Assignment - 6

Explain CAGR with examples:

CAGR (Compound Annual Growth Rate) is the rate at which an investment grows annually, assuming the profits are reinvested at the end of each year. It smooths out the growth rate over a period, accounting for volatility and showing a steady annual rate of growth from the beginning to the end of the period. The formula for CAGR is.

$$CAGR = \left(\frac{\text{Ending Value}}{\text{Beginning Value}} \right)^{1/n} - 1$$

Ending Value = Value of the investment at the end of the period.

Beginning Value = Value of the investment at the start of the period.

n = Number of years.

Example 1: Investment Growth.

Let's say you invested $10,000 in a stock in 2019 and by 2023 the value of your investment has grown to $20,000. To calculate the CAGR.

Beginning Value (2019) = $10,000

Ending Value (2023) = $20,000

Number of Years(n) = 4

$$CAGR = \left(\frac{20000}{10000}\right)^{\frac{1}{4}} - 1 = (2)^{0.25} - 1$$

$$= 18.92\%$$

So, the CAGR is 18.92%. meaning the investment grew by about 18.92% Per Year on average over the 4-Year Period.