Normalization Methodology

1. The average of scores of each batch is calculated first. The average of marks is calculated as mentioned below.

$$\bar{x} = \frac{sum\ of\ marks\ of\ all\ candidates\ in\ each\ batch}{Number\ of\ candidates\ in\ each\ batch}$$

2. The batch with the highest average is considered as Base Batch. All other batches will be normalized against this Base Batch.

3. The **Standard Deviation** (σ) of each batch is calculated. The formula to calculate the Standard Deviation is as mentioned below:

$$\sigma = \sqrt{\frac{\sum(x - \bar{x})^2}{N - 1}}$$

Where:
$\sigma = Standard\ Deviation$
$x = score\ of\ the\ candiate$
$\bar{x} = Mean\ of\ scores\ of\ all\ the\ candidates\ in\ the\ batch$
$N = Number\ of\ candidates\ in\ the\ batch$

4. Assuming that Batch-1 is to be normalized against Batch-2 (Base Batch), then the normalized score of candidate is calculated using the following formula:

$$X_n = \frac{S_2}{S_1} * (X - X_{avg}) + Y_{avg}$$

Where:
$S_1 = Standard\ Deviation\ for\ Batch - 1$
$S_2 = Standard\ Deviation\ for\ Batch - 2\ (Base\ Batch)$
$X = score\ of\ the\ candiate$
$X_{avg} = Average\ score\ of\ candidate's\ batch$
$Y_{avg} = Average\ score\ of\ Base\ Batch$
$X_n = Normalized\ score\ of\ the\ candidate$

The same formula will be used in case there are more than two batches for a post.

5. The following points will be considered during scheduling of candidates.
   i. Batches will have nearly equal number of candidates scheduled
   ii. Equal distribution of candidates as per their categories.