**Q**:In t-test the condition is population standard deviation is not known, why cant we calculate the standard dev of population?

In a t-test, the condition is that the population standard deviation is not known because:

1. **Practicality:** In many real-world scenarios, it's not feasible to obtain data from the entire population. Instead, we often work with samples from the population. Calculating the population standard deviation requires data from the entire population, which is often impractical or impossible to obtain.
2. **Statistical Inference:** T-tests are primarily used for making inferences about a population based on sample data. Since we typically don't have access to the entire population, we use sample statistics, such as the sample mean and sample standard deviation, to estimate population parameters. The t-distribution and t-test are specifically designed to work with sample data and provide valid inferences even when the population standard deviation is unknown.

So, in short, we use the t-test when the population standard deviation is not known because it's a practical and statistically valid method for making inferences based on sample data.