

Tugas 1: Judul tugas – Analisis Regresi Linear

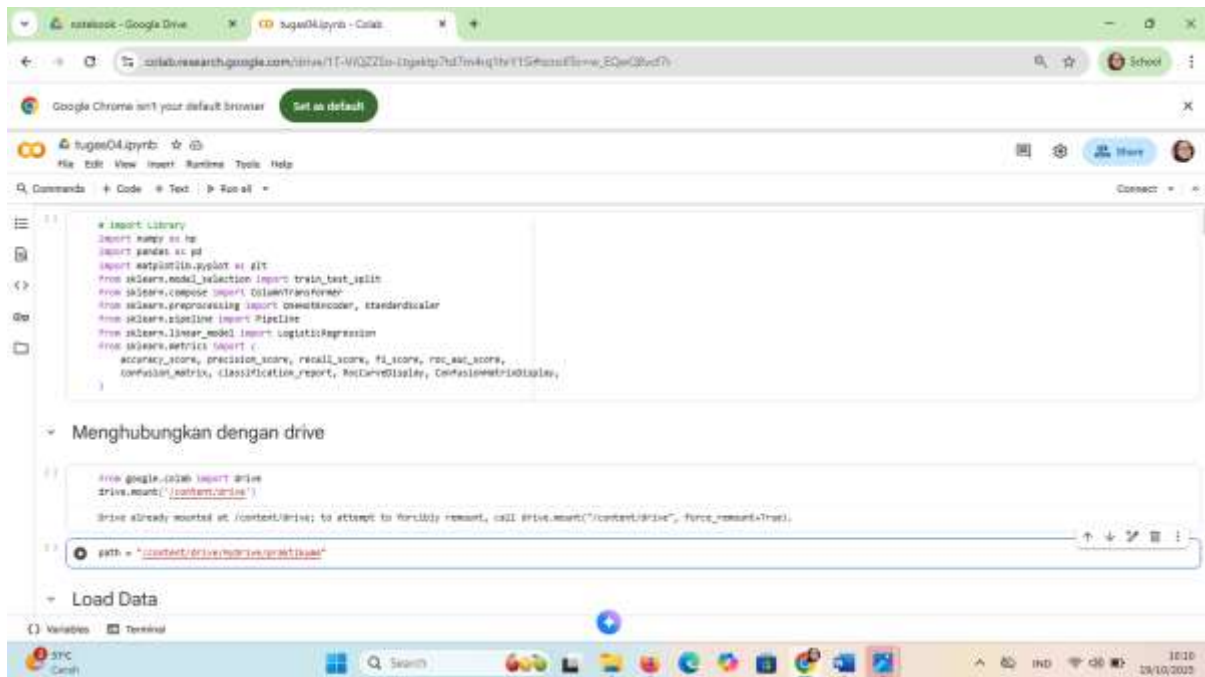
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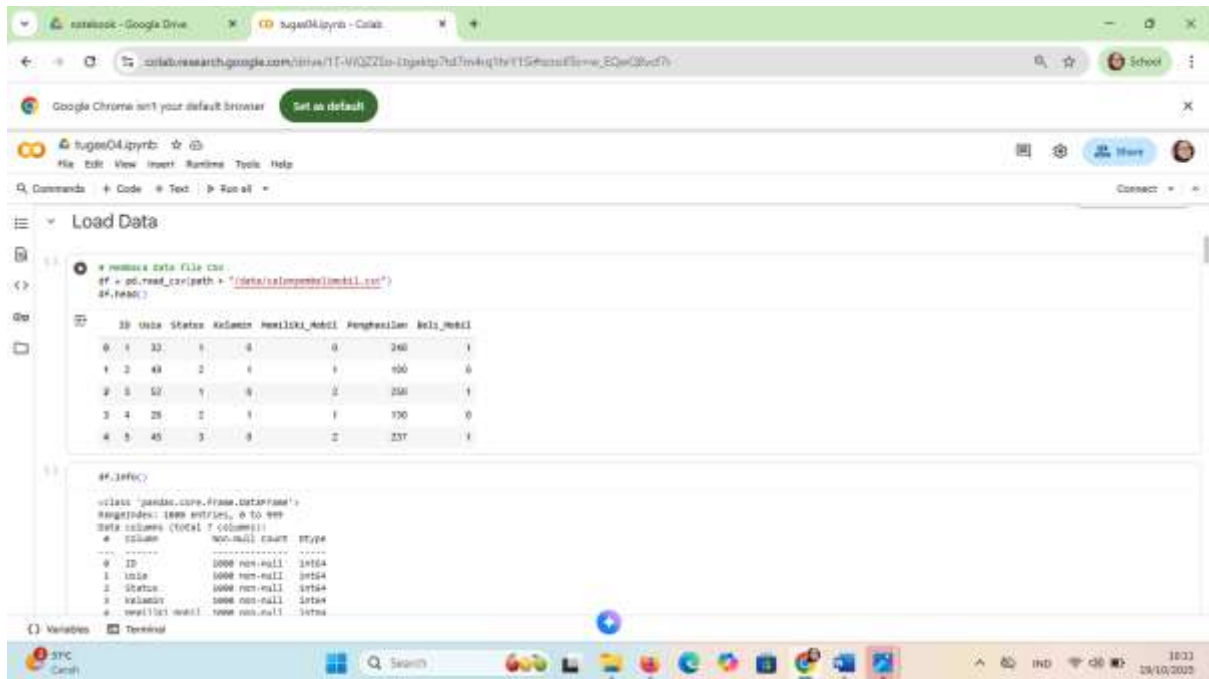
Abstract. Pembelajaran *Machine Learning* merupakan cabang dari kecerdasan buatan (*Artificial Intelligence*) yang berfokus pada pengembangan algoritma dan model statistik untuk memungkinkan sistem komputer belajar dari data dan membuat prediksi atau keputusan secara otomatis tanpa pemrograman eksplisit..

1. Praktikum mandiri



1.1 .menghubungkan dengan drive

2. Membaca dataset



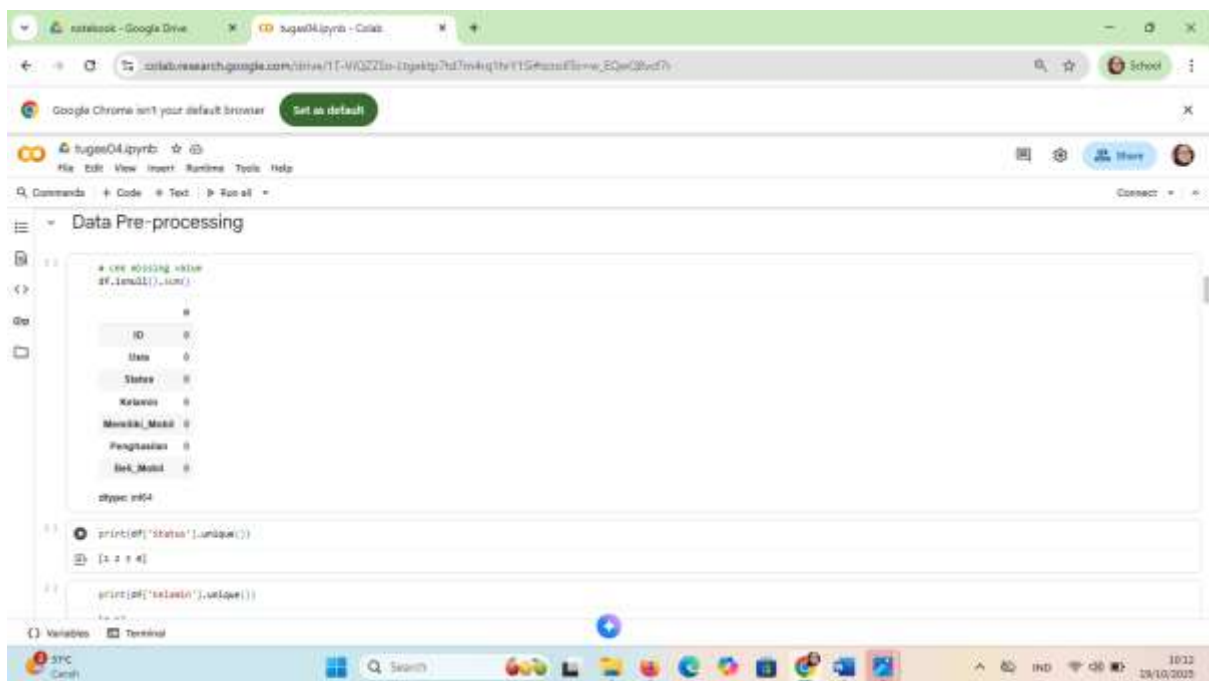
```
# membaca data file csv
df = pd.read_csv(path + "/data/salampembelian.csv")
df.head()
```

	ID	Usia	Status	Kelamin	Memiliki_Mobil	Penghasilan	Beli_Mobil
0	1	32	1	0	0	240	1
1	2	43	2	1	1	400	0
2	3	52	1	0	2	250	1
3	4	28	2	1	1	150	0
4	5	45	3	0	2	237	1

```
# info
<class 'pandas.core.frame.DataFrame'>
Int64Index: 1000 entries, 0 to 999
Data columns (total 7 columns):
 #   Column      Non-Null Count  Dtype
---  --
 0   ID          1000 non-null   int64
 1   Usia        1000 non-null   int64
 2   Status      1000 non-null   int64
 3   Kelamin     1000 non-null   int64
 4   Memiliki_Mobil 1000 non-null   int64
```

1.2 Hasil membaca file csv & df info

3. mengecek cek missing value



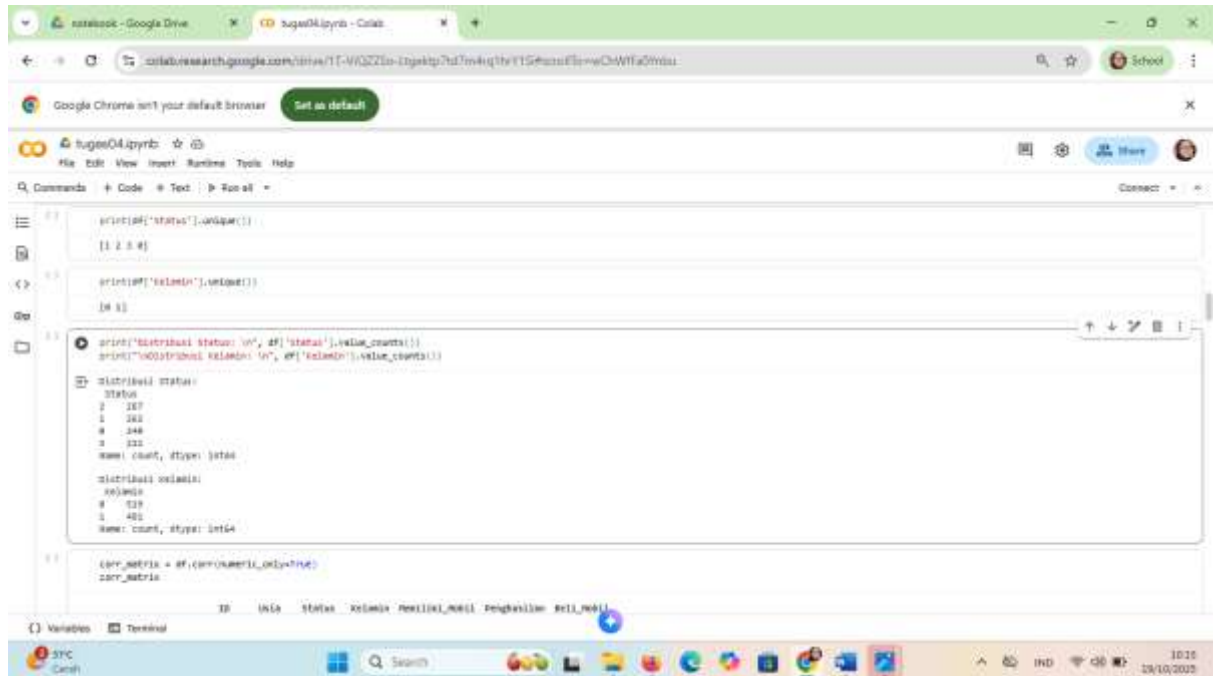
```
# cek missing value
df.isnull().sum()
```

```
# print('Status',unique())
[1 2 3 4]
```

```
# print('kelamin',unique())
```

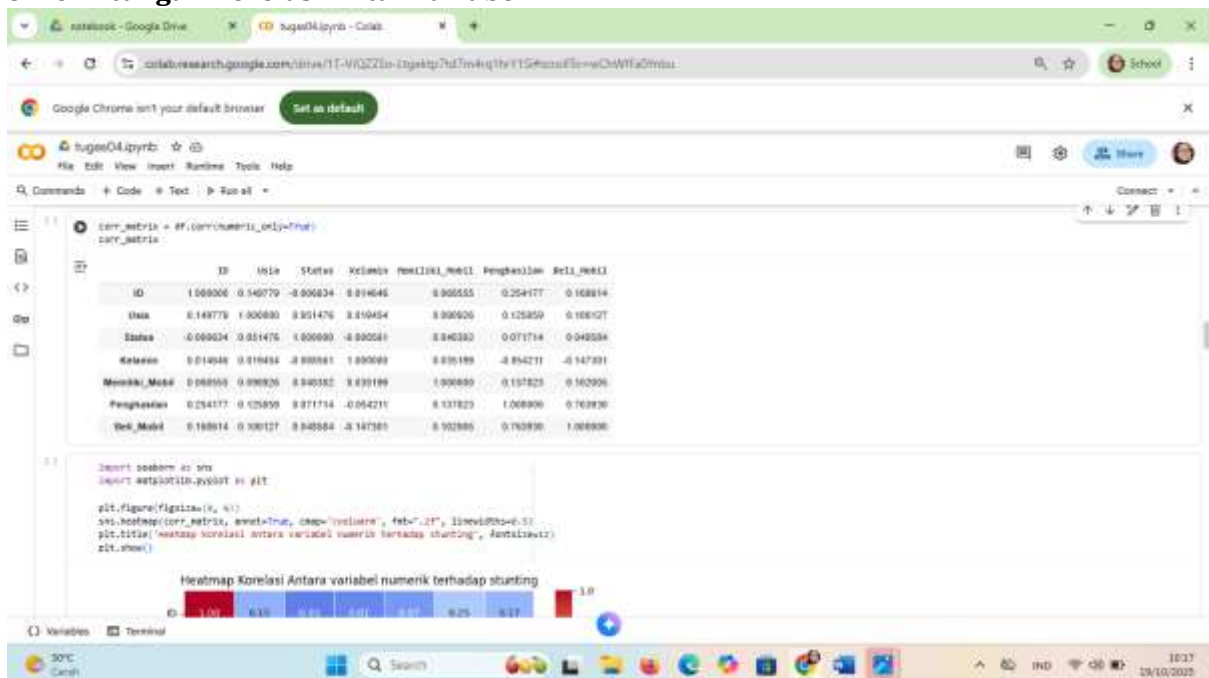
1.3 hasil dari mengecek missing valu

4. Menampilkan Distribusi Data



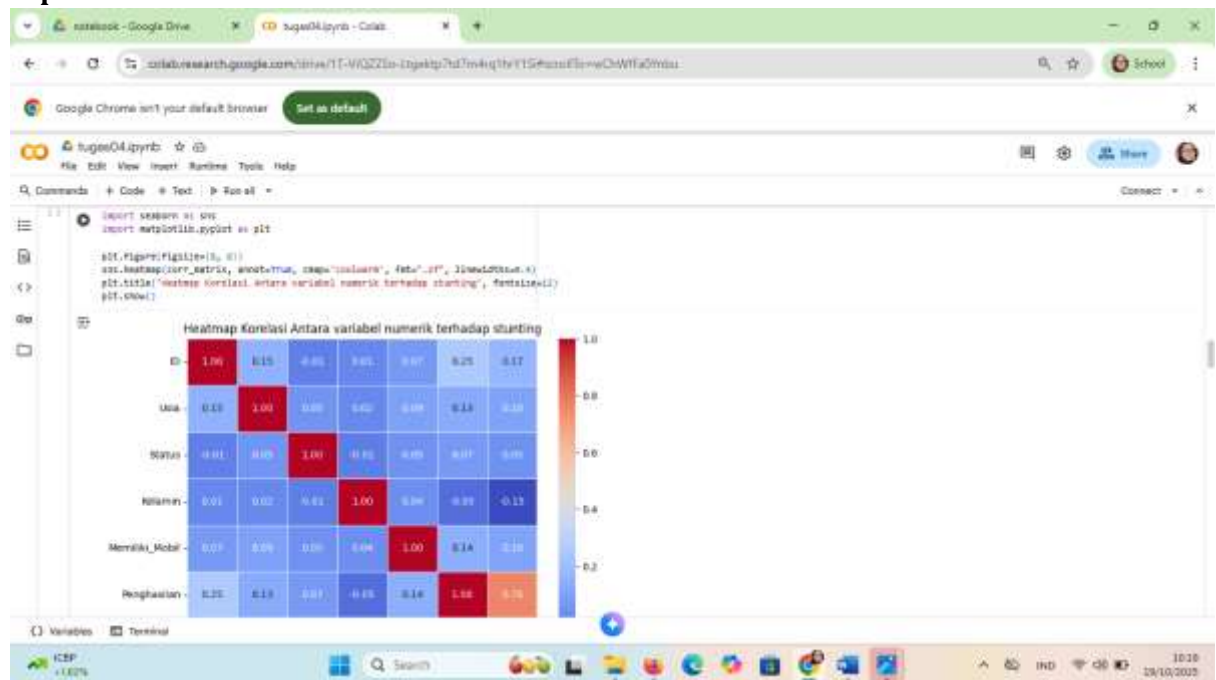
1.4 hasil dari . Menampilkan Distribusi Data

5. Perhitungan Korelasi Antar Variabel



1.5 . hasil dari Perhitungan Korelasi Antar Variabel

6. proses visualisasi korelasi antar variabel numerik



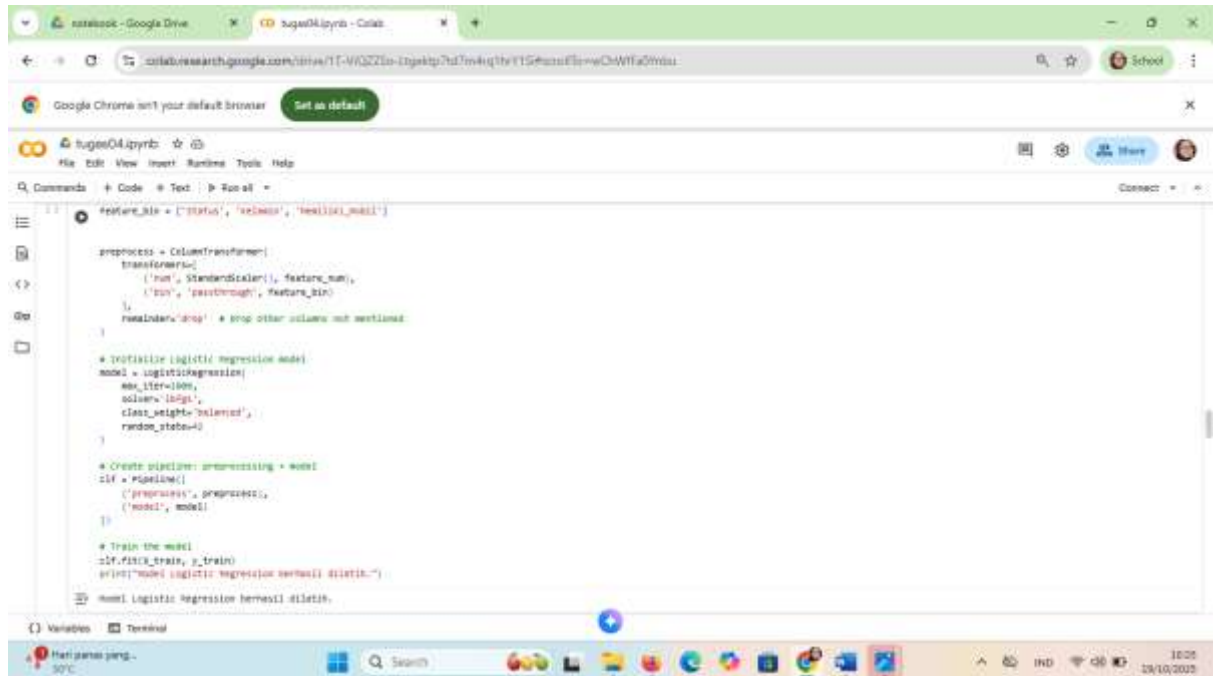
1.6 hasil dari proses visualisasi korelasi antar variabel numerik

7. persiapan data

```
1 feature_cols = ['usia', 'status', 'relasiin', 'Memiliki_mobil', 'Penghasilan']
2 target_col = 'Reli_mobil'
3
4 x = df[feature_cols]
5 y = df[target_col]
6
7 print("x shape:", x.shape)
8 print("y shape:", y.shape)
9
10 x_train, x_test, y_train, y_test = train_test_split(
11     x, y,
12     test_size=0.1,
13     random_state=0,
14     stratify=y
15 )
16
17 print("data latih:", x_train.shape)
18 print("data uji:", x_test.shape)
19
20 data latih: (180, 5)
21 data uji: (20, 5)
22
23 from sklearn.compose import ColumnTransformer
24 from sklearn.preprocessing import StandardScaler
25 from sklearn.linear_model import LogisticRegression
26 from sklearn.pipeline import Pipeline
```

1.7 hasil dari persiapan data

8. Train the model



The screenshot shows a Jupyter Notebook interface with the following code:

```
features_kita = ['status', 'religion', 'residence_model']

preprocess = ColumnTransformer(
    transformers=[
        ('num', StandardScaler(), features_num),
        ('cat', 'passthrough', features_kita)
    ],
    remainder='drop' # drop other columns not mentioned
)

# initialize logistic regression model
model = LogisticRegression(
    max_iter=1000,
    solver='lbfgs',
    class_weight='balanced',
    random_state=0
)

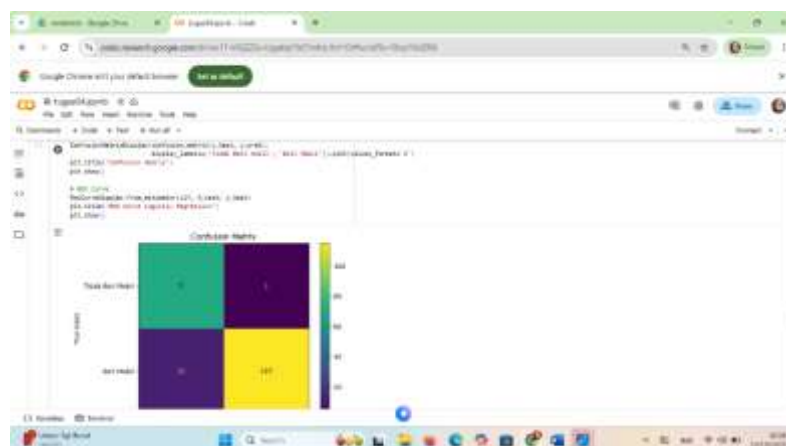
# Create pipeline: preprocessing + model
clf = Pipeline([
    ('preprocess', preprocess),
    ('model', model)
])

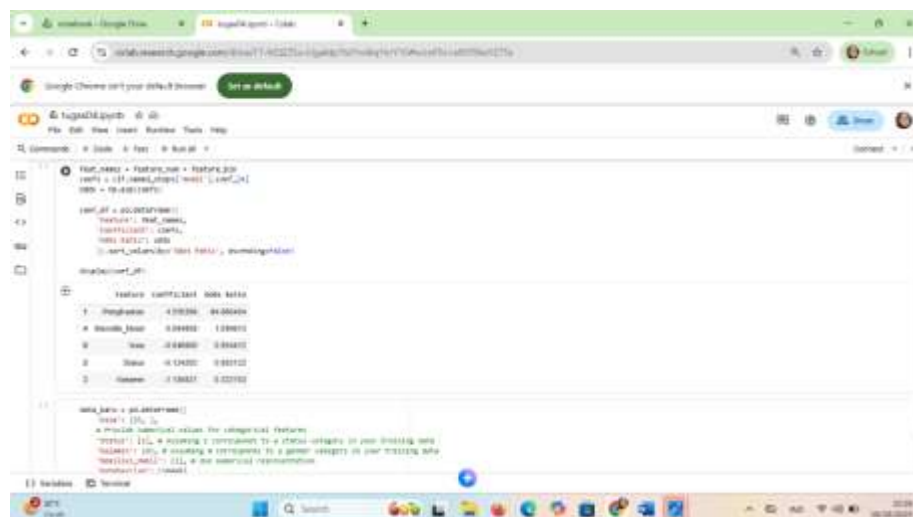
# Train the model
clf.fit(X_train, y_train)
print("Model Logistic Regression berhasil dilatih.")

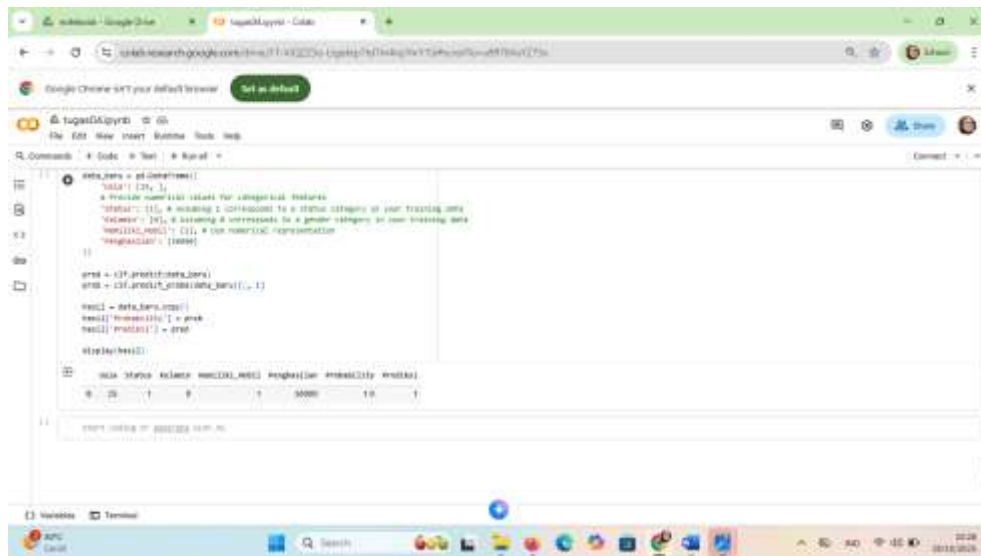
# Model Logistic Regression berhasil dilatih.
```

1.8 hasil dari Train the model

9. ConfusionMatrix







Referensi:

- Munir, S., Seminar, K. B., Sudradjat, Sukoco, H., & Buono, A. (2022). The Use of Random Forest Regression for Estimating Leaf Nitrogen Content of Oil Palm Based on Sentinel 1-A Imagery. *Information*, 14(1), 10. <https://doi.org/10.3390/info14010010>
- Seminar, K. B., Imantho, H., Sudradjat, Yahya, S., Munir, S., Kaliana, I., Mei Haryadi, F., Noor Baroroh, A., Supriyanto, Handoyo, G. C., Kurnia Wijayanto, A., Ijang Wahyudin, C., Liyantono, Budiman, R., Bakir Pasaman, A., Rusiawan, D., & Sulastri. (2024). PreciPalm: An Intelligent System for Calculating Macronutrient Status and Fertilizer Recommendations for Oil Palm on Mineral Soils Based on a Precision Agriculture Approach. *Scientific World Journal*, 2024(1). <https://doi.org/10.1155/2024/1788726>

LINK GITHUB: <https://github.com/Sitiaisah1604/machine-learning>