```
from google.colab import drive
drive.mount('/content/drive')
```

```
    Mounted at /content/drive
```

```
import numpy as np
import pandas as pd
import matplotlib.pyplot as pyt
```

```
df=pd.read_csv("/content/drive/MyDrive/zoo.csv")
df.head()
```

	animal_name	hair	feathers	eggs	milk	airborne	aquatic	predator	toothed	bacl
0	aardvark	1	0	0	1	0	0	1	1	
1	antelope	1	0	0	1	0	0	0	1	
2	bass	0	0	1	0	0	1	1	1	
3	bear	1	0	0	1	0	0	1	1	
4	boar	1	0	0	1	0	0	1	1	

```
class_type_output=df["class_type"]
df=df.drop("class_type", axis=1).drop("animal_name",axis=1)
df.head()
```

	hair	feathers	eggs	milk	airborne	aquatic	predator	toothed	backbone	breathes	venomous	fins	legs	tail	domestic
0	1	0	0	1	0	0	1	1	1	1	0	0	4	0	0
1	1	0	0	1	0	0	0	1	1	1	0	0	4	1	0
2	0	0	1	0	0	1	1	1	1	0	0	1	0	1	0
3	1	0	0	1	0	0	1	1	1	1	0	0	4	0	0
4	1	0	0	1	0	0	1	1	1	1	0	0	4	1	0

```
from sklearn.model_selection import train_test_split
x_test,x_train,y_test,y_train=train_test_split(df,class_type_output,test_size=0.2)
```

```
from sklearn.tree import DecisionTreeClassifier
classifier=DecisionTreeClassifier()
classifier.fit(x_train,y_train)
```

```
    DecisionTreeClassifier()
```

```
y_prediction=classifier.predict(x_test)
y_prediction
```

```
    array([2, 7, 2, 7, 2, 1, 1, 1, 1, 1, 1, 2, 4, 7, 4, 1, 1, 4, 2, 2, 2, 2,
           1, 6, 4, 1, 1, 4, 7, 6, 2, 4, 7, 6, 1, 1, 1, 1, 2, 7, 2, 1, 6, 1,
           2, 2, 1, 4, 1, 7, 2, 1, 2, 7, 4, 4, 4, 1, 1, 1, 4, 4, 1, 2, 2, 1,
           6, 1, 1, 4, 2, 4, 4, 4, 2, 7, 2, 4, 1, 1])
```

```
from sklearn.metrics import classification_report,confusion_matrix,accuracy_score
confusion_matrix(y_test,y_prediction)
print(classification_report(y_test,y_prediction))
print(accuracy_score(y_test,y_prediction))
```

```
prediction_class=list(y_prediction)
actual_class=list(y_test)
```

```
for i in range(len(prediction_class)):
  print("pridicted class=",prediction_class[i],"actual class=",actual_class[i])
```

```
                precision    recall  f1-score   support

           1       0.93      0.96      0.95        28
           2       0.90      1.00      0.95        18
           3       0.00      0.00      0.00         5
           4       0.59      1.00      0.74        10
           5       0.00      0.00      0.00         4
           6       1.00      0.71      0.83         7
           7       0.78      0.88      0.82         8

    accuracy                           0.84        80
```

```
    macro avg       0.60      0.65      0.61        80
 weighted avg       0.77      0.84      0.79        80

0.8375
pridicted class= 2 actual class= 2
pridicted class= 7 actual class= 7
pridicted class= 2 actual class= 2
pridicted class= 7 actual class= 6
pridicted class= 2 actual class= 2
pridicted class= 1 actual class= 1
pridicted class= 1 actual class= 1
pridicted class= 1 actual class= 1
pridicted class= 1 actual class= 3
pridicted class= 1 actual class= 1
pridicted class= 1 actual class= 1
pridicted class= 2 actual class= 2
pridicted class= 4 actual class= 3
pridicted class= 7 actual class= 6
pridicted class= 4 actual class= 5
pridicted class= 1 actual class= 1
pridicted class= 1 actual class= 1
pridicted class= 4 actual class= 5
pridicted class= 2 actual class= 1
pridicted class= 2 actual class= 2
pridicted class= 2 actual class= 2
pridicted class= 2 actual class= 2
pridicted class= 1 actual class= 1
pridicted class= 6 actual class= 6
pridicted class= 4 actual class= 4
pridicted class= 1 actual class= 1
pridicted class= 1 actual class= 1
pridicted class= 4 actual class= 4
pridicted class= 7 actual class= 7
pridicted class= 6 actual class= 6
pridicted class= 2 actual class= 2
pridicted class= 4 actual class= 4
pridicted class= 7 actual class= 7
pridicted class= 6 actual class= 6
pridicted class= 1 actual class= 1
pridicted class= 1 actual class= 1
pridicted class= 1 actual class= 1
pridicted class= 1 actual class= 1
pridicted class= 2 actual class= 2
pridicted class= 7 actual class= 7
```

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