일표본 검정 (One sample T-test)

```
Import scipy.stats as
stats
from scipy.stats import
shapiro
```

$$t = \frac{\bar{X} - \mu}{\sqrt{\frac{(s_X)^2}{n_X}}}$$

No

월콕슨의 부호 순위 검정
(Wilcoxon's signed rank test)

stats.Wilcoxon
(X.variable - μ,
alternative = 'greater' or
'less' or
'two-sided')

Yes

stats.ttest_1samp(
X.variable, popmean = μ)

대응 2표본 검정 (Paired test)

```
Import scipy.stats as
stats
from scipy.stats import
shapiro
```

$$t = \frac{\overline{X\_pre} - \overline{X\_post}}{\sqrt{\frac{(s_X)^2}{n_X}}}$$

No

월콕슨의 부호 순위 검정
(Wilcoxon's signed rank test)

```
stats.Wilcoxon
(X_pre.variable , X_post.variable ,
 alternative = 'greater' or
               'less'    or
               'two-sided' )
```

Yes

```
stats.ttest_rel( X_pre.variable, X_post.variable)
```

독립 2표본 검정 (Two sample test)

```
Import scipy.stats as
stats
from scipy.stats import
shapiro
```

정규성 검정

No

윌콕슨의 부호 순위 검정
(Wilcoxon's signed rank test)

```
stats.Wilcoxon(X1, X2 ,
alternative = 'greater' or
                'less'     or
                'two-sided' )
```

Yes

$$t = \frac{A - B}{\sqrt{\frac{(s_A)^2}{n_A} + \frac{(s_B)^2}{n_B}}}$$

등분산 검정

No

```
stats.ttest_ind( X1, X2,
equal_var = False)
```

Yes

```
stats.ttest_ind( X1, X2,  equal_var = True)
```