Data 110- Google Sheet-Descriptive Statistics

Using Formulas for Descriptive Statistics in Google Sheets

1. Calculating the Mean (Average)

- **Function**: `=AVERAGE(range)`
- **Explanation**: This function calculates the mean of the numbers in a cell range.
- **Example**: If you have numbers in cells A1 through A5, you can calculate the mean by using `=AVERAGE(A1:A5)`.

2. Calculating the Median

- **Function**: `=MEDIAN(range)`
- **Explanation**: This function finds the median value in a set of numbers, which is the middle number in a group of numbers.
- **Example**: For numbers in cells A1 through A5, use `=MEDIAN(A1:A5)` to find the median.

3. Calculating the Mode

- **Function**: `=MODE(range)`
- **Explanation**: This function returns the most frequently occurring number in a set of numbers.
- **Example**: If you want to find the mode of numbers in cells A1 through A5, use `=MODE(A1:A5)`.

4. Calculating the Standard Deviation

- **Function**: `=STDEV(range)`
- **Explanation**: This function measures the amount of variation or dispersion of a set of values. A low standard deviation means that the values tend to be close to the mean, while a high standard deviation means the values are spread out over a wider range.
- **Example**: To calculate the standard deviation of numbers in A1 through A5, use `=STDEV(A1:A5)`.

Using COUNTIF for Frequency Distribution

Function: `=COUNTIF(range, criterion)`

Explanation: This function counts the number of cells within a range that meet a single condition. It's particularly useful for creating frequency distributions.
Example:
Suppose you have a list of student grades in cells B1 through B20.
You want to count how many students scored 90 or above.
You can use `=COUNTIF(B1:B20, ">=90")`.

Using SUMIF for Conditional Summation

Function: `=SUMIF(range, criterion, [sum_range])`
Explanation: This function sums the values in a range that meet a specified condition. It's useful when you want to sum values conditionally.
Example:
Suppose you have a list of student grades in cells B1 through B20 and their corresponding number of assignments in cells C1 through C20.
You want to sum the number of assignments for students who scored 90 or above.
You can use `=SUMIF(B1:B20, ">=90", C1:C20)`.

Using AVERAGEIF for Conditional Averaging

Function: `=AVERAGEIF(range, criterion, [average_range])`
Explanation: This function calculates the average (mean) of the numbers in a range that meet a specified criterion. It's ideal for analyzing data subsets.
Example:
Suppose you have a list of student grades in cells B1 through B20 and their corresponding hours of study in cells C1 through C20.
You want to calculate the average hours of study for students who scored 90 or above.
You can use `=AVERAGEIF(B1:B20, ">=90", C1:C20)`.