Measures of Standard Scores

- Also known as z-scores or standard deviations from the mean, are statistical measures.
- Information about how individual data points relate to the mean and standard deviation of a dataset.
- Number of standard deviations a particular data point is away from the mean.
- Formula for calculating the z-score for a specific data point is:
  z = (x - mu) / sigma
  Where:
    - z is the z-score
    - x is the individual data point
    - mu is the mean of the dataset
    - sigma is the standard deviation of the dataset

Key Points about Measures of Standard Scores

1. Interpretation:
   - A positive z-score indicates that a data point is above the mean.
     - Negative z-score indicates that it is below the mean.
   - Magnitude of the z-score represents the distance from the mean in terms of standard deviations.

2. Standardized Comparison:
   - By transforming individual data points into z-scores,
     - Different datasets with varying means and standard deviations
     - Can be standardized and compared on a common scale.

3. Outliers:
   - Z-scores can be used to identify outliers.
   - Data points with z-scores that fall outside a specific range.

4. Percentiles:
   - Z-scores can be used to determine the percentile rank of a data point in a distribution.
   - Percentile rank corresponds to the area,
     - Under the curve of a standard normal distribution.

5. Normal Distribution:
   - When a dataset follows a normal distribution,
   - 68% of the data falls within one standard deviation of the mean,
   - 95% falls within two standard deviations,
   - 99.7% falls within three standard deviations,

Measures of standard scores are valuable in statistical analysis, hypothesis testing and comparing data across different distributions or populations.
They provide a standardized way to understand and interpret individual data points in relation to the mean and standard deviation of the dataset.

The resulting standard scores represent the number of standard deviations each salary value is away from the mean.
A positive z-score tells us a value above the mean, while a negative z-score indicates a value below the mean.
A z-score of zero corresponds to a value equal to the mean.