

# 컴퓨터학부 2019111594 엄다연

## Assignment #1

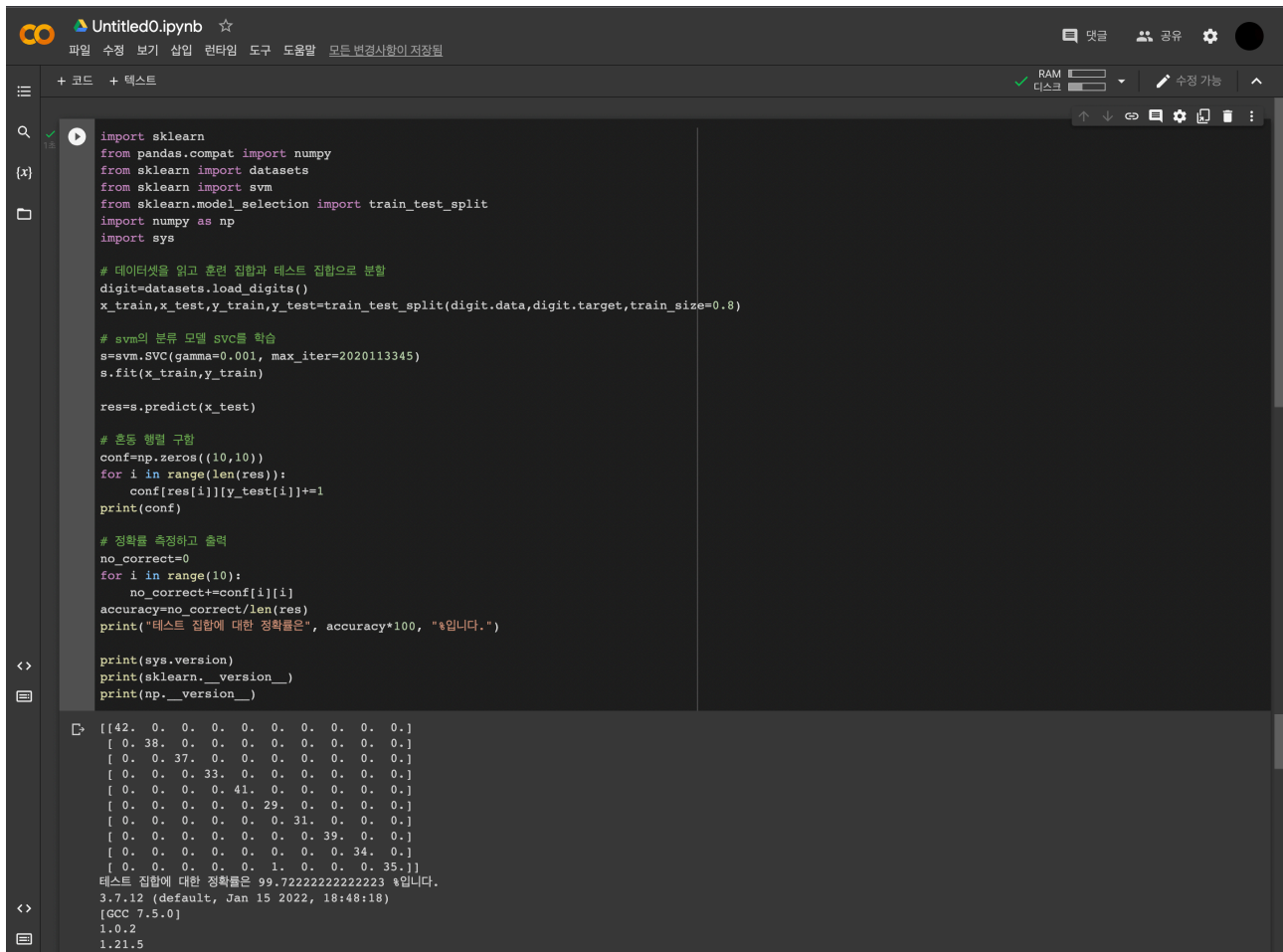
### 1. Cloud (Colab)

Library versions :

Python 3.7.12 [GCC 7.5.0]

sklearn 1.0.2

numpy 1.21.5



```
import sklearn
from pandas.compat import numpy
from sklearn import datasets
from sklearn import svm
from sklearn.model_selection import train_test_split
import numpy as np
import sys

# 데이터셋을 읽고 훈련 집합과 테스트 집합으로 분할
digit=datasets.load_digits()
x_train,x_test,y_train,y_test=train_test_split(digit.data,digit.target,train_size=0.8)

# svm의 분류 모델 SVC를 학습
s=svm.SVC(gamma=0.001, max_iter=2020113345)
s.fit(x_train,y_train)

res=s.predict(x_test)

# 혼동 행렬 구함
conf=np.zeros((10,10))
for i in range(len(res)):
    conf[res[i]][y_test[i]]+=1
print(conf)

# 정확률 측정하고 출력
no_correct=0
for i in range(10):
    no_correct+=conf[i][i]
accuracy=no_correct/len(res)
print("테스트 집합에 대한 정확률은", accuracy*100, "%입니다.")

print(sys.version)
print(sklearn.__version__)
print(np.__version__)

[[42.  0.  0.  0.  0.  0.  0.  0.  0.  0.]
 [ 0. 38.  0.  0.  0.  0.  0.  0.  0.  0.]
 [ 0.  0. 37.  0.  0.  0.  0.  0.  0.  0.]
 [ 0.  0.  0. 33.  0.  0.  0.  0.  0.  0.]
 [ 0.  0.  0.  0. 41.  0.  0.  0.  0.  0.]
 [ 0.  0.  0.  0.  0. 29.  0.  0.  0.  0.]
 [ 0.  0.  0.  0.  0.  0. 31.  0.  0.  0.]
 [ 0.  0.  0.  0.  0.  0.  0. 39.  0.  0.]
 [ 0.  0.  0.  0.  0.  0.  0.  0. 34.  0.]
 [ 0.  0.  0.  0.  0.  1.  0.  0.  0. 35.]]
테스트 집합에 대한 정확률은 99.72222222222223 %입니다.
3.7.12 (default, Jan 15 2022, 18:48:18)
[GCC 7.5.0]
1.0.2
1.21.5
```

## 2. Local

Library versions :

Python 3.7.11 [Clang 10.0.0 ]

sklearn 1.0.2

numpy 1.21.2

The screenshot displays the Spyder IDE interface. The left pane shows a file named `assignment1.py` with the following code:

```
1 import sklearn
2 from pandas.compat import numpy
3 from sklearn import datasets
4 from sklearn import svm
5 from sklearn.model_selection import train_test_split
6 import numpy as np
7 import sys
8
9 # 데이터셋을 읽고 훈련 집합과 테스트 집합으로 분할
10 digit=datasets.load_digits()
11 x_train,x_test,y_train,y_test=train_test_split(digit.data,digit.target,train_size=0.8)
12
13 # svm의 분류 모델 SVC를 학습
14 s=svm.SVC(gamma=0.001, max_iter=2020113345)
15 s.fit(x_train,y_train)
16
17 res=s.predict(x_test)
18
19 # 혼동 행렬 구함
20 conf=np.zeros((10,10))
21 for i in range(len(res)):
22     conf[res[i]][y_test[i]]+=1
23 print(conf)
24
25 # 정확도를 측정하고 출력
26 no_correct=0
27 for i in range(10):
28     no_correct+=conf[i][i]
29 accuracy=no_correct/len(res)
30 print("테스트 집합에 대한 정확률은", accuracy*100, "%입니다.")
31
32 print(sys.version)
33 print(sklearn.__version__)
34 print(np.__version__)
```

The right pane shows the IPython console output:

```
Python 3.7.11 (default, Jul 27 2021, 07:03:16)
Type "copyright", "credits" or "license()" for more information.

IPython 7.31.1 -- An enhanced Interactive Python.

In [1]: runfile('/Users/eomdayeon/Desktop/aipSources/assignment1.py', wdir='/Users/eomdayeon/Desktop/aipSources')
[[35.  0.  0.  0.  0.  0.  0.  0.  0.  0.]
 [ 0. 43.  0.  0.  0.  0.  0.  0.  0.  0.]
 [ 0.  0. 36.  0.  0.  0.  0.  0.  0.  0.]
 [ 0.  0.  0. 34.  0.  0.  0.  0.  0.  1.]
 [ 0.  0.  0.  0. 36.  0.  0.  0.  0.  0.]
 [ 0.  0.  0.  0.  0. 44.  0.  0.  0.  0.]
 [ 0.  0.  0.  0.  0.  0. 1. 34.  0.  0. 0.]
 [ 0.  0.  0.  0.  0.  0.  0.  0. 30.  0. 0.]
 [ 0.  0.  0.  0.  0.  0.  0.  0.  0. 32. 0.]
 [ 0.  0.  0.  0.  0.  0.  0.  1.  0. 33. 0.]
테스트 집합에 대한 정확률은 99.16666666666667 %입니다.
3.7.11 (default, Jul 27 2021, 07:03:16)
[Clang 10.0.0 ]
1.0.2
1.21.2

In [2]:
```

The bottom status bar indicates: Kite: Indexing, LSP Python: ready, conda: aip (Python 3.7.11), Line 32, Col 19, UTF-8, LF, RW, Mem 92%.