S.No.	Scenario	Test	Python Function
1	One Sample Test for Population Mean assuming Normal Distribution of Population	One Sample t-test	scipy.stats.ttest_1samp
2	Paired/Related Samples Comparison of Means assuming Normal Distribution of Population	Paired t-test	scipy.stats.ttest_rel
3	2 Independent Samples Test for Comparison of Variances	Bartlett's Test	scipy.stats.bartlett
4	2 Independent Samples Test for Comparison of Means assuming Normal Distribution of Population	Independent Samples t-test	scipy.stats.ttest_ind
5	2 Independent Samples Test for Comparison of Means	Mann-Whitney's U test	scipy.stats.mannwhitneyu
6	Comparison of means of different populations assuming Normal Distribution of Population	One-Way Analysis of Variance (1-way ANOVA)	statsmodels.formula.api.ols, statsmodels.stats.anova.anova_lm
7	Pair-wise Comparisons Test assuming Normal Distribution of Population	Post hoc Test: Tukey's HSD Test	statsmodels.stats.multicomp.pairwis e_tukeyhsd
8	Test for Independence of Attributes	Chi-Square Test	scipy.stats.chi2_contingency
4 5 6	Comparison of Variances  2 Independent Samples Test for Comparison of Means assuming Normal Distribution of Population  2 Independent Samples Test for Comparison of Means Comparison of means of different populations assuming Normal Distribution of Population  Pair-wise Comparisons Test assuming Normal Distribution of Population	Independent Samples t-test  Mann-Whitney's U test One-Way Analysis of Variance (1-way ANOVA) Post hoc Test: Tukey's HSD Test	scipy.stats.ttest_ind scipy.stats.mannwhitneyu statsmodels.formula.api.ols, statsmodels.stats.anova.anova_li statsmodels.stats.multicomp.pair e_tukeyhsd