

Assignment6Bayes

April 5, 2022

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[1]: import pandas as pd
import seaborn as sns
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[3]: data = sns.load_dataset('iris')
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[25]: data.head()
```

```
[25]:
```

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

```
[5]: from sklearn.naive_bayes import GaussianNB
```

```
[12]: X = features = data[['sepal_length', 'sepal_width', 'petal_length',
↪ 'petal_width']]
y = target = data['species']
```

```
[13]: model = GaussianNB()
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[14]: from sklearn.model_selection import train_test_split
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[15]: X_train, X_test, y_train, y_test = train_test_split(X, y, test_size=0.33,
↪ random_state=42)
```

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[16]: model.fit(X=X_train, y=y_train)
```

```
[16]: GaussianNB()
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[18]: prediction = model.predict(X=X_test)
```

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[19]: from sklearn.metrics import classification_report, confusion_matrix
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```
[22]: print(confusion_matrix(y_true=y_test, y_pred=prediction))
```

```
[[19  0  0]
 [ 0 14  1]
 [ 0  1 15]]
```

```
[24]: print(classification_report(y_true=y_test,y_pred=prediction))
```

	precision	recall	f1-score	support
setosa	1.00	1.00	1.00	19
versicolor	0.93	0.93	0.93	15
virginica	0.94	0.94	0.94	16
accuracy			0.96	50
macro avg	0.96	0.96	0.96	50
weighted avg	0.96	0.96	0.96	50

```
[ ]:
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