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


iris = sns.load_dataset("iris")


iris.head()
```

	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

```python
x = iris.drop(["species"], axis=1)
y = iris.species
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)


from sklearn.feature_selection import mutual_info_classif
mi = mutual_info_classif(x_train, y_train)
mi = pd.Series(mi)
mi.index = x_train.columns
mi.sort_values(ascending=False)
```

```
petal_width     0.977222
petal_length    0.968383
sepal_length    0.483177
sepal_width     0.264504
dtype: float64
```

```python
from sklearn.feature_selection import mutual_info_classif
from sklearn.feature_selection import SelectKBest
select = SelectKBest(mutual_info_classif, k=2)
select.fit(x_train, y_train)
```

```
▾                    SelectKBest
SelectKBest(k=2, score_func=<function mutual_info_classif at 0x7f2164373370>)
```

```python
x_train.columns
```

```
Index(['sepal_length', 'sepal_width', 'petal_length', 'petal_width'], dtype='object')
```

```python
select.get_support()
```

```
array([False, False,  True,  True])
```

```python
from sklearn.feature_selection import chi2
from sklearn.feature_selection import SelectKBest
select = SelectKBest(chi2, k=2)
select.fit(x_train, y_train)
```

```
▾                    SelectKBest
SelectKBest(k=2, score_func=<function chi2 at 0x7f2164abeb90>)
```

```python
x_train[x_train.columns[select.get_support()]]
```

	petal_length	petal_width
22	1.0	0.2
15	1.5	0.4
65	4.4	1.4
11	1.6	0.2
42	1.3	0.2
...	...	...

```
heart = pd.read_csv("/content/heart.csv")
```

| 106 | 4.5 | 1.7 |

```
heart.head()
```

	age	sex	cp	trestbps	chol	fbs	restecg	thalach	exang	oldpeak	slope	ca	thal	target
0	52	1	0	125	212	0	1	168	0	1.0	2	2	3	0
1	53	1	0	140	203	1	0	155	1	3.1	0	0	3	0
2	70	1	0	145	174	0	1	125	1	2.6	0	0	3	0
3	61	1	0	148	203	0	1	161	0	0.0	2	1	3	0
4	62	0	0	138	294	1	1	106	0	1.9	1	3	2	0

```
x = heart.drop(["target"], axis=1)
y = heart.target
```

```
x_train, x_test, y_train, y_test = train_test_split(x,y, test_size=0.2, random_state=42)
```

```
x_train.columns
```

```
Index(['age', 'sex', 'cp', 'trestbps', 'chol', 'fbs', 'restecg', 'thalach',
       'exang', 'oldpeak', 'slope', 'ca', 'thal'],
      dtype='object')
```

```
x_train.shape
```

```
(820, 13)
```

```
from sklearn.feature_selection import f_classif
from sklearn.feature_selection import SelectKBest
select = SelectKBest(chi2, k=6)
select.fit(x_train, y_train)
```

```
▼             SelectKBest
SelectKBest(k=6, score_func=<function chi2 at 0x7f2164abeb90>)
```

```
x_train.columns[select.get_support()]
```

```
Index(['cp', 'chol', 'thalach', 'exang', 'oldpeak', 'ca'], dtype='object')
```