AI and Deep Learning

AI와 머신러닝, 그리고 딥러닝

변 영 철


나, 연서


앙,슬끼
추억의 뽑기
보롬왓 상회


Plant Bank


메리골드

나만의 메리골드

날짜	길이 (전체)	너비	길이 (잎따리)
2019.06.16	0	0	0
2019.06.20	1.6cm	0.28cm	0.9cm
06.22	2.6cm	3.8cm	1.4cm
6.25	~~3.0~~ 3cm	4.6cm	1.6cm
2019.6.29	4.4	~~5.8cm~~	2cm
	~~5.0~~	0.5cm	
	5.0	0.6	2.2

① 키만

2019.06.16	0	0	0
2019.06.20	1.6cm	0.28cm	0.9cm
2019.06.22	3.3cm	~~4.5cm~~	1.5cm
6.25	3.5cm	5cm	1.8cm
6.29	5cm	0.55cm ~~5.5cm~~	2.5cm

② 길재

날짜	키	너비	길이
6.16	0	0	0
6.20	12mm	2.9mm	8mm
6.22	25mm	4.5mm	13mm
25	31m	5.5mm	15mm
6.29	45.5mm	6mm	19mm

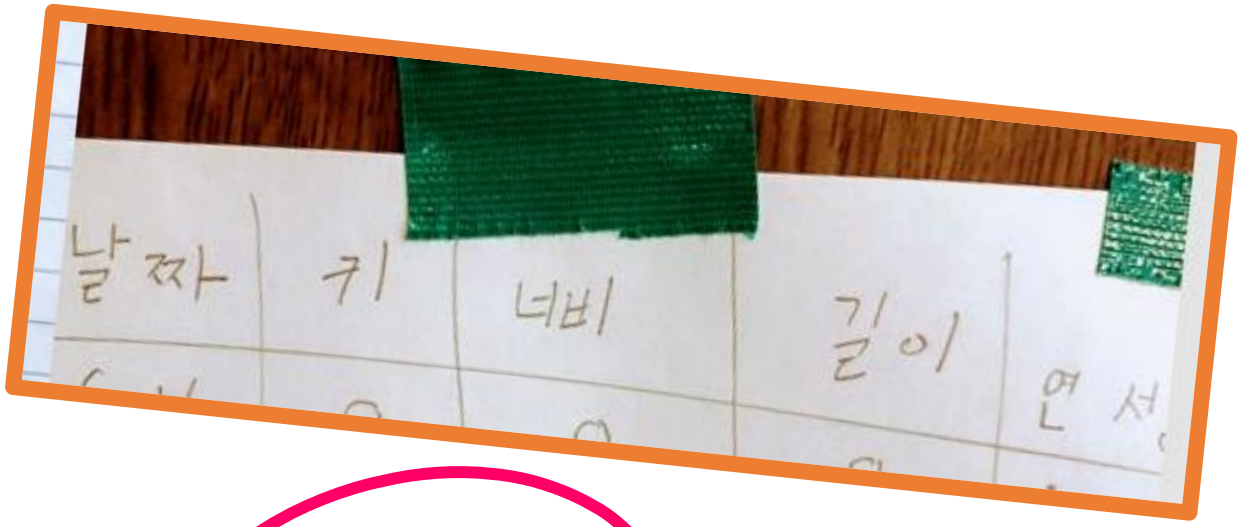
③ 세재

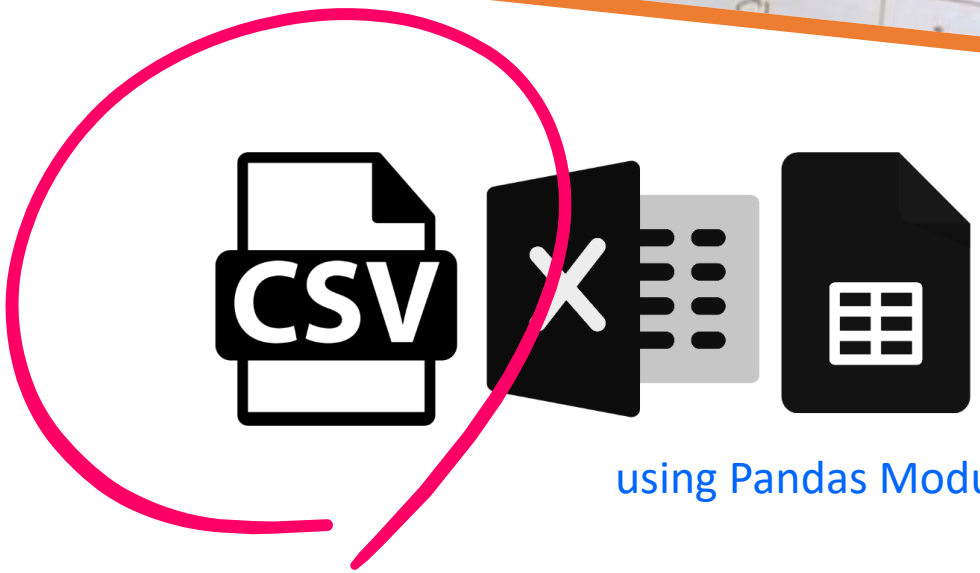
plant_diary.txt - 메모장

파일(F) 편집(E) 서식(O) 보기(V) 도움말(H)

지난날짜, 키, 잎 너비, 잎 길이, 주인

1, 0, 0, 0, 1
1, 0, 0, 0, 2
1, 0, 0, 0, 3
5, 16, 28, 9, 1
5, 16, 2.8, 9, 2
5, 12, 2.9, 8, 3
7, 33, 4.5, 15, 1
7, 26, 3.8, 14, 2
7, 25, 4.5, 13, 3
10, 35, 5, 18, 1
10, 30, 4.6, 16, 2
10, 31, 5.5, 15, 3
14, 50, 6.5, 25, 1
14, 44, 5.8, 20, 2
14, 45.5, 6, 19, 3
20, 56, 6,8, 27, 1
20, 50, 6, 22, 2
20, 51, 6.5, 21, 3



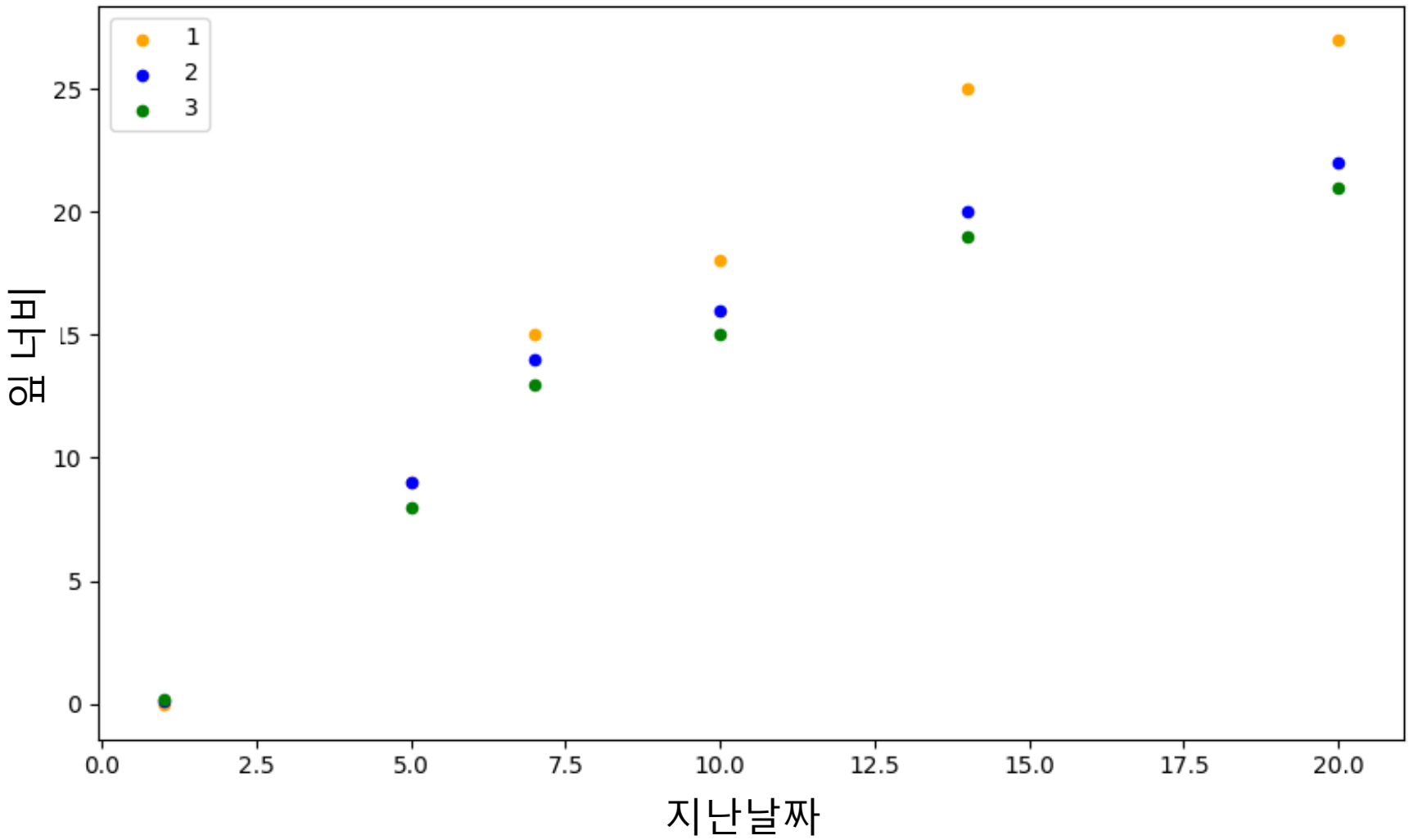


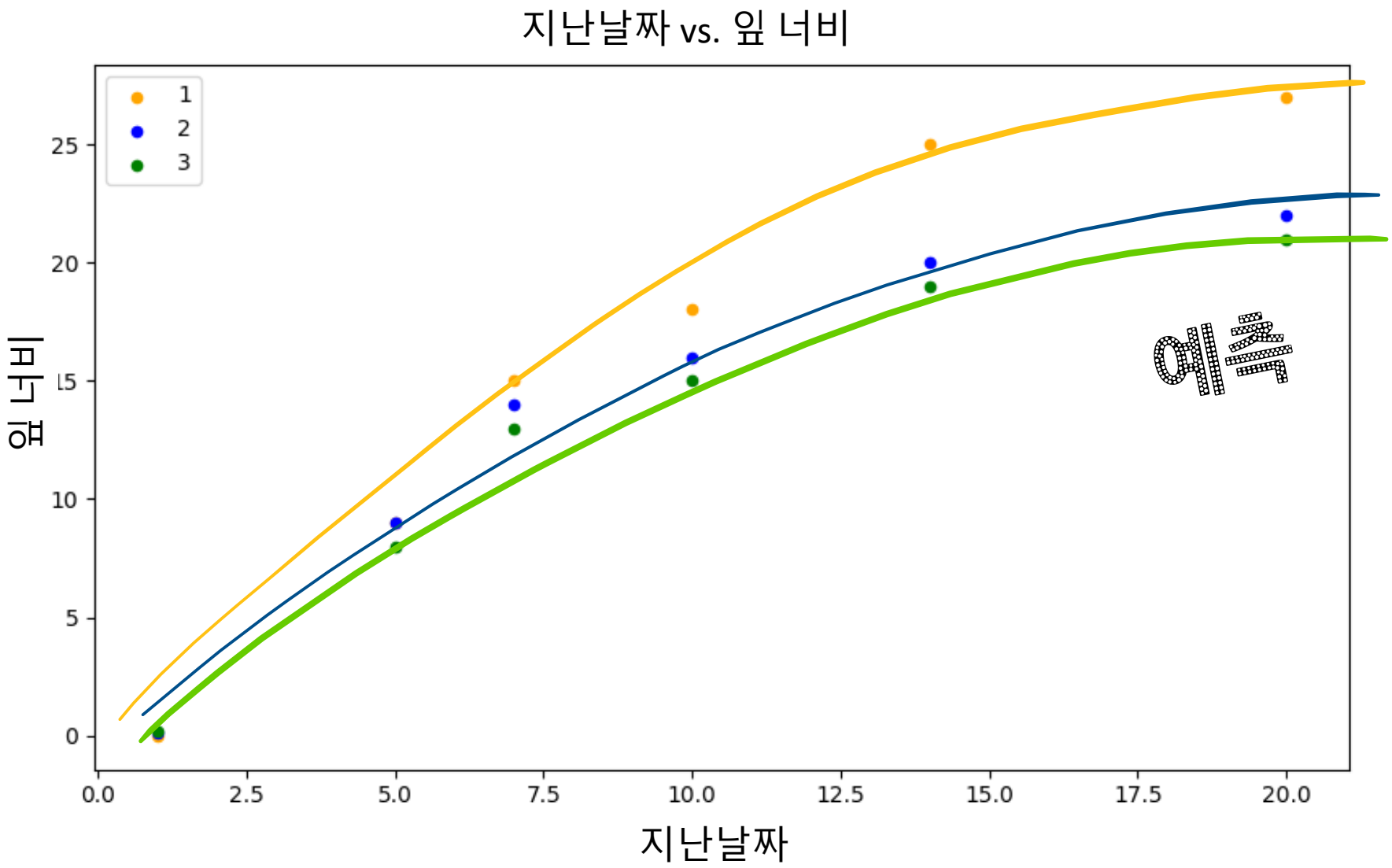
using Pandas Module

'날짜'가 지남에 따라
'잎 너비'는 얼마나 자랐을까?
점으로 찍어봐라(plot)!
(주인에 따라 다른 색으로 표시)

```
import pandas as pd
data_f = pd.read_csv('plant_diary.csv')
plot(data_f, '날짜', '잎 너비', '주인')
```

첫째, 둘째, 셋째 딸


1
2
3
25
20
15
10
5
0
0.0
2.5
5.0
7.5
10.0
12.5
15.0
17.5
20.0
지난날짜

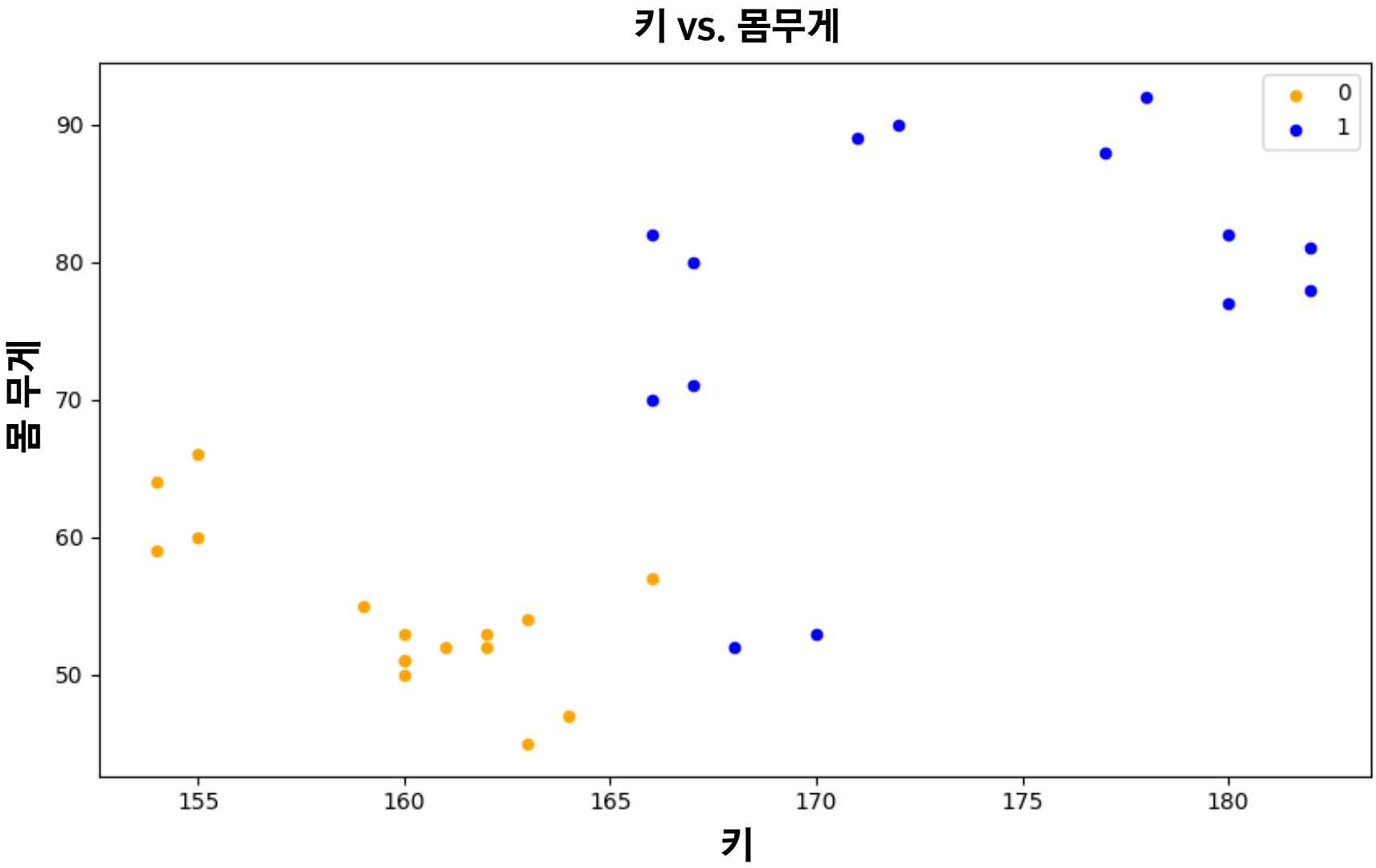

지난날짜 vs. 잎 너비
1
2
3
25
20
15
10
5
0
잎 너비
0.0
2.5
5.0
7.5
10.0
12.5
15.0
17.5
20.0
지난날짜
예측

https://www.kaggle.com/yungbyun/

plant-diary-ml-simple

키, 몸무게, 발 크기 등으로
성별을 알 수 있을까?

번호, 키, 몸무게, 발 크기, 학년, 성별
1,166,57,240,1,0
2,178,92,265,1,1
3,167,80,270,1,1
4,168,52,245,2,1
5,155,60,235,2,0
6,163,45,230,2,0
7,160,53,235,3,0
8,180,77,260,4,1
9,167,71,260,2,1
10,160,51,245,2,0
11,162,53,240,2,0
12,180,82,280,6,1
13,172,90,255,6,1
14,160,51,245,5,0
15,155,66,245,5,0
16,163,54,242,5,0
17,177,88,263,5,1
18,166,82,268,6,1
19,170,53,247,6,1
20,154,59,234,1,0
21,164,47,232,1,0


키 vs. 몸무게
0
1
90
80
70
60
50
몸무게
155
160
165
170
175
180
키

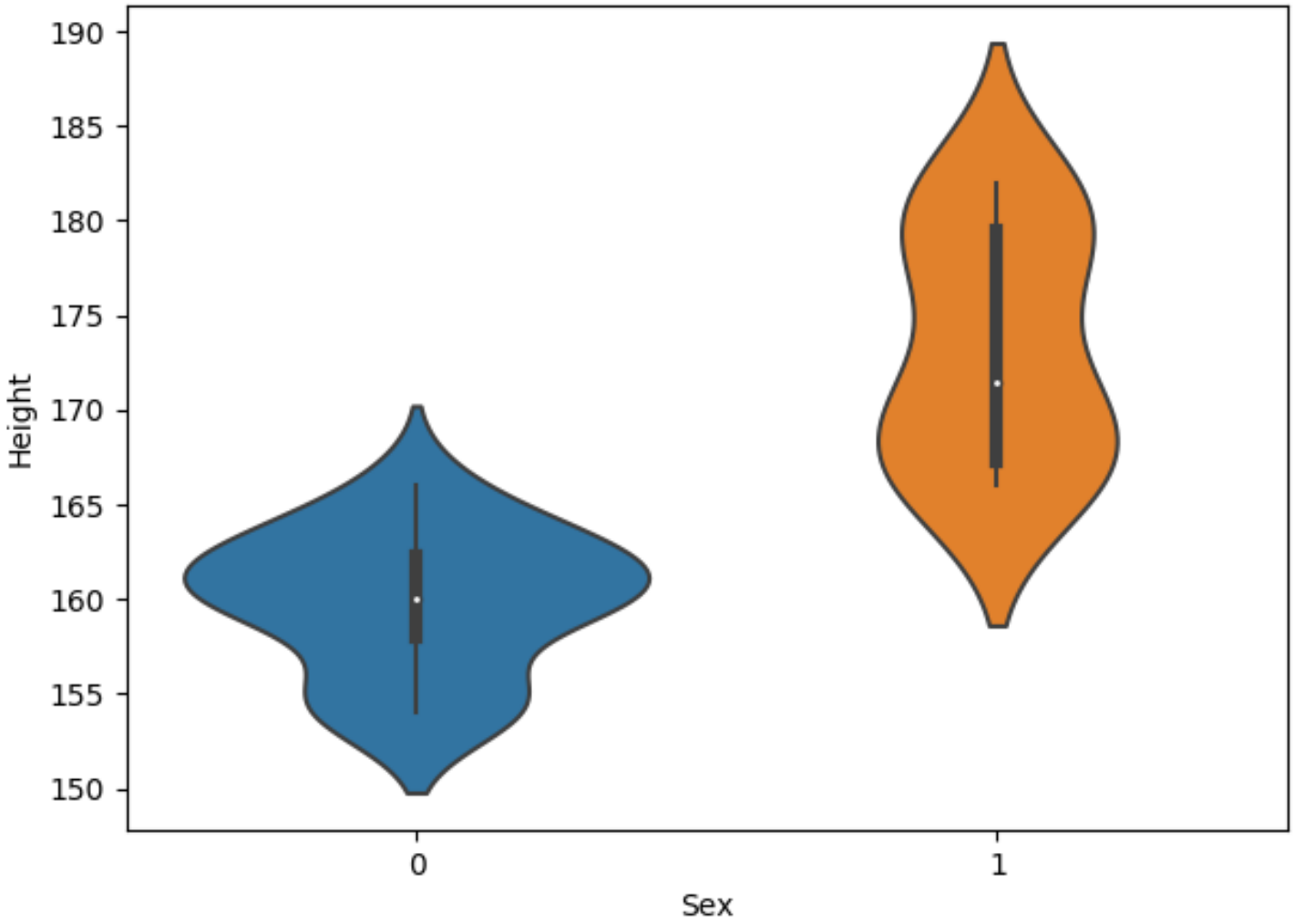
```
plot(data_f, '키', '몸무게', '성별')
```

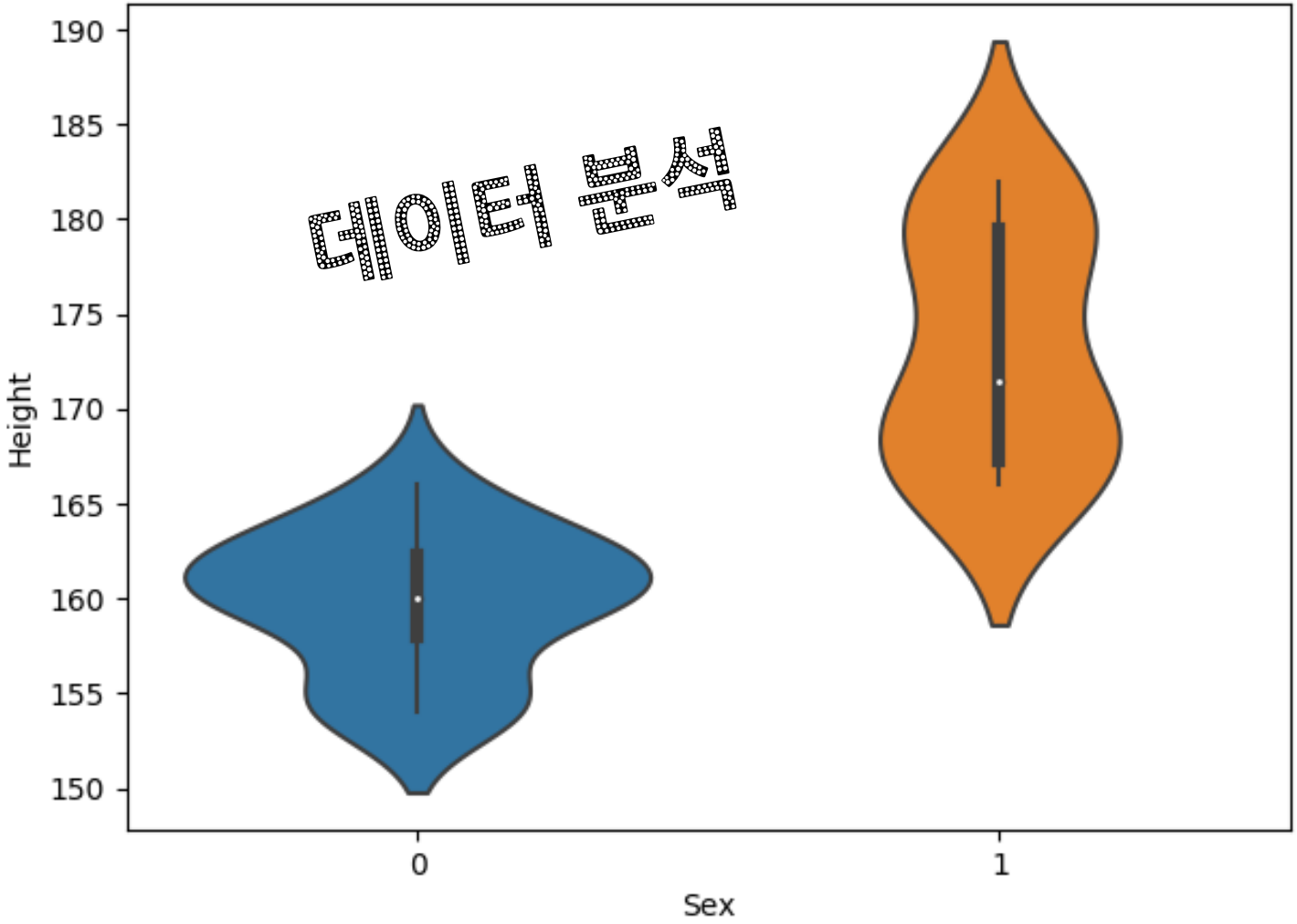
plot(data_f, '키', '몸무게', '성별')

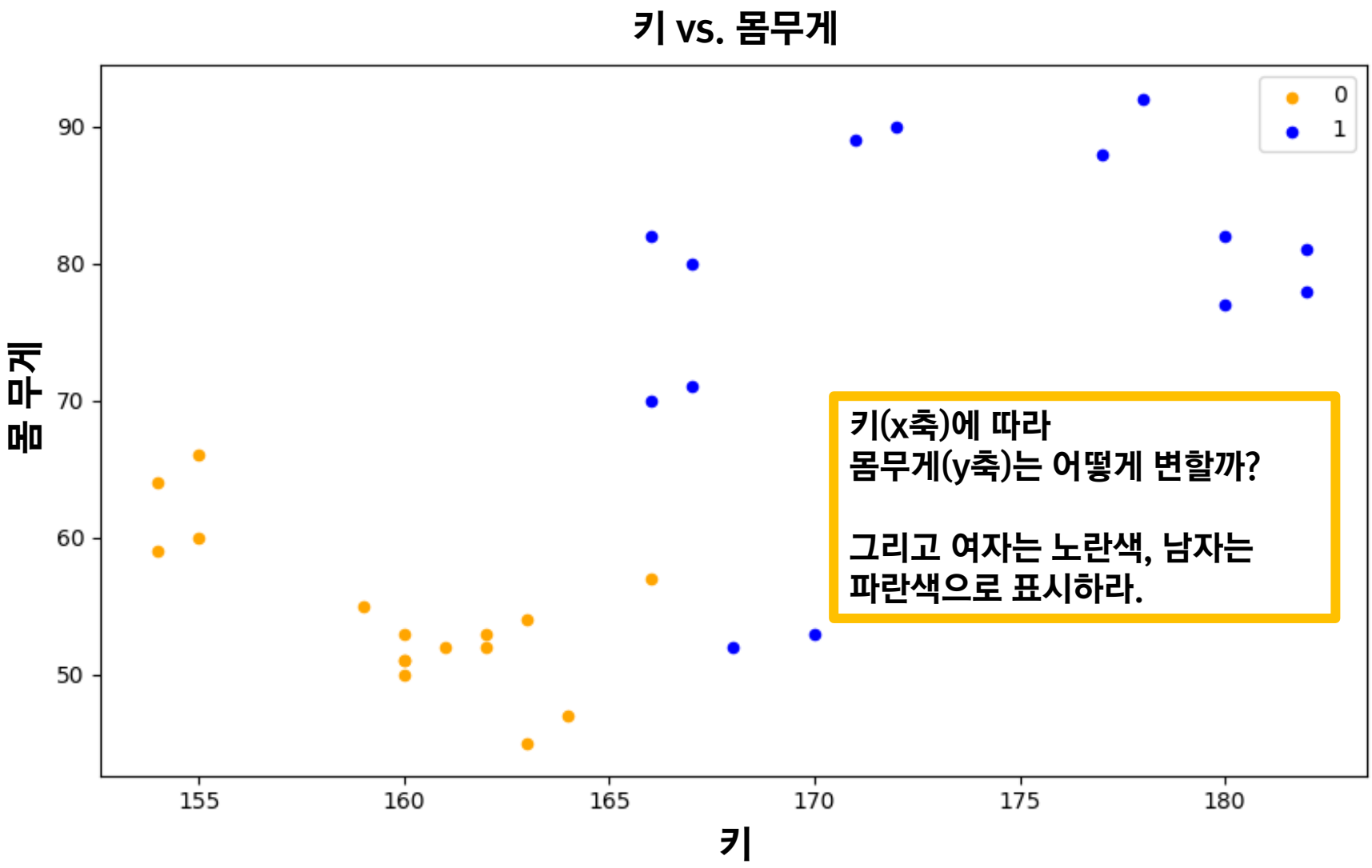
키에 따라
몸무게는 어떻게 변할까?
(성별에 따라 다른 색으로 표시)

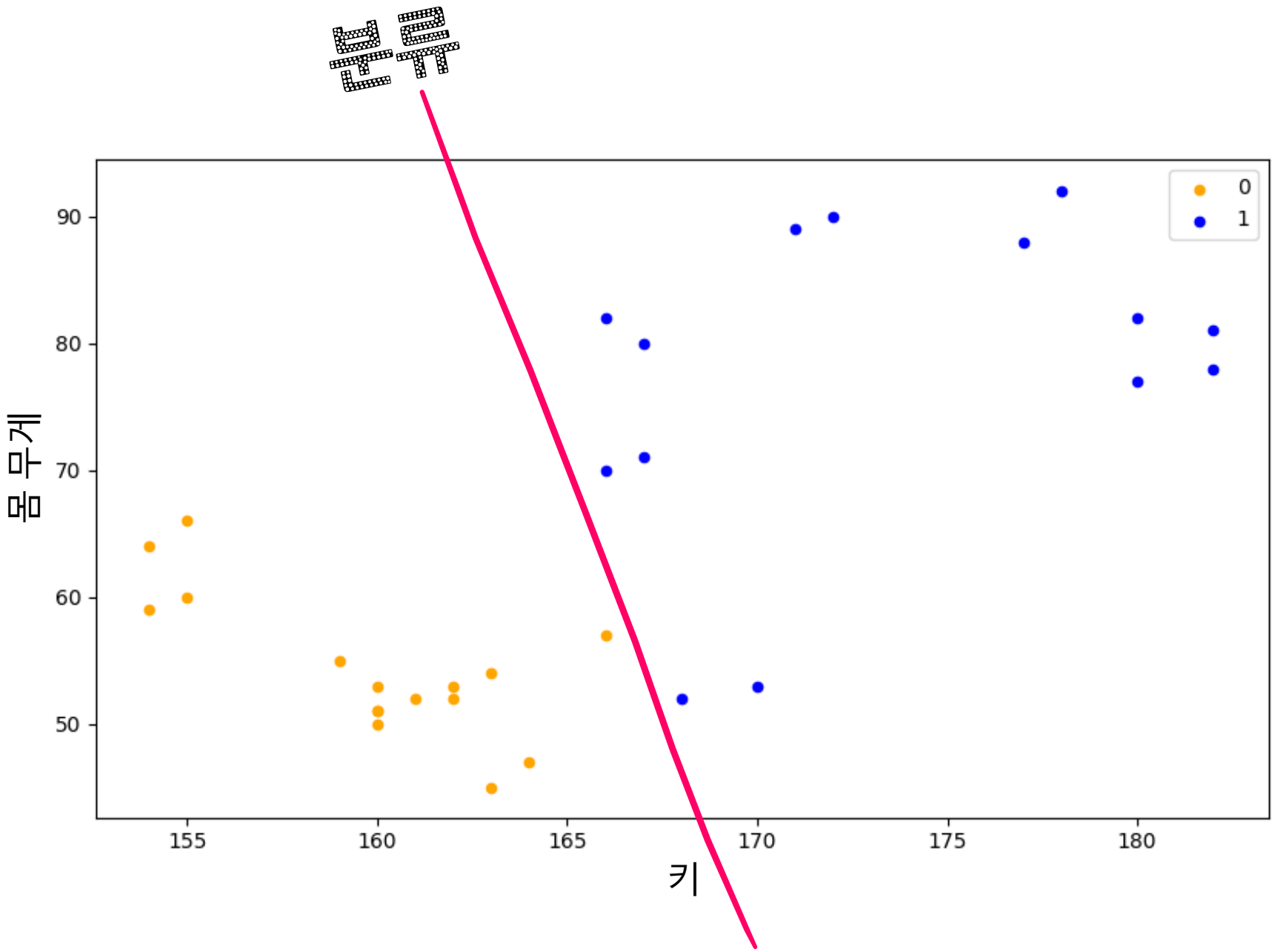
violinplot(data_f, '성별', '키')

성별에 따라
키가 어떻게 변하는지
바이올린 모양으로 표시


190
185
180
175
170
165
160
155
150
Height
0
1
Sex


데이터 분석
190
185
180
175
170
165
160
155
150
Height
0
1
Sex


키 vs. 몸무게
몸 무게
키
0
1
90
80
70
60
50
155
160
165
170
175
180
키(x축)에 따라
몸무게(y축)는 어떻게 변할까?
그리고 여자는 노란색, 남자는
파란색으로 표시하라.


분류
0
1
90
80
70
60
50
155
160
165
170
175
180
몸무게
키

data_f

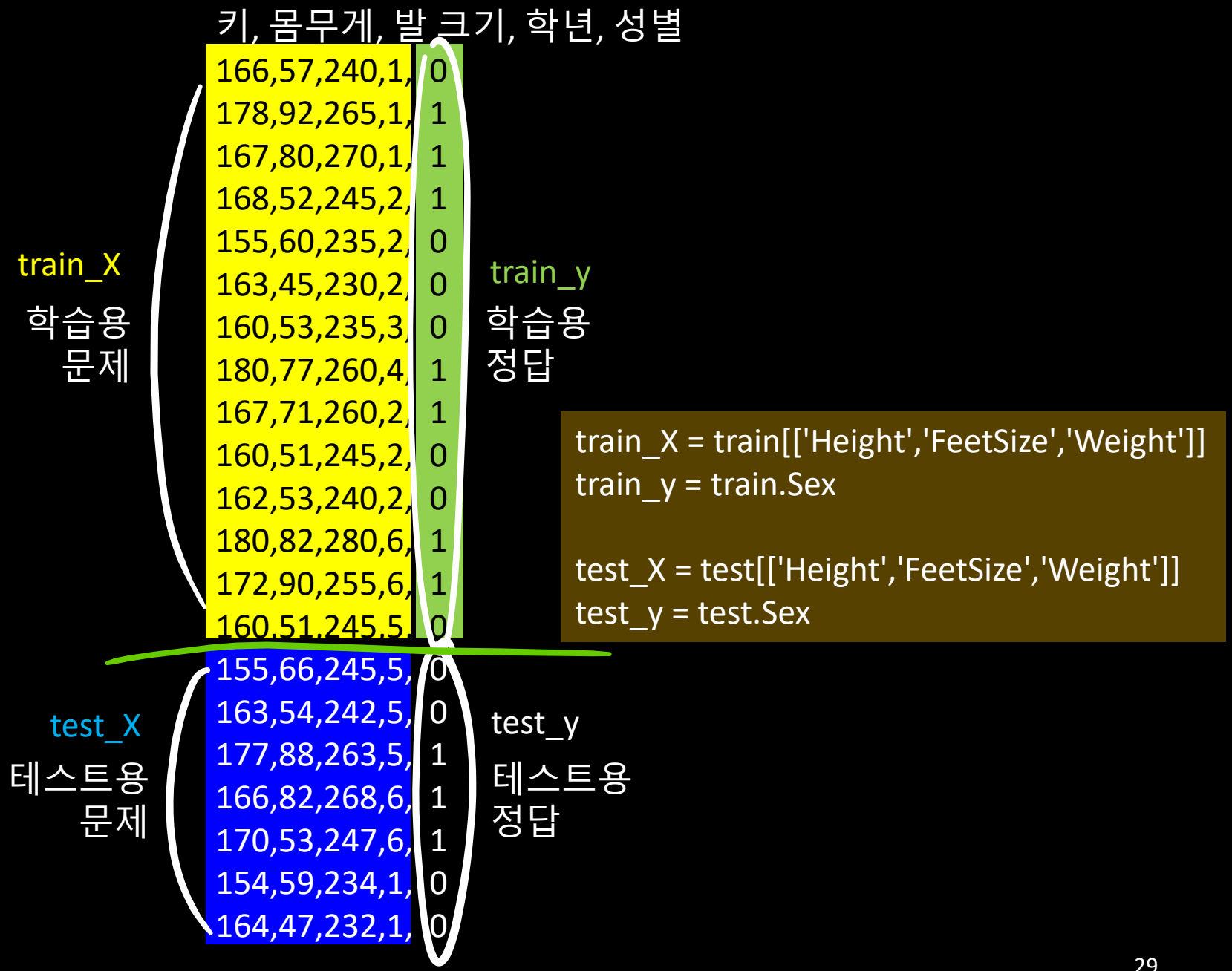
키, 몸무게, 발 크기, 학년, 성별

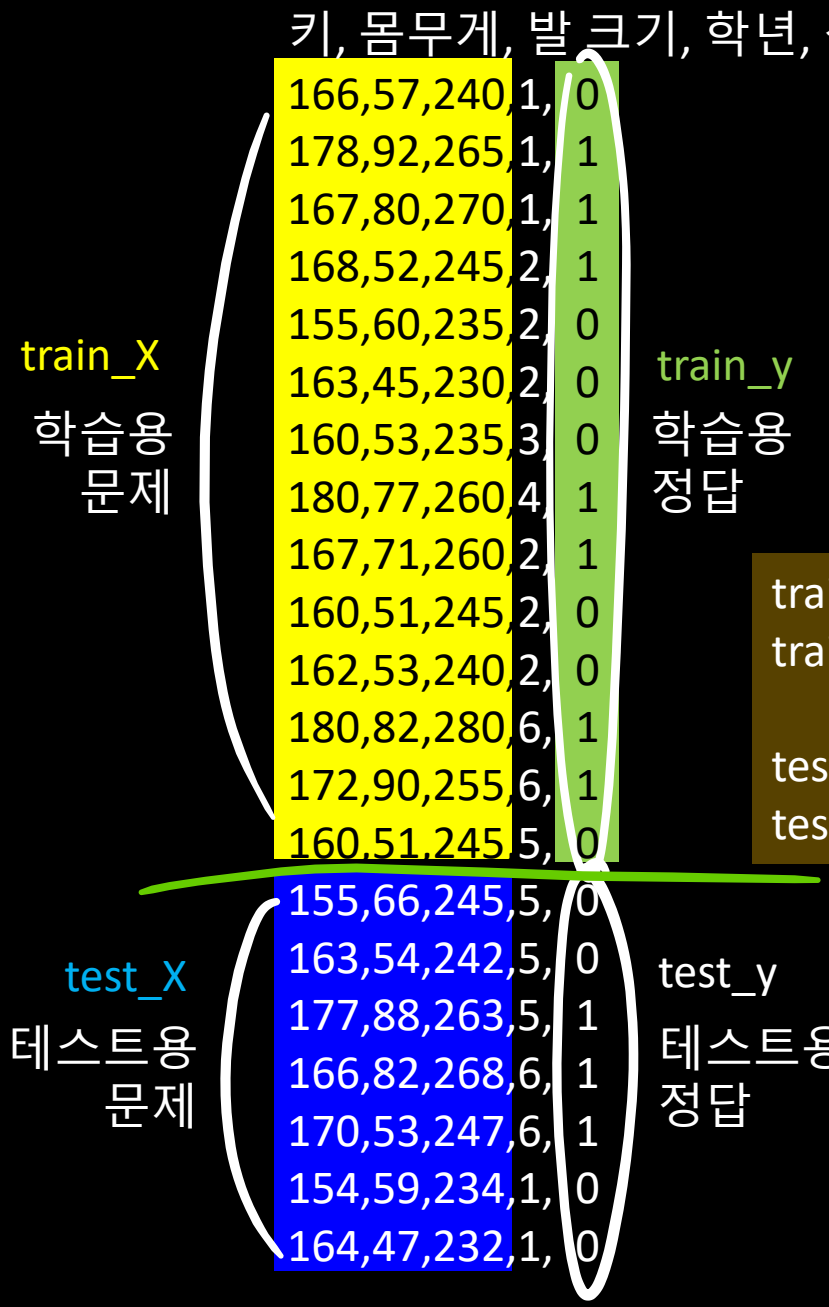
166,57,240,1, 0
178,92,265,1, 1
167,80,270,1, 1
168,52,245,2, 1
155,60,235,2, 0
163,45,230,2, 0
160,53,235,3, 0
180,77,260,4, 1
167,71,260,2, 1
160,51,245,2, 0
162,53,240,2, 0
180,82,280,6, 1
172,90,255,6, 1
160,51,245,5, 0
155,66,245,5, 0
163,54,242,5, 0
177,88,263,5, 1
166,82,268,6, 1
170,53,247,6, 1
154,59,234,1, 0
164,47,232,1, 0

학습용

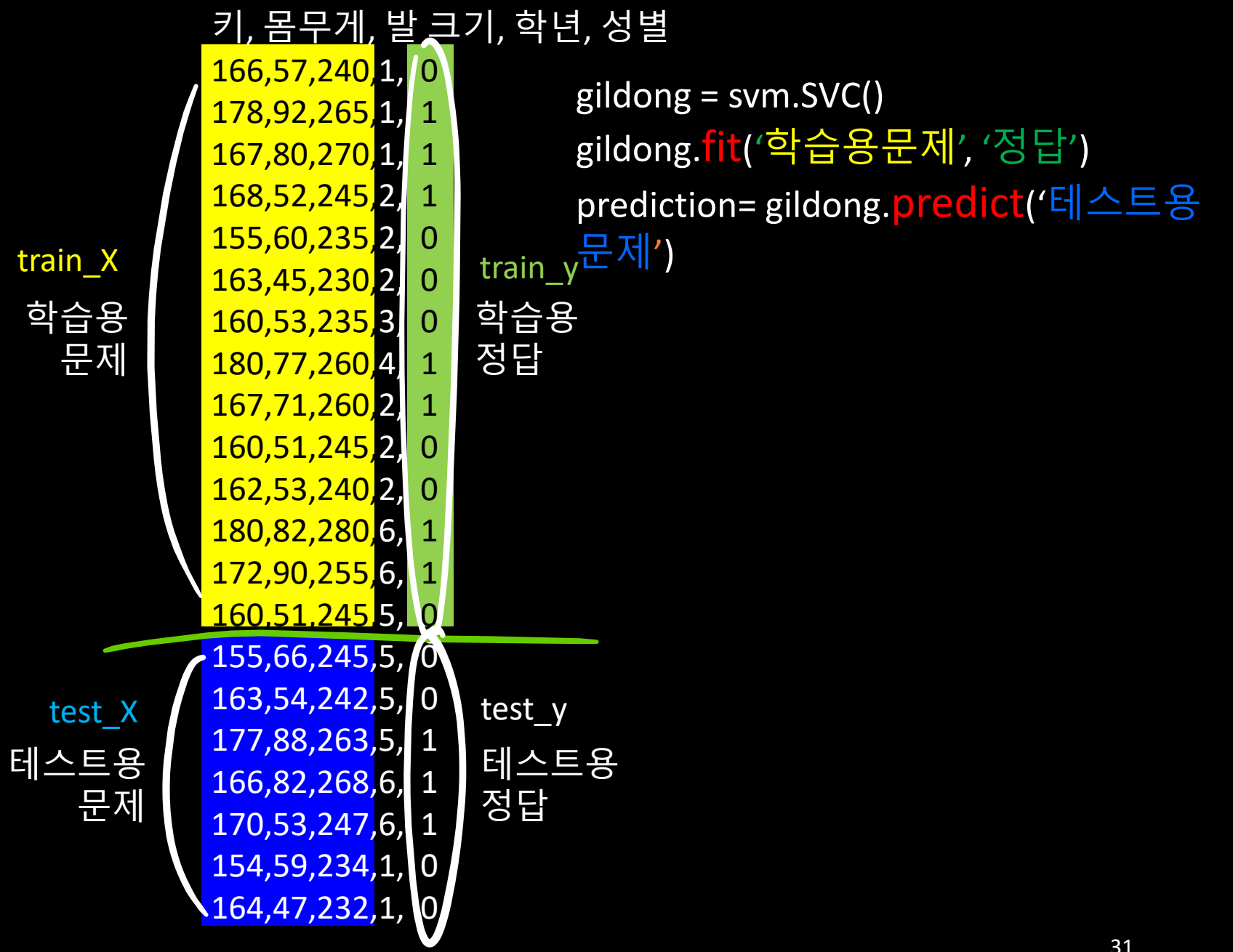
train, test = split(data_f)

테스트용


키, 몸무게, 발 크기, 학년, 성별
166,57,240,1, 0
178,92,265,1, 1
167,80,270,1, 1
168,52,245,2, 1
155,60,235,2, 0
163,45,230,2, 0
160,53,235,3, 0
180,77,260,4, 1
167,71,260,2, 1
160,51,245,2, 0
162,53,240,2, 0
180,82,280,6, 1
172,90,255,6, 1
160,51,245,5, 0
155,66,245,5, 0
163,54,242,5, 0
177,88,263,5, 1
166,82,268,6, 1
170,53,247,6, 1
154,59,234,1, 0
164,47,232,1, 0
train_X
학습용
문제
train_y
학습용
정답
test_X
테스트용
문제
test_y
테스트용
정답
train_X = train[['Height','FeetSize','Weight']]
train_y = train.Sex
test_X = test[['Height','FeetSize','Weight']]
test_y = test.Sex



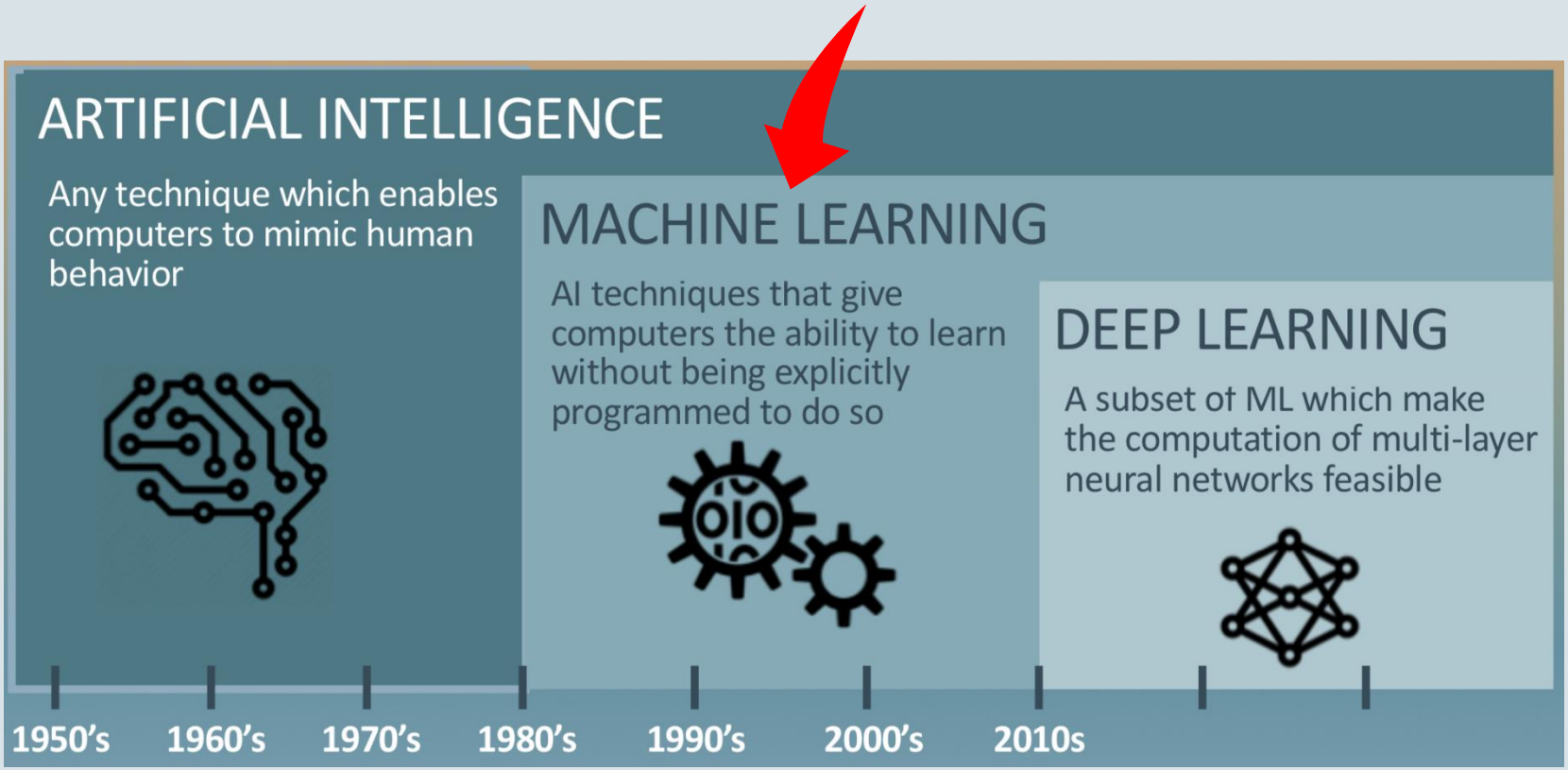

```
train_X = train[['Height','FeetSize','Weight']]
train_y = train.Sex

test_X = test[['Height','FeetSize','Weight']]
test_y = test.Sex
```


키, 몸무게, 발 크기, 학년, 성별
166,57,240,1, 0
178,92,265,1, 1
167,80,270,1, 1
168,52,245,2, 1
155,60,235,2, 0
163,45,230,2, 0
160,53,235,3, 0
180,77,260,4, 1
167,71,260,2, 1
160,51,245,2, 0
162,53,240,2, 0
180,82,280,6, 1
172,90,255,6, 1
160,51,245,5, 0
155,66,245,5, 0
163,54,242,5, 0
177,88,263,5, 1
166,82,268,6, 1
170,53,247,6, 1
154,59,234,1, 0
164,47,232,1, 0
train_X
학습용 문제
train_y
학습용 정답
test_X
테스트용 문제
test_y
테스트용 정답
gildong = svm.SVC()
gildong.fit('학습용문제', '정답')
prediction= gildong.predict('테스트용 문제')

https://www.kaggle.com/yungbyun/

female-male-classification-ml-simple

머신러닝 알고리즘에
데이터를 주고 학습(fit 함수)



인공지능
머신러닝
딥 러 닝

"왜 중요한가?"