ASSIGNMENT – DAY 5

3rd July

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**To find the number of L and XL t-shirts required for a company of 100,000 employees:**

# Solution :

## Assumptions :

Sample of 100 employees are taken with SD 10. A linear correlation between weight and size of t-shirt is assumed.

Confidence Interval is **95%**.

The average weight of employees is assumed to be **60kg**.

## Calculations

Since a sample is taken from the population and the SD is of the sample, T-test is being performed here.

Since there is no need for a value below the mean, this will be a **one-tail test**.

**Sample size(n)**: 100

**Mean(s)**: 60

**SD(σ)**: 10

**CI will show the value beyond which XL is required,**

CI = S+ Zα/2 × σ/√n

***D.O.F = n-1 = 99 , since the table doesn’t have a value for 99 , df Is taken for 100 : 1.984***

60+1.984(10/√100)

= **62**; approximately

Hence 62% of the total sample is L .Transferring this to the population of 100,000 . We can assume that we need approximately **68000 L t-shirts** and **32000 XL t-shirts**

*Please review and let me know if I have made any wrong assumptions , also if you can share the appropriate answer/ method to address this problem statement , that would be helpful.*