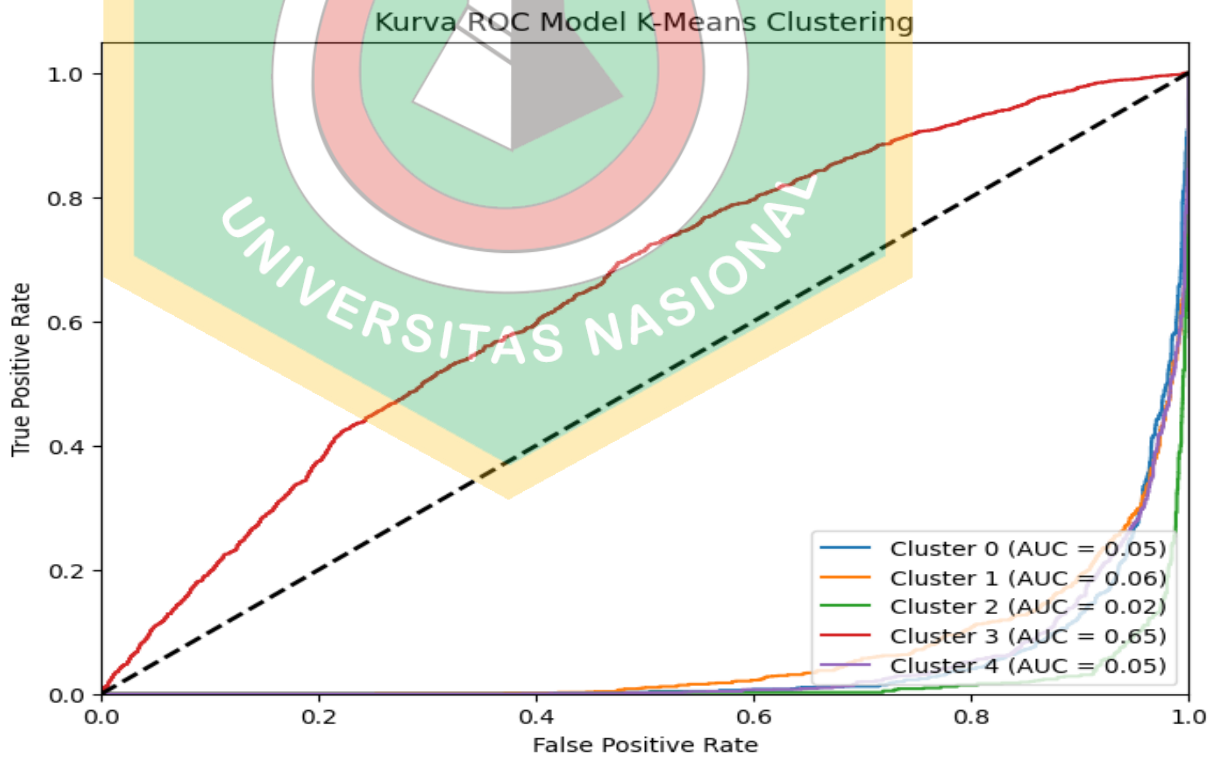
Evaluasi Model

PENGUJIAN MODEL

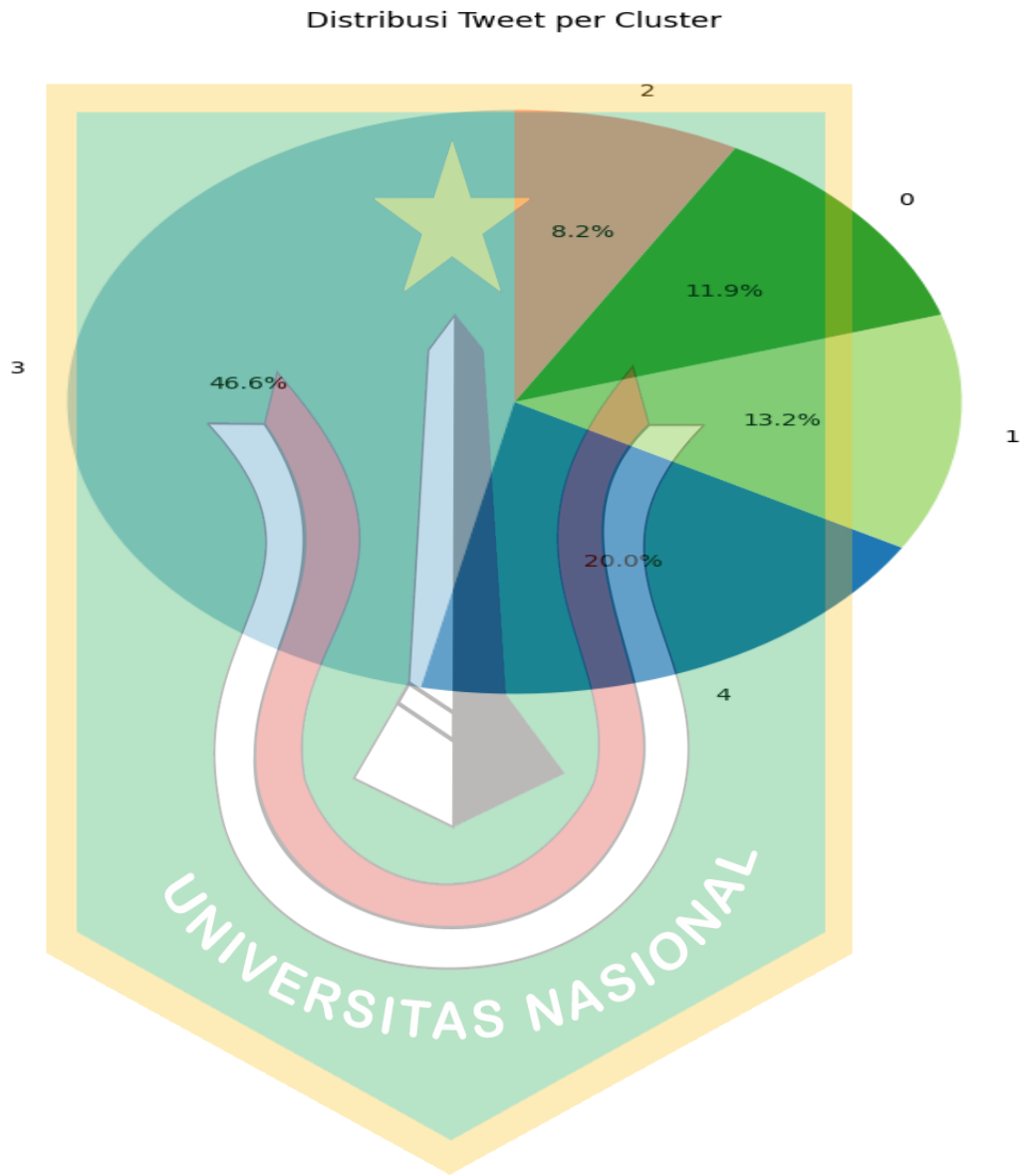
```
# Impor yang diperlukan
from sklearn.metrics import classification_report

# Hitung evaluasi model
report = classification_report(data['cluster'], kmeans.labels_)

# Tampilkan hasil
print(report)
```

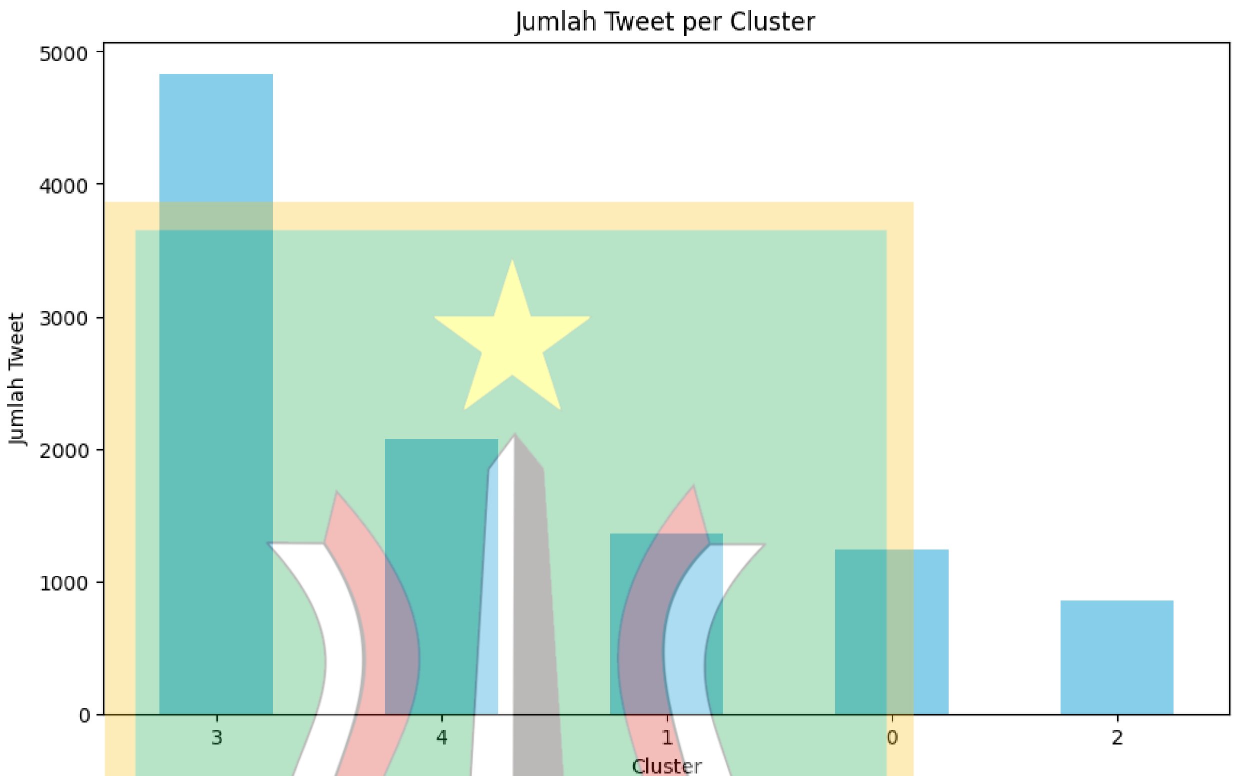
```
              precision    recall  f1-score   support

           0       1.00      1.00      1.00      1238
           1       1.00      1.00      1.00      1363
           2       1.00      1.00      1.00       851
           3       1.00      1.00      1.00      4832
           4       1.00      1.00      1.00      2076

    accuracy                           1.00     10360
   macro avg       1.00      1.00      1.00     10360
weighted avg       1.00      1.00      1.00     10360
```

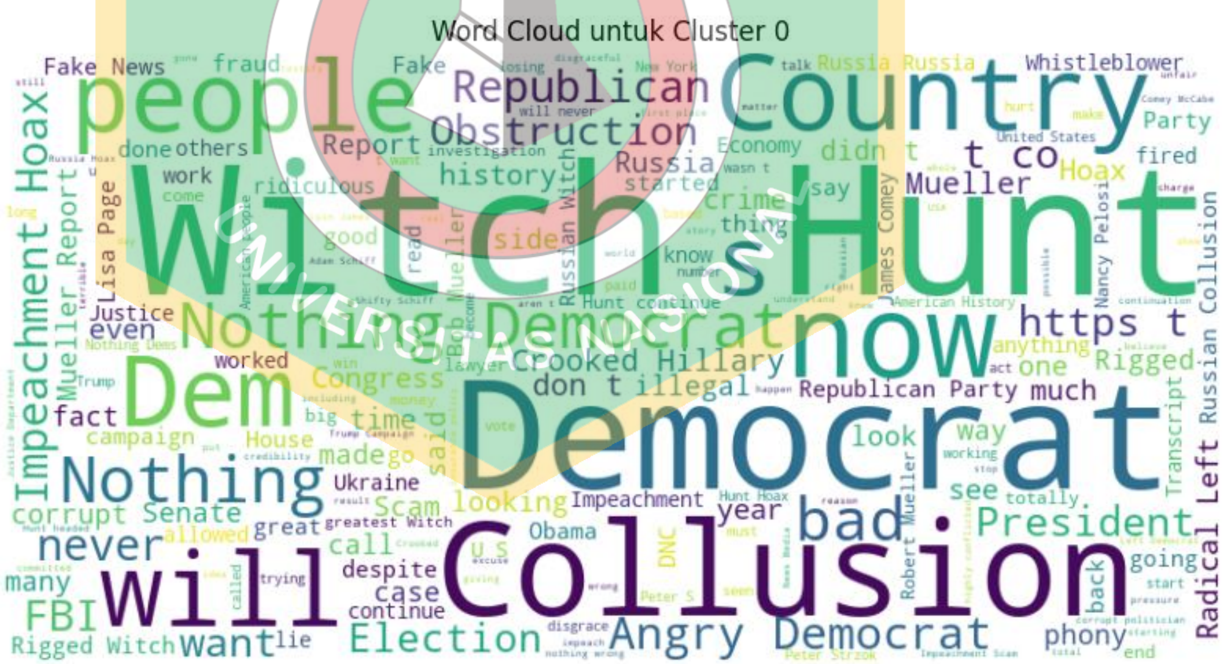




- Visualisasi Data







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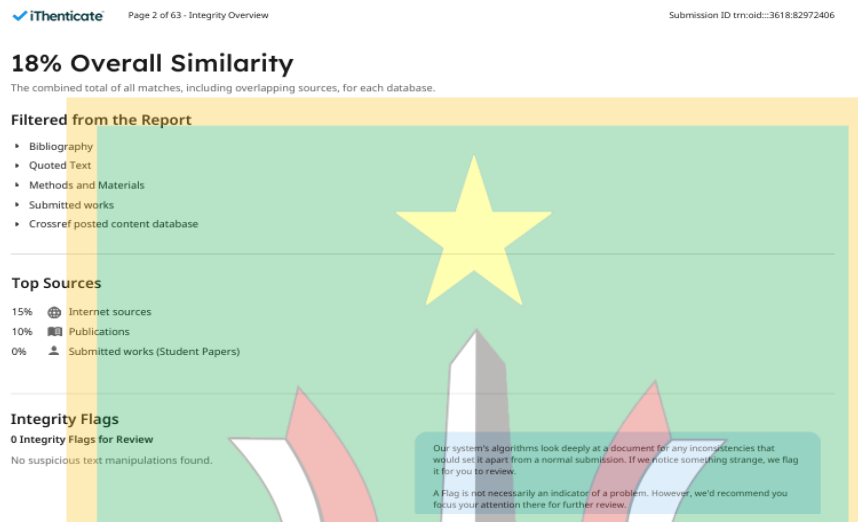

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