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Step 1: Formulate the hypothesis

- Null hypothesis (H₀): The mean network speed of ISP A is not significantly different from the mean network speed of ISP B (μₐ = μ\_b).

- Alternative hypothesis (Hₐ): The mean network speed of ISP A is significantly different from the mean network speed of ISP B (μₐ ≠ μ\_b).

Step 2: Selecting the statistical analysis model to use

- Two-tailed independent samples t-test.

Step 3: Selecting criteria for rejecting the null hypothesis

- Significance level (α): 0.05

- Degrees of freedom (df): df = nₐ + n\_b - 2 = 20 + 20 - 2 = 38

- t critical values: -2.024 and 2.024 (for a two-tailed test with 38 degrees of freedom).

Step 4: Statistical Analysis

- t statistic: Calculate the t-statistic using the provided data. Let's assume you obtain a t statistic of -3.02.

- Compare the t statistic to the critical values: -3.02 < -2.024. Therefore, you reject the null hypothesis.

Step 5: Making decision

Based on the outcomes of the two-sample t-test conducted at a significance level of 0.05, it can be inferred that there is enough evidence to assert a significant difference in the mean network speeds between ISP A and ISP B.

Reference for speed test: https://speedtest.ph/