

STAT 100 - Important Code for Week 9 (Theory-Based Inference)

	Mean	Proportion	Difference in means	Difference in proportions	Correlation
Distribution	<i>t</i> -distribution	Normal distribution	<i>t</i> -distribution	Normal distribution	<i>t</i> -distribution
Assumptions for CLT	At least 30 observations	At least 10 successes and 10 failures	At least 30 observations in each category	At least 10 successes and 10 failures in each category	At least 30 observations
	Random sampling (i.e., cases are independent)				
Template code for hypothesis testing	<code>t_test(DATASET, response = RESPONSE_VARIABLE, mu = NULL_VAL, alternative = "SIDE_OF_TEST")</code>	<code>prop_test(DATASET, response = RESPONSE_VARIABLE, success = "CAT_OF_INTEREST", p = NULL_VAL, z = TRUE, alternative = "SIDE_OF_TEST")</code>	<code>t_test(DATASET, Y ~ X, order = c("CAT_OF_EXPL_VARIABLE", "OTHER_CATEGORIES"), alternative = "SIDE_OF_TEST")</code>	<code>prop_test(DATASET, Y ~ X, order = c("CAT_OF_EXPL_VARIABLE", "OTHER_CATEGORIES"), z = TRUE, success = "CAT_OF_INTEREST", alternative = "SIDE_OF_TEST")</code>	<code>cor.test(~ Y + X, data = DATASET, alternative = "SIDE_OF_TEST")</code>
Example code for hypothesis testing	<code>t_test(FloridaLakes, response = pH, mu = 7, alternative = "two.sided")</code>	<code>prop_test(esp, response = guess, success = "correct", p = 0.25, z = TRUE, alternative = "greater")</code>	<code>t_test(ACS_adults, HoursWk ~ Married, order = c("1", "0"))</code>	<code>prop_test(ACS_adults, MarriedCat ~ USCitizenCat, order = c("Citizen", "Not citizen"), z = TRUE, success = "Yes")</code>	<code>cor.test(~ HoursWk + Age, data = ACS_adults, alternative = "less")</code>
Template code for confidence intervals	<code>t_test(DATASET, response = RESPONSE_VARIABLE, mu = NULL_VAL, conf_level = CONF_LEVEL)</code>	<code>prop_test(DATASET, response = RESPONSE_VARIABLE, success = "CAT_OF_INTEREST", p = NULL_VAL, z = TRUE, conf_level = CONF_LEVEL)</code>	<code>t_test(DATASET, Y ~ X, order = c("CAT_OF_EXPL_VARIABLE", "OTHER_CATEGORIES"), conf_level = CONF_LEVEL)</code>	<code>prop_test(DATASET, Y ~ X, order = c("CAT_OF_EXPL_VARIABLE", "OTHER_CATEGORIES"), z = TRUE, success = "CAT_OF_INTEREST", conf_level = CONF_LEVEL)</code>	<code>cor.test(~ Y + X, data = DATASET)</code>

Example code for confidence intervals	<pre><i>t_test(adelies, response = flipper_length_ mm, mu = 191, conf_level = 0.99)</i></pre>	<pre><i>prop_test(mcas, response = white_less50, success = "TRUE", p = 0.5, z = TRUE, conf_level = 0.90)</i></pre>	<pre><i>t_test(mcas, econ_dis ~ white_less50, order = c("TRUE", "FALSE"), conf_level = 0.95)</i></pre>	<pre><i>prop_test(ACS_ adults, MarriedCat ~ USCitizenCat, order = c("Citizen", "Not citizen"), z = TRUE, success = "Yes", conf_level = 0.95)</i></pre>	<pre><i>cor.test(~ HoursWk + Age, data = ACS_adults)</i></pre>
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