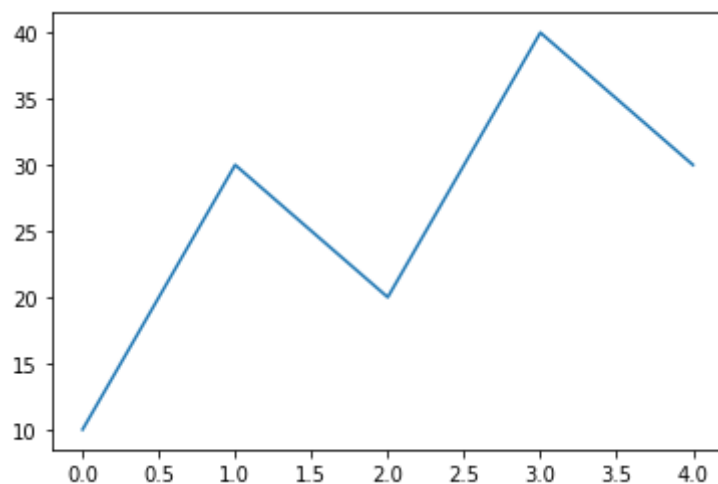


matplotlib으로 간단한 차트 그려보기

간단한 Plot 차트 그리기

```
In [1]: import matplotlib.pyplot as plt  
values = [10, 30, 20, 40, 30]  
plt.plot(values)
```

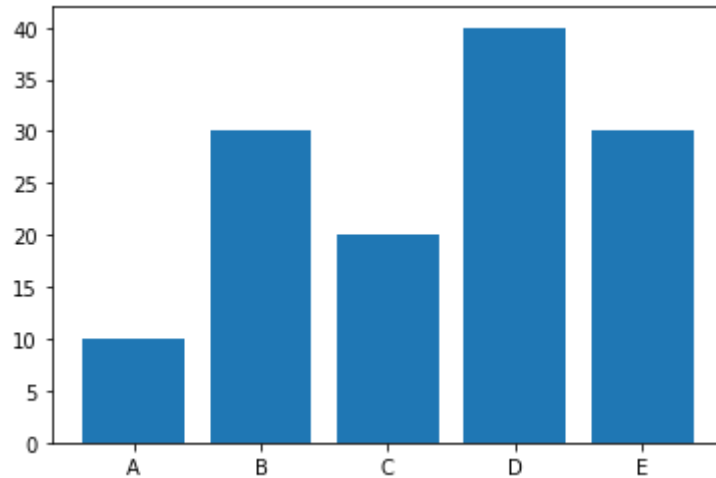
```
Out[1]: [<matplotlib.lines.Line2D at 0x1a6888cbdf0>]
```



간단한 Bar 차트 그리기

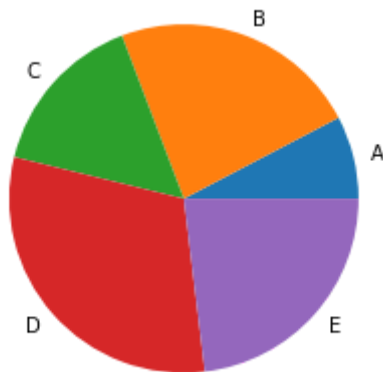
```
In [5]: items = ['A', 'B', 'C', 'D', 'E']  
values = [10, 30, 20, 40, 30]  
plt.bar(items, values)
```

```
Out[5]: <BarContainer object of 5 artists>
```



간단한 Pie Chart 만들기

```
In [6]: items = ['A', 'B', 'C', 'D', 'E']  
values = [10, 30, 20, 40, 30]  
  
plt.pie(values, labels=items)  
plt.show()
```



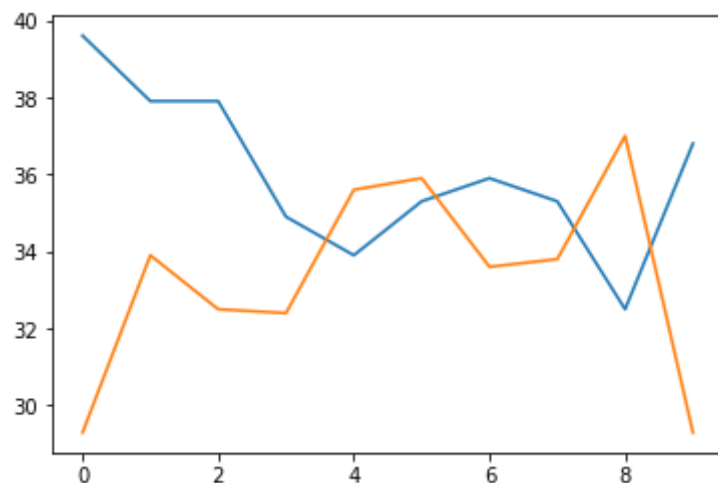
단계별로 옵션 배우기

Step 1. 기본 차트 생성하기

```
In [7]: temp1994 = [39.6, 37.9, 37.9, 34.9, 33.9, 35.3, 35.9, 35.3, 32.5, 36.8]
temp2018 = [29.3, 33.9, 32.5, 32.4, 35.6, 35.9, 33.6, 33.8, 37.0, 29.3]

plt.plot(temp1994)
plt.plot(temp2018)

plt.show()
```

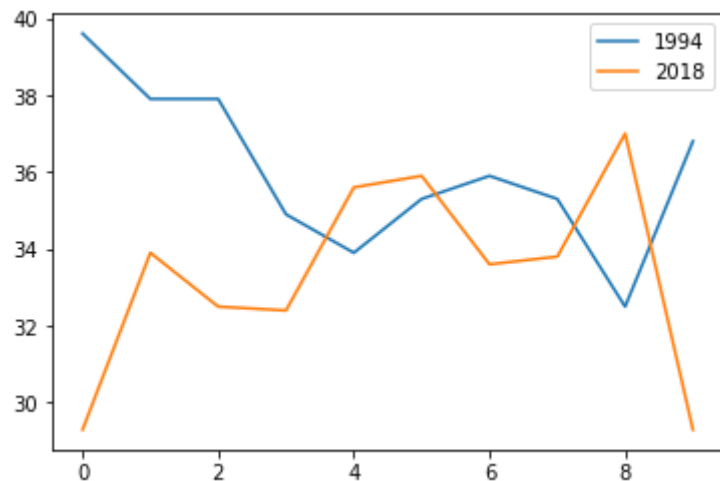


Step 2. 범례 표시하기

```
In [8]: temp1994 = [39.6, 37.9, 37.9, 34.9, 33.9, 35.3, 35.9, 35.3, 32.5, 36.8]
temp2018 = [29.3, 33.9, 32.5, 32.4, 35.6, 35.9, 33.6, 33.8, 37.0, 29.3]

plt.plot(temp1994, label = '1994')
plt.plot(temp2018, label = '2018')
plt.legend()

plt.show()
```

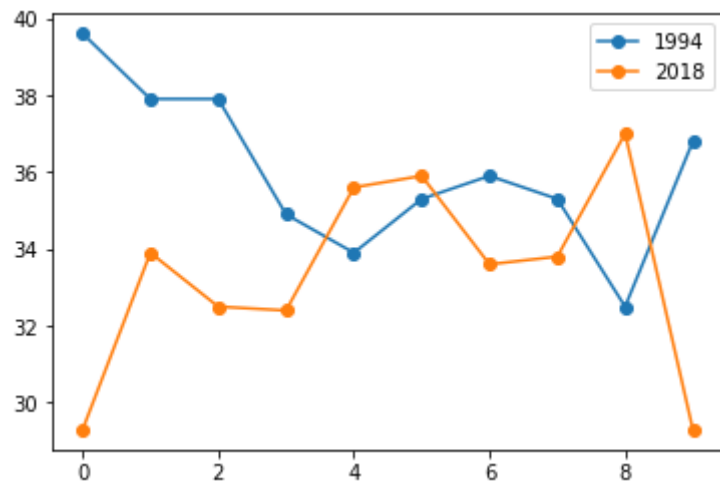


Step 3. 마커 적용하기

```
In [9]: temp1994 = [39.6, 37.9, 37.9, 34.9, 33.9, 35.3, 35.9, 35.3, 32.5, 36.8]
temp2018 = [29.3, 33.9, 32.5, 32.4, 35.6, 35.9, 33.6, 33.8, 37.0, 29.3]

plt.plot(temp1994, marker = 'o', label = '1994') # marker: o, v, ^, s, +, .
plt.plot(temp2018, marker = 'o', label = '2018')
plt.legend()

plt.show()
```



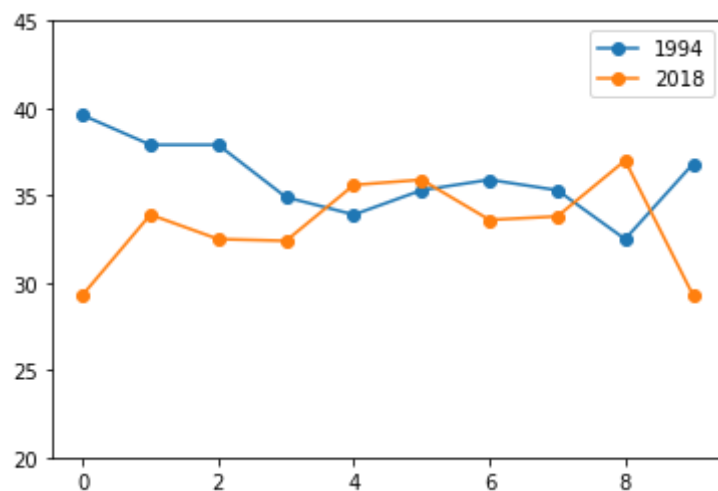
Step 4. Y축 범위 변경하기: y-axis limit

```
In [11]: temp1994 = [39.6, 37.9, 37.9, 34.9, 33.9, 35.3, 35.9, 35.3, 32.5, 36.8]
temp2018 = [29.3, 33.9, 32.5, 32.4, 35.6, 35.9, 33.6, 33.8, 37.0, 29.3]

plt.plot(temp1994, label = '1994', marker = 'o')
plt.plot(temp2018, label = '2018', marker = 'o')

plt.ylim(20, 45)

plt.legend()
plt.show()
```



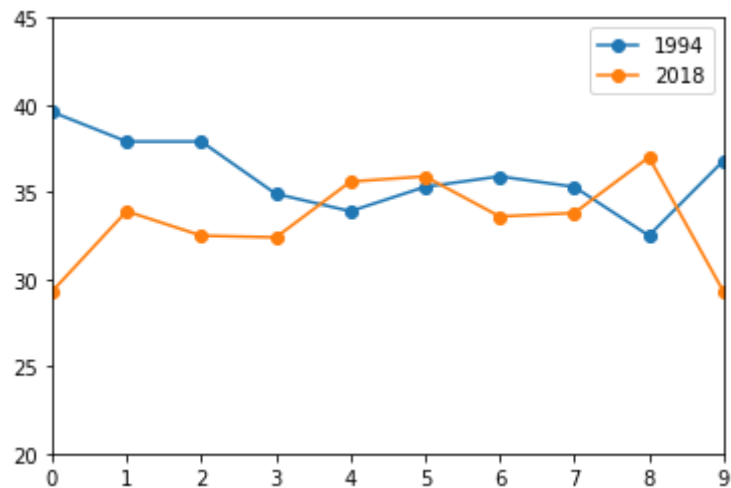
Step 5. X축 범위 변경하기: x-axis limit

```
In [12]: temp1994 = [39.6, 37.9, 37.9, 34.9, 33.9, 35.3, 35.9, 35.3, 32.5, 36.8]
temp2018 = [29.3, 33.9, 32.5, 32.4, 35.6, 35.9, 33.6, 33.8, 37.0, 29.3]

plt.plot(temp1994, label = '1994', marker = 'o')
plt.plot(temp2018, label = '2018', marker = 'o')

plt.ylim(20, 45)
plt.xlim(0, 9)
```

```
plt.legend()
plt.show()
```



Step 6. 제목(Title) 표시하기

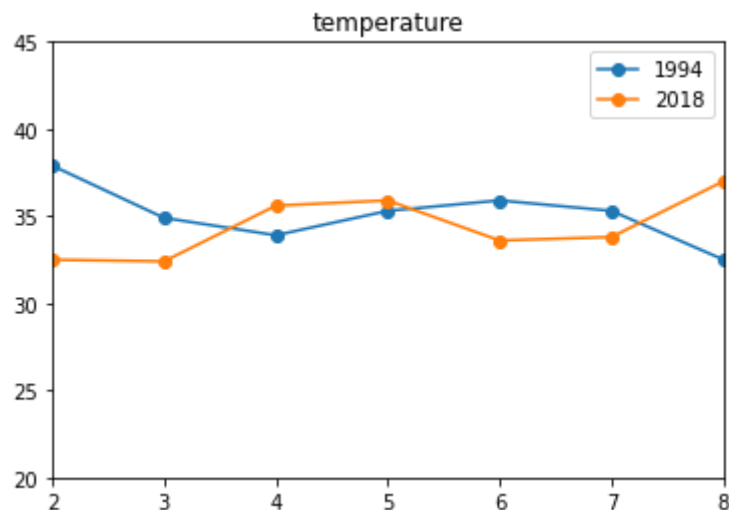
```
In [15]: temp1994 = [39.6, 37.9, 37.9, 34.9, 33.9, 35.3, 35.9, 35.3, 32.5, 36.8]
temp2018 = [29.3, 33.9, 32.5, 32.4, 35.6, 35.9, 33.6, 33.8, 37.0, 29.3]

plt.plot(temp1994, label = '1994', marker = 'o')
plt.plot(temp2018, label = '2018', marker = 'o')

plt.ylim(20, 45)
plt.xlim(2, 8)

plt.title("temperature") # 한글로 할 경우 에러 발생

plt.legend()
plt.show()
```



Step 7. 한글 제목(Title)

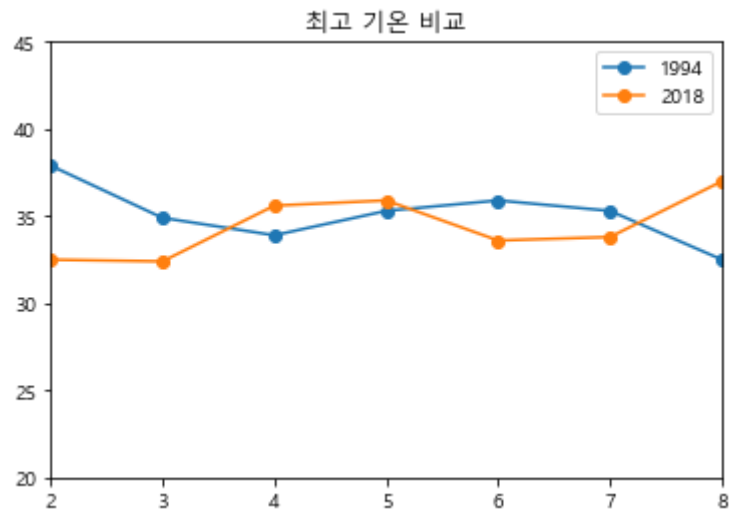
```
In [18]: temp1994 = [39.6, 37.9, 37.9, 34.9, 33.9, 35.3, 35.9, 35.3, 32.5, 36.8]
temp2018 = [29.3, 33.9, 32.5, 32.4, 35.6, 35.9, 33.6, 33.8, 37.0, 29.3]

plt.plot(temp1994, label = '1994', marker = 'o')
plt.plot(temp2018, label = '2018', marker = 'o')

plt.ylim(20, 45)
plt.xlim(2, 8)

plt.rc('font', family = 'Malgun Gothic')
plt.title("최고 기온 비교") # 박스로 표시도리 경우 다시 한 번 실행

plt.legend()
plt.show()
```



Step 8. 격자 표시하기

```
In [22]: temp1994 = [39.6, 37.9, 37.9, 34.9, 33.9, 35.3, 35.9, 35.3, 32.5, 36.8]
temp2018 = [29.3, 33.9, 32.5, 32.4, 35.6, 35.9, 33.6, 33.8, 37.0, 29.3]

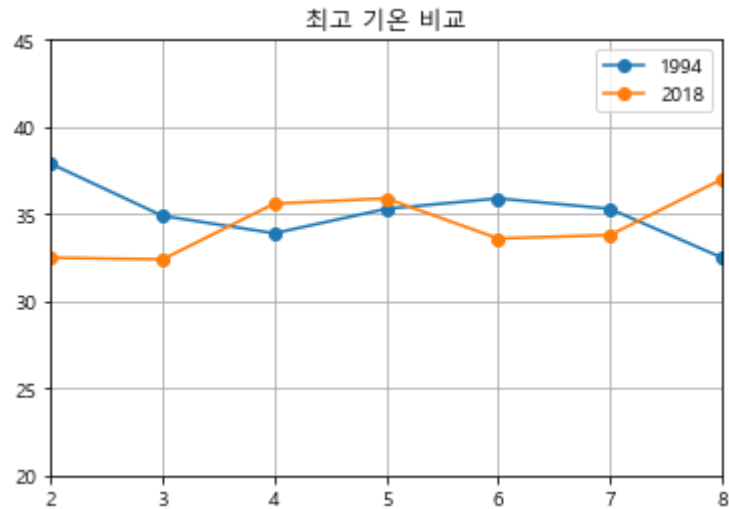
plt.plot(temp1994, label = '1994', marker = 'o')
plt.plot(temp2018, label = '2018', marker = 'o')

plt.ylim(20, 45)
plt.xlim(2, 8)

plt.rc('font', family = 'Malgun Gothic')
plt.title("최고 기온 비교") # 박스로 표시도리 경우 다시 한 번 실행

plt.grid(True)

plt.legend()
plt.show()
```

Step 9. 축 제목 표시하기

```
In [23]: temp1994 = [39.6, 37.9, 37.9, 34.9, 33.9, 35.3, 35.9, 35.3, 32.5, 36.8]
temp2018 = [29.3, 33.9, 32.5, 32.4, 35.6, 35.9, 33.6, 33.8, 37.0, 29.3]

plt.plot(temp1994, label = '1994', marker = 'o')
plt.plot(temp2018, label = '2018', marker = 'o')

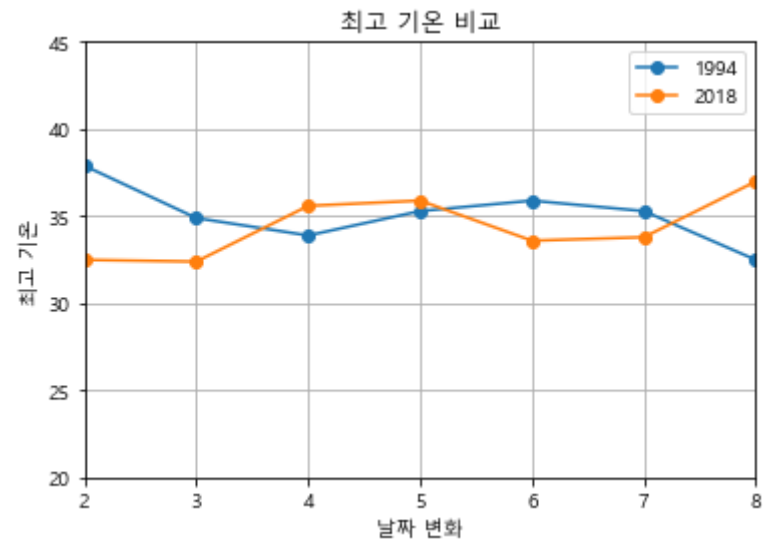
plt.ylim(20, 45)
plt.xlim(2, 8)

plt.rc('font', family = 'Malgun Gothic')
plt.title("최고 기온 비교") # 박스로 표시도리 경우 다시 한 번 실행

plt.grid(True)

plt.xlabel("날짜 변화")
plt.ylabel("최고 기온")

plt.legend()
plt.show()
```



Step 10. x축 값의 표시 단위: xticks 함수

```
In [26]: import numpy as np

temp1994 = [39.6, 37.9, 37.9, 34.9, 33.9, 35.3, 35.9, 35.3, 32.5, 36.8]
temp2018 = [29.3, 33.9, 32.5, 32.4, 35.6, 35.9, 33.6, 33.8, 37.0, 29.3]

plt.plot(temp1994, label = '1994', marker = 'o')
plt.plot(temp2018, label = '2018', marker = 'o')

plt.ylim(20, 45)
plt.xlim(2, 8)

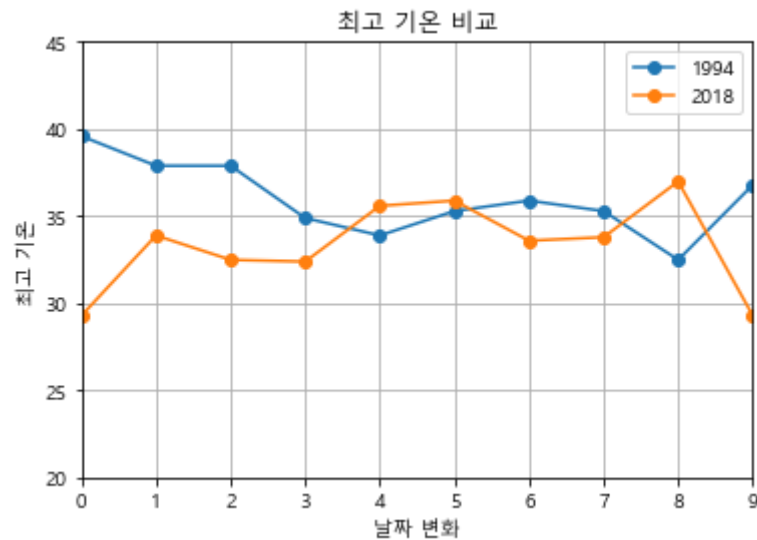
plt.rc('font', family = 'Malgun Gothic')
plt.title("최고 기온 비교") # 박스로 표시도리 경우 다시 한 번 실행

plt.grid(True)

plt.xlabel("날짜 변화")
plt.ylabel("최고 기온")

plt.xticks(np.arange(0, 10, 1))
```

```
plt.legend()
plt.show()
```



Step 11. x축 값의 표시 단위

```
In [27]: import numpy as np

temp1994 = [39.6, 37.9, 37.9, 34.9, 33.9, 35.3, 35.9, 35.3, 32.5, 36.8]
temp2018 = [29.3, 33.9, 32.5, 32.4, 35.6, 35.9, 33.6, 33.8, 37.0, 29.3]

plt.plot(temp1994, label = '1994', marker = 'o')
plt.plot(temp2018, label = '2018', marker = 'o')

plt.ylim(20, 45)
plt.xlim(2, 8)

plt.rc('font', family = 'Malgun Gothic')
plt.title("최고 기온 비교") # 박스로 표시도리 경우 다시 한 번 실행

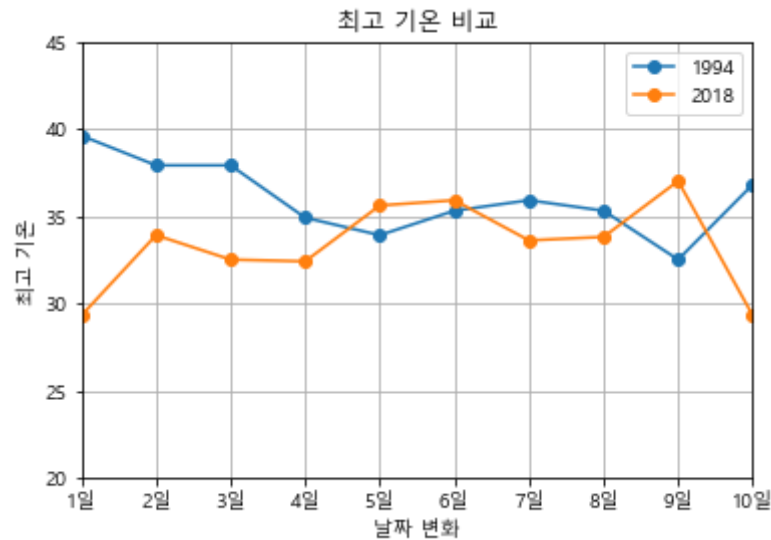
plt.grid(True)

plt.xlabel("날짜 변화")
plt.ylabel("최고 기온")

# plt.xticks(n.arange(0, 01, 0.5))
```

```
plt.xticks(np.arange(0, 10), ("1일", "2일", "3일", "4일", "5일", "6일", "7일", "8일", "9일", "10일"))

plt.legend()
plt.show()
```



Step 12. y축 값의 표시 단위: yticks 함수

```
In [30]: import numpy as np

temp1994 = [39.6, 37.9, 37.9, 34.9, 33.9, 35.3, 35.9, 35.3, 32.5, 36.8]
temp2018 = [29.3, 33.9, 32.5, 32.4, 35.6, 35.9, 33.6, 33.8, 37.0, 29.3]

plt.plot(temp1994, label = '1994', marker = 'o')
plt.plot(temp2018, label = '2018', marker = 'o')

plt.ylim(20, 45)
plt.xlim(2, 8)

plt.rc('font', family = 'Malgun Gothic')
plt.title("최고 기온 비교") # 박스로 표시도리 경우 다시 한 번 실행

plt.grid(True)

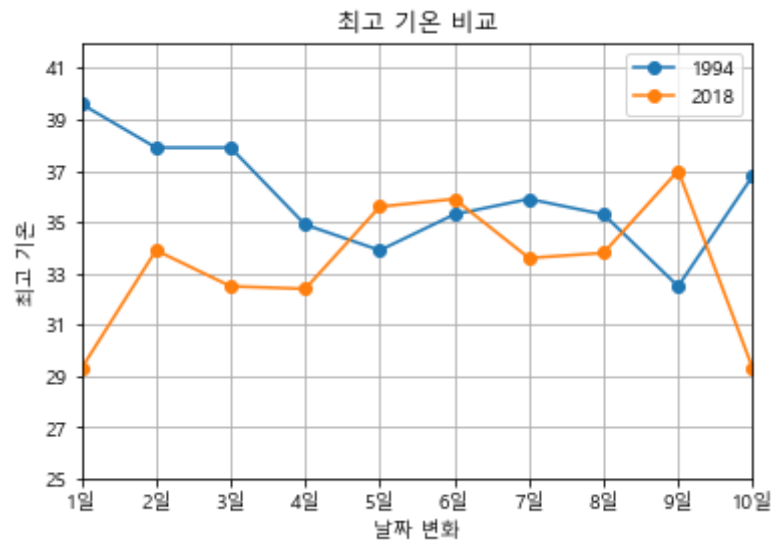
plt.xlabel("날짜 변화")
```

```
plt.ylabel("최고 기온")

# plt.xticks(np.arange(0, 01, 0.5))
plt.xticks(np.arange(0, 10), ("1일", "2일", "3일", "4일", "5일", "6일", "7일", "8일", "9일", "10일"))

plt.ylim(25,42)
plt.yticks(np.arange(25, 42, 2))

plt.legend()
plt.show()
```



In []: