

Matplotlib 모듈

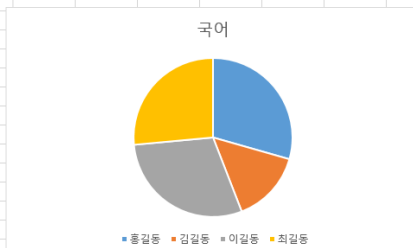
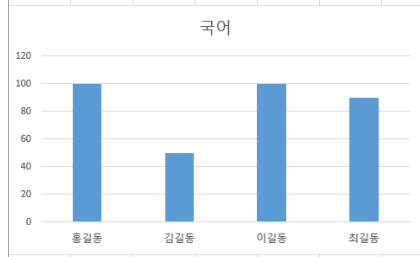
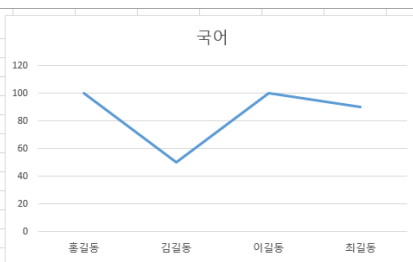


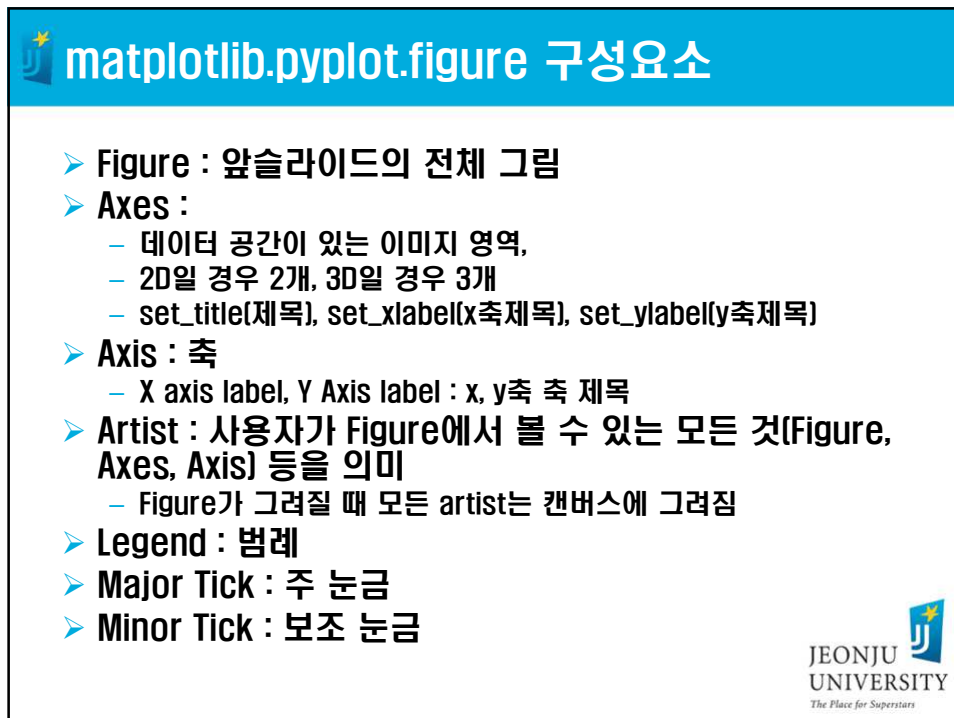
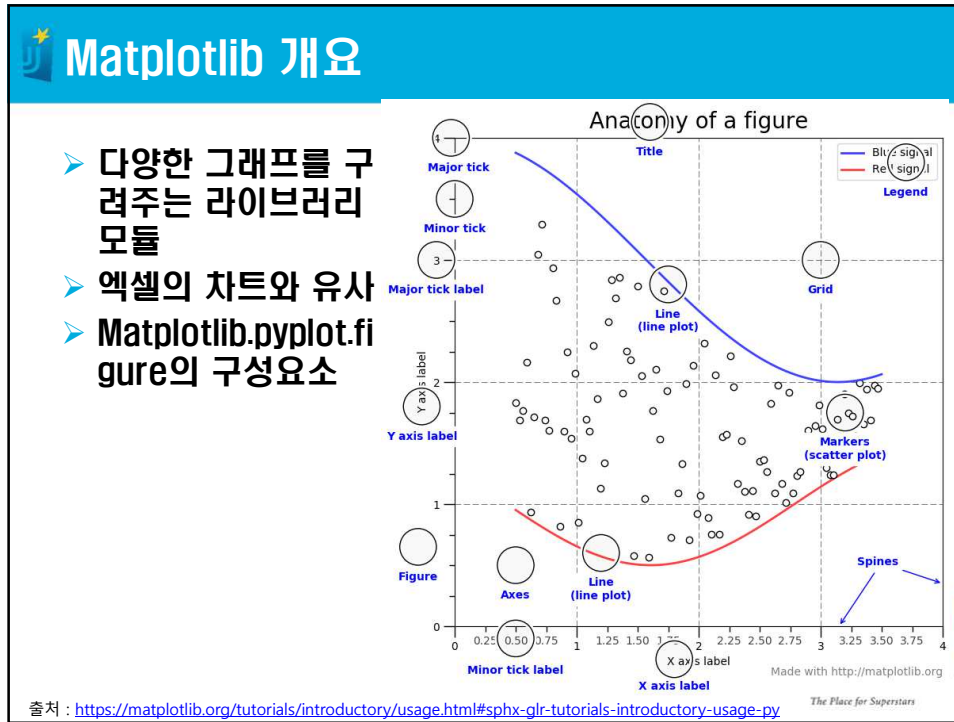
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엑셀 차트

성적처리

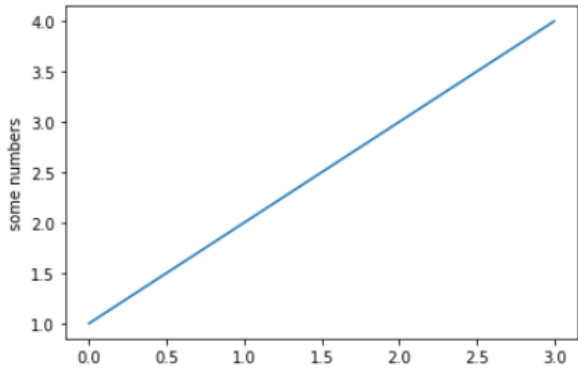
번호	이름	국어	영어	수학
1	홍길동	100	60	60
2	김길동	50	80	40
3	이길동	100	60	100
4	최길동	90	100	90






Matplotlib 모듈 사용 예

```
In [2]: import matplotlib.pyplot as plt
plt.plot([1, 2, 3, 4])
plt.ylabel('some numbers')
plt.show()
```



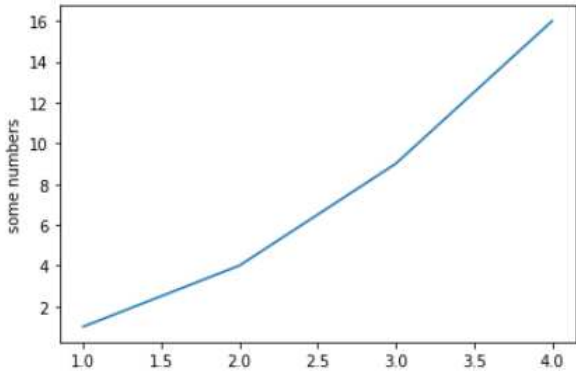
The plot displays a single blue line representing the data points [1, 2, 3, 4]. The y-axis is labeled 'some numbers' and has major ticks at 1.0, 1.5, 2.0, 2.5, 3.0, 3.5, and 4.0. The x-axis has major ticks at 0.0, 0.5, 1.0, 1.5, 2.0, 2.5, and 3.0.




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Matplotlib 모듈 사용 예

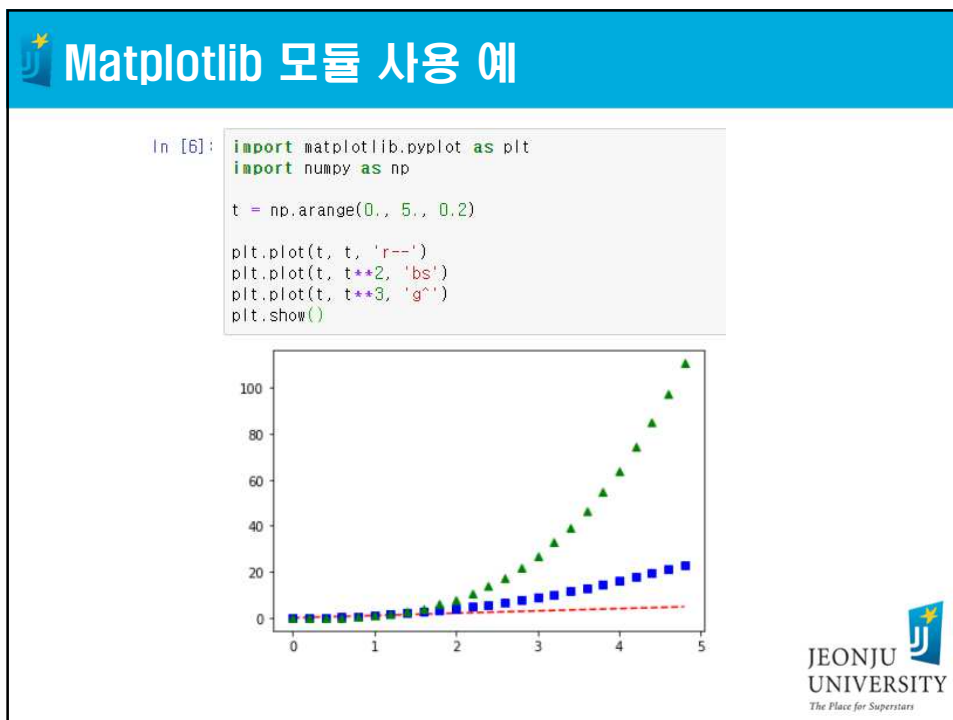
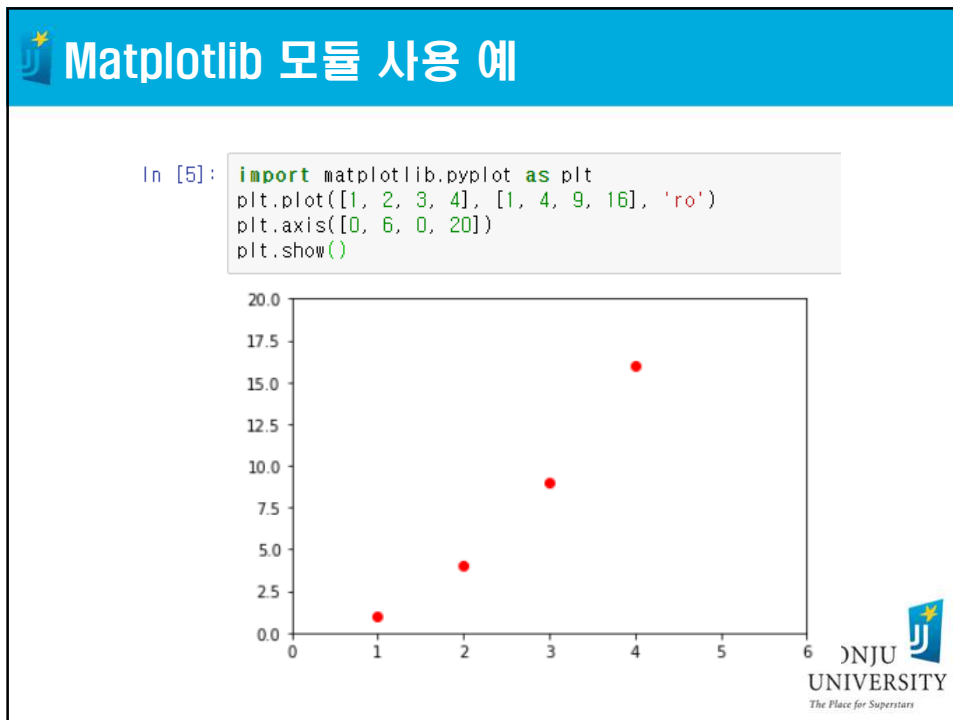
```
In [4]: import matplotlib.pyplot as plt
plt.plot([1, 2, 3, 4], [1, 4, 9, 16])
plt.ylabel('some numbers')
plt.show()
```



The plot displays a blue curve representing the data points [1, 2, 3, 4] and [1, 4, 9, 16]. The y-axis is labeled 'some numbers' and has major ticks at 2, 4, 6, 8, 10, 12, 14, and 16. The x-axis has major ticks at 1.0, 1.5, 2.0, 2.5, 3.0, 3.5, and 4.0.



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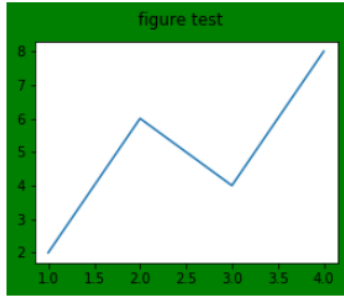
Matplotlib 모듈 사용 예


```

In [18]: import matplotlib.pyplot as plt

x = [1, 2, 3, 4]
y = [2, 6, 4, 8]

fig = plt.figure(figsize=[4,3], facecolor='g')
fig.suptitle('figure test')
plt.plot(x, y)
plt.show()
    
```





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figure() 함수

`fig = matplotlib.pyplot.figure(num=None, figsize=None, dpi=None, facecolor=None, edgecolor=None, frameon=True, FigureClass=<class 'matplotlib.figure.Figure'>, clear=False, **kwargs)`

Property	data type	Description
<code>num</code>		figure 번호를 넣음 입력이 없으면 새로운 figure 생성
<code>figsize = [6.4, 4.8]</code>	float	inch단위의 [width, height], 기본값 [6.4, 4.8]
<code>dpi = 100</code>	int	dpi값을 넣어줌
<code>facecolor = 'w'</code>		배경색, 기본값 흰색 'w'
<code>edgecolor = 'w'</code>		border 색, 기본값 흰색 'w'
<code>frameon = True</code>	bool	False일 경우 figure frame을 그림
<code>FigureClass</code>		사용자 생성 Figure 인스턴스 사용
<code>clear = False</code>	bool	True일 경우 figure가 이미 존재


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Matplotlib.pyplot.plot() 함수

`matplotlib.pyplot.plot(*args, scalex=True, scaley=True, data=None, **kwargs)`

- 1) `matplotlib.pyplot.plot(x, y)`
- 2) `matplotlib.pyplot.plot(x, y, fmt)` <= `fmt` : [marker][line][color]의 조합
- 3) `matplotlib.pyplot.plot(x, y, fmt, data, scalex, scaley, **kwargs)`

사용 예

- 1) `plot(x, y, 'go--', linewidth=2, markersize=12)`
- 2) `plot(x, y, color='green', marker='o', linestyle='dashed',
linewidth=2, markersize=12)`

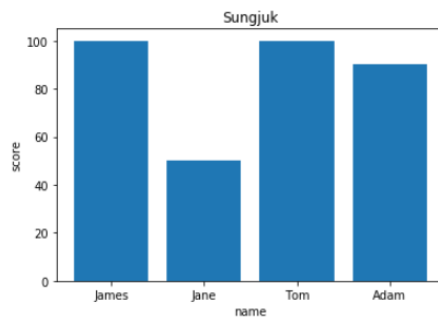
fmt의 문자

Marker		Line Style		Color	
문자	의미	문자	의미	문자	색상
'.'	point marker	'-'	solid line style	'b'	blue
'.'	pixel marker	'--'	dashed line style	'g'	green
'o'	circle marker	'-.'	dash-dot line style	'r'	red
'v'	triangle_down marker	'.'	dotted line style	'c'	cyan
'^'	triangle_up marker			'm'	magenta
'<'	triangle_left marker			'y'	yellow
'>'	triangle_right marker			'k'	black
'1'	tri_down marker			'w'	white
'2'	tri_up marker				
'3'	tri_left marker				
'4'	tri_right marker				
's'	square marker				
'p'	pentagon marker				
'*'	star marker				
'h'	hexagon1 marker				
'H'	hexagon2 marker				
'+'	plus marker				
'x'	x marker				
'D'	diamond marker				
'd'	thin_diamond marker				
' '	vline marker				
'_'	hline marker				

연습

```
In [24]: import matplotlib.pyplot as plt
name = ['James', 'Jane', 'Tom', 'Adam']
kor = [100, 50, 100, 90]

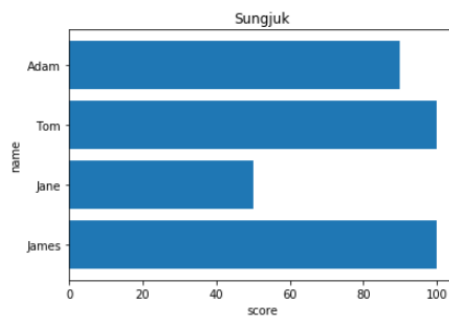
plt.bar(name, kor)
plt.title("Sungjuk")
plt.xlabel('name')
plt.ylabel('score')
plt.show()
```



연습

```
In [26]: import matplotlib.pyplot as plt
name = ['James', 'Jane', 'Tom', 'Adam']
kor = [100, 50, 100, 90]

plt.barh(name, kor)
plt.title("Sungjuk")
plt.xlabel('score')
plt.ylabel('name')
plt.show()
```

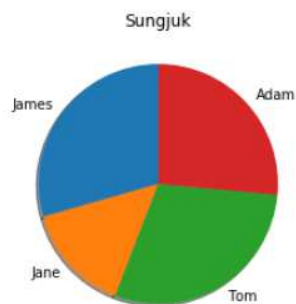


연습

```
In [28]: import matplotlib.pyplot as plt

name = ['James', 'Jane', 'Tom', 'Adam']
kor = [100, 50, 100, 90]

plt.pie(kor, labels=name, shadow=True, startangle=90)
plt.title("Sungjuk")
plt.show()
```



Matplotlib 에서 한글 사용

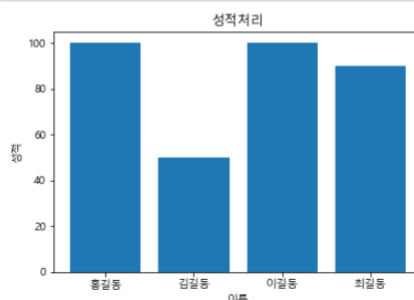
➤ plt.rc('font', family='Malgun Gothic') 추가

```
In [11]: import matplotlib.pyplot as plt

plt.rc('font', family='Malgun Gothic')

name = ['홍길동', '김길동', '이길동', '최길동']
kor = [100, 50, 100, 90]

plt.bar(name, kor)
plt.title("성적처리")
plt.xlabel('이름')
plt.ylabel('성적')
plt.show()
```



Matplotlib 에서 한글 사용

- Windows에 무료 한글 폰트 설치 :
 - <https://hangeul.naver.com/2017/nanum>
- 폰트 다운로드
- 압축 해지 후 전체 파일을 설치

