Formulate the Hypothesis

Null Hypothesis H0	hypothesis that is being tested (and trying to be disproved)
Alternate Hypothesis H1	represents the alternative value

Hypothesis Testing for Mean of 1-Sample

one sample t-test (μ0 (given) is population mean; μ is computed sample mean)	H0 : μ = μ0, H1 : μ != μ0	t.test(sample_vector , mu=populatio-n_mean, alternative="two.sided")	Compare p-value with ***α*** to check if H0 is rejected or not; Check test-statistic z if H0 is true;
test for proportion (p (given) is population mean; μ is computed sample mean)	H0 : μ = p, H1 : μ != p	prop.test(true_proportion, n_proportion, p=population_mean, alternative = "less")	Compare p-value with ***α*** to check if H0 is rejected or not; Check test-statistic z if H0 is true;

Test for Normality

Quantile Quantile Plot		qqPlot-(vector)	Check curve of qqplot
Shapiro-Wilks test	H0 : x = N(μ,σ) and H1 : x != N(μ,σ)	shapir-o.test	Check p-value obtained from the test is < 0.05 then we reject H0 and assume the data is not normally distributed.

Comparing Variances

Fisher's F test	H0: the variances are the same; H1: they are different	var.test(vectorA, vectorB)	Check p-value; Check ratio if H0 is true.