

data cleaning

#loading of dataset

```
import pandas as pd
# Load the dataset
df = pd.read_csv("IRIS.csv") # Adjust filename if different
df.head()
```

	sepal_length	sepal_width	petal_length	petal_width	species
0	5.1	3.5	1.4	0.2	Iris-setosa
1	4.9	3.0	1.4	0.2	Iris-setosa
2	4.7	3.2	1.3	0.2	Iris-setosa
3	4.6	3.1	1.5	0.2	Iris-setosa
4	5.0	3.6	1.4	0.2	Iris-setosa

Drop 'Id' if it exists

```
if 'Id' in df.columns:
    df = df.drop('Id', axis=1)
```

Features and Labels

```
X = df.drop('species', axis=1)
y = df['species'] # ← Make sure this line has regular spaces
```

Train-Test Split

```
from sklearn.model_selection import train_test_split
```

```
X_train, X_test, y_train, y_test = train_test_split(X, y,
test_size=0.2, random_state=42)
```

overview, model evaluation & prediction

```
import pandas as pd
from sklearn.model_selection import train_test_split
from sklearn.ensemble import RandomForestClassifier
from sklearn.metrics import accuracy_score, classification_report
```

Load dataset (replace the path if needed)

```
df = pd.read_csv("IRIS.csv") # Make sure IRIS.csv is in your working
directory
```

Drop 'Id' column if it exists

```
if 'Id' in df.columns:
    df = df.drop('Id', axis=1)
```

Features and labels

```
X = df.drop('species', axis=1) # Make sure the column name is correct
(e.g., 'species')
```

```

y = df['species']

# Train-test split
X_train, X_test, y_train, y_test = train_test_split(X, y,
test_size=0.2, random_state=42)

# Train the Random Forest model
model = RandomForestClassifier(n_estimators=100, random_state=42)
model.fit(X_train, y_train)

# Make predictions
y_pred = model.predict(X_test)

# Evaluate the model
print("Accuracy:", accuracy_score(y_test, y_pred))
print(classification_report(y_test,y_pred))

```

Accuracy: 1.0

	precision	recall	f1-score	support
Iris-setosa	1.00	1.00	1.00	10
Iris-versicolor	1.00	1.00	1.00	9
Iris-virginica	1.00	1.00	1.00	11
accuracy			1.00	30
macro avg	1.00	1.00	1.00	30
weighted avg	1.00	1.00	1.00	30

save the model

```

import joblib
joblib.dump(model, 'iris_model.pkl')

['iris_model.pkl']

```