**Mutual Funds Bucket: Case Study**

The dataset consists of daily closing stock prices of 50 major Indian companies from sectors like banking, technology, consumer goods, and automotive. Each company is represented by a ticker symbol (e.g., RELIANCE.NS, ICICIBANK.NS), and the dataset includes the following features:

* **Date**: The date on which the stock price is recorded.
* **Closing Price**: The adjusted closing price for each stock on that particular date.
* **Companies**: A total of 50 top Indian companies are represented, covering a range of sectors like banking (HDFC Bank, ICICI Bank), technology (TCS, Infosys), consumer goods (Hindustan Unilever, ITC), automotive (Tata Motors, Bajaj Auto), and others.

#### Problem

The goal is to develop a Mutual Funds Investment Bucket that is optimized for long-term investments by balancing risk and returns. This involves selecting companies that provide consistent growth and moderate returns while minimizing exposure to volatility. Specifically, the objectives are:

1. **Stock Selection**: Identify stocks with **high ROI** and **low volatility**, which will form the core of the mutual funds portfolio.
2. **Performance Evaluation**: Use metrics such as **volatility (standard deviation)** and **expected ROI** to assess which stocks are optimal for inclusion in the portfolio.
3. **Investment Strategy**: Simulate the expected future value of investments based on monthly contributions over different time horizons (e.g., 1 year, 3 years, 5 years, and 10 years).
4. **Risk-Reward Balance**: Develop a strategy that ensures a **balance between risk and reward**, targeting long-term investors who seek stable, compounded growth over several years.

**SOLUTUTION**

## Creating a Mutual Fund Plan with Python

A mutual fund plan is created by selecting the stocks where an investor can benefit in the long term. Here’s the process we can follow to create a mutual fund plan:

1. Step 1: Gather historical stock data, such as **closing prices** and **growth trends** over time.
2. Step 2: Calculate key metrics like **Return on Investment (ROI)** and **volatility** (risk) to understand how each stock has performed historically.
3. Step 3: Choose stocks that have a **high ROI** and **low volatility** to ensure a balance between **risk and reward**.
4. Step 4: Calculate the **future value** of monthly investments based on the expected ROI of the selected stocks.