**Summary**

So what did you learn in this session?

1. Hypothesis — a claim or an assumption that you make about one or more population parameters
2. Types of hypothesis:
   * **Null hypothesis** (H₀) - Makes an assumption about the status quo  
                                          - Always contains the symbols ‘=’, ‘≤’ or ‘≥’
   * **Alternate hypothesis** (H₁) - Challenges and complements the null hypothesis

                                                                  - Always contains the symbols ‘≠’, ‘<’ or ‘>’

1. Types of tests:
   * **Two-tailed test**- The critical region lies on both sides of the distribution  
                                  - The alternate hypothesis contains the ≠ sign
   * **Lower-tailed test**- The critical region lies on the left side of the distribution  
                                     - The alternate hypothesis contains the < sign
   * **Upper-tailed test**- The critical region lies on the right side of the distribution

                                                 - The alternate hypothesis contains the > sign

1. Making a decision - Critical value method:
   * Calculate the value of Zc from the given value of α (significance level)
   * Calculate the critical values (UCV and LCV) from the value of Zc
   * Make the decision on the basis of the value of the sample mean ¯x with respect to the critical values (UCV AND LCV

**Summary**

So what did you learn in this session?

1. Making a decision - p-value method:

* Calculate the value of Z-score for the sample mean point on the distribution
* Calculate the p-value from the cumulative probability for the given z-score using the z-table
* Make the decision on the basis of the p-value with respect to the given value of α (signIficance level)

1. Types of errors:

* **Type-I error**    - Occurs when you reject a null hypothesis even when it is true  
                            - Its probability is represented by α
* **Type-II error** - Occurs when you fail to reject the null hypotheses even though it is false

                                   - Its probability is represented by β