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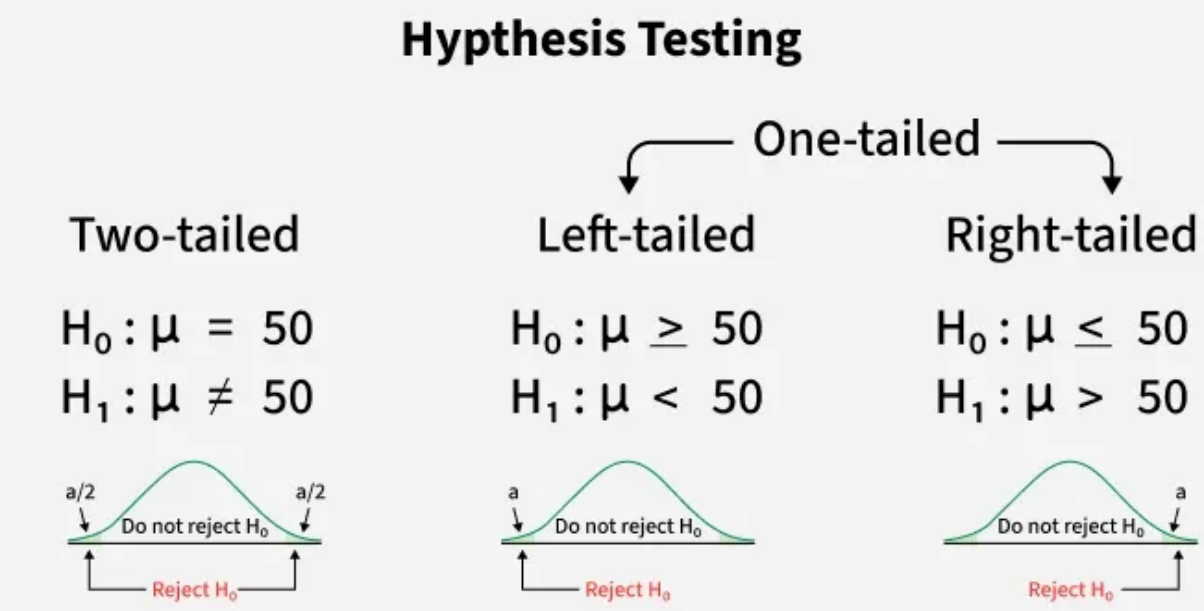
Types of Hypothesis Testing

It involves basically two types of testing:



Types of Hypothesis testing

1. One-Tailed Test

Used when we expect a change in only one direction either up or down, but not both. For example, if testing whether a new algorithm improves accuracy, we only check if accuracy increases.

There are two types of one-tailed test:

- **Left-Tailed (Left-Sided) Test:** Checks if the value is less than expected. Example: H_0:$\mu \geq 50 \mu \geq 50$ and H_1: $\mu < 50 \mu < 50$
- **Right-Tailed (Right-Sided) Test**: Checks if the value is greater than expected. Example: H_0 : $\mu \leq 50 \mu \leq 50$ and H_1:$\mu > 50 \mu > 50$

2. Two-Tailed Test

Used when we want to see if there is a difference in either direction higher or lower. For example, testing if a marketing strategy affects sales, whether it goes up or down

Example: H_0: $\mu = \mu =$ 50 and H_1: $\mu \neq 50 \mu \square = 50$