```python
from google.colab import files
upload=files.upload()
```

Choose Files Zoo.csv
• **Zoo.csv**(text/csv) - 4600 bytes, last modified: 2/28/2023 - 100% done
Saving Zoo.csv to Zoo.csv

```python
import pandas as pd
import numpy as np
```

```python
df=pd.read_csv("Zoo.csv")
df.head()
```

	animal name	hair	feathers	eggs	milk	airborne	aquatic	predator	toothed	backb
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	

```python
df.dtypes
df["animal name"].unique()
```

```
array(['aardvark', 'antelope', 'bass', 'bear', 'boar', 'buffalo', 'calf',
       'carp', 'catfish', 'cavy', 'cheetah', 'chicken', 'chub', 'clam',
       'crab', 'crayfish', 'crow', 'deer', 'dogfish', 'dolphin', 'dove',
       'duck', 'elephant', 'flamingo', 'flea', 'frog', 'fruitbat',
       'giraffe', 'girl', 'gnat', 'goat', 'gorilla', 'gull', 'haddock',
       'hamster', 'hare', 'hawk', 'herring', 'honeybee', 'housefly',
       'kiwi', 'ladybird', 'lark', 'leopard', 'lion', 'lobster', 'lynx',
       'mink', 'mole', 'mongoose', 'moth', 'newt', 'octopus', 'opossum',
       'oryx', 'ostrich', 'parakeet', 'penguin', 'pheasant', 'pike',
       'piranha', 'pitviper', 'platypus', 'polecat', 'pony', 'porpoise',
       'puma', 'pussycat', 'raccoon', 'reindeer', 'rhea', 'scorpion',
       'seahorse', 'seal', 'sealion', 'seasnake', 'seawasp', 'skimmer',
       'skua', 'slowworm', 'slug', 'sole', 'sparrow', 'squirrel',
       'starfish', 'stingray', 'swan', 'termite', 'toad', 'tortoise',
       'tuatara', 'tuna', 'vampire', 'vole', 'vulture', 'wallaby', 'wasp',
       'wolf', 'worm', 'wren'], dtype=object)
```

```python
df.info()
```

```
<class 'pandas.core.frame.DataFrame'>
RangeIndex: 101 entries, 0 to 100
Data columns (total 18 columns):
 #   Column       Non-Null Count  Dtype
---  ------       --------------  -----
 0   animal name  101 non-null    object
 1   hair         101 non-null    int64
 2   feathers     101 non-null    int64
 3   eggs         101 non-null    int64
 4   milk         101 non-null    int64
 5   airborne     101 non-null    int64
 6   aquatic      101 non-null    int64
 7   predator     101 non-null    int64
 8   toothed      101 non-null    int64
 9   backbone     101 non-null    int64
 10  breathes     101 non-null    int64
 11  venomous     101 non-null    int64
 12  fins         101 non-null    int64
 13  legs         101 non-null    int64
 14  tail         101 non-null    int64
 15  domestic     101 non-null    int64
 16  catsize      101 non-null    int64
 17  type         101 non-null    int64
dtypes: int64(17), object(1)
memory usage: 14.3+ KB
```

```python
x=df.iloc[:,1:14]
y=df["type"]
```

```
from sklearn.preprocessing import MinMaxScaler
MM=MinMaxScaler()
X_MM=MM.fit_transform(x)
X=pd.DataFrame(X_MM)


from sklearn.model_selection import train_test_split
X_train,X_test,Y_train,Y_test=train_test_split(X,y,test_size=0.4)



from sklearn.neighbors import KNeighborsClassifier
KNC=KNeighborsClassifier(n_neighbors=11,p=2)
KNC.fit(X_train,Y_train)
Y_pred_train=KNC.predict(X_train)
Y_Pred_test=KNC.predict(X_test)
from sklearn.metrics import accuracy_score
training_accuracy=accuracy_score(Y_train,Y_pred_train)
test_accuracy=accuracy_score(Y_test,Y_Pred_test)
print("training_accuracy is" , training_accuracy.round(2))
print("test_accuracy_score is" , test_accuracy.round(2))
```

```
training_accuracy is 0.83
test_accuracy_score is 0.83
```

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