* Central Limit theorem

- It states that distribution of sample means approximates a normal distribution as the sample size gets larger, regardless of the distribution type of population.
- Sample size must be atleast 30.

→ If we choose 'm' samples using any sampling technique from a given population with '$\bar{x}_m$' mean and plot these means then it will yield a normal distribution regardless of the nature of distribution of population.

→ Larger than sample size, closer the distribution towards normal distribution.

Say, we have few samples. $(S_1, S_2, \ldots S_m)$ with each having some random elements giving means $(\bar{x}_1, \bar{x}_2, \ldots, \bar{x}_m)$. Then these means are normally distributed.

$S_1 \rightarrow \{x_1, x_2, \ldots x_m\} \rightarrow \bar{x}_1$

$S_2 \rightarrow \{x_4, x_6, x_9, \ldots x_{11}\} \rightarrow \bar{x}_2$

$\vdots \qquad\qquad \vdots \qquad\qquad \vdots$

$S_m \rightarrow \{x_3, x_5, x_7, \ldots, x_{m-1}\} \rightarrow \bar{x}_m$