Plotnine 치트시트

기본 구조

```
from plotnine import ggplot, aes,
geom_point
from plotnine.data import mtcars

# plotnine 기본 구조: 데이터 + 매핑 + 기하
객체
(ggplot(mtcars, aes(x='hp', y='mpg')) +
 geom_point())
```

기하 객체 (Geoms)

산점도 (Scatter Plot)

```
from plotnine import ggplot, aes,
geom_point
from plotnine.data import mtcars

(ggplot(mtcars, aes(x='hp', y='mpg',
color='factor(cyl)', size='wt')) +
 geom_point())
```

라인 플롯 (Line Plot)

```
from plotnine import ggplot, aes,
geom_line, geom_point
import pandas as pd
import numpy as np

df = pd.DataFrame({
    'x': range(1, 11),
    'y': np.cumsum(np.random.randn(10))
})

(ggplot(df, aes(x='x', y='y')) +
 geom_line() +
 geom_point())
```

막대 그래프 (Bar Plot)

```
from plotnine import ggplot, aes,
geom_bar
from plotnine.data import mtcars

(ggplot(mtcars, aes(x='factor(cyl)')) +
 geom_bar(fill="steelblue"))
```

히스토그램 (Histogram)

```
from plotnine import ggplot, aes,
geom_histogram
from plotnine.data import mtcars

(ggplot(mtcars, aes(x='mpg')) +
 geom_histogram(binwidth=3,
fill="darkgreen", color="black"))
```

박스 플롯 (Box Plot)

```
from plotnine import ggplot, aes,
geom_boxplot
from plotnine.data import mtcars

(ggplot(mtcars, aes(x='factor(cyl)',
y='mpg')) +
 geom_boxplot(fill="lightblue"))
```

축 및 레이블

```
from plotnine import ggplot, aes,
geom_point, labs, xlim, ylim
from plotnine.data import mtcars

(ggplot(mtcars, aes(x='hp', y='mpg')) +
 geom_point() +
 labs(
    title="마력과 연비의 관계",
    x="마력 (hp)",
    y="연비 (mpg)",
    caption="데이터 출처: mtcars"
 ) +
 xlim(50, 350) +
 ylim(10, 35))
```

테마 및 색상

```
from plotnine import ggplot, aes,
geom_point, theme_minimal
from plotnine.data import mtcars

(ggplot(mtcars, aes(x='hp', y='mpg',
color='factor(cyl)')) +
 geom_point() +
 theme_minimal())
# scale_color_brewer는 plotnine에 직접적으
로 없으므로, 다른 방법으로 색상 조정
```

패싯 (Faceting)

```
from plotnine import ggplot, aes,
geom_point, facet_wrap
from plotnine.data import mtcars

(ggplot(mtcars, aes(x='hp', y='mpg')) +
 geom_point() +
 facet_wrap('~ factor(cyl)'))
```

플롯 저장

```
from plotnine import ggplot, aes,
geom_point
from plotnine.data import mtcars

p = (ggplot(mtcars, aes(x='hp',
y='mpg')) +
     geom_point())

p.save("my_plotnine.png", width=6,
height=4, dpi=300)
print("my_plotnine.png 저장 완료")
```