Name: **UIN:**

Assignment #1

Randomly pick up 5 stocks satisfying the following category ranges:

one stock with current market capital size of around $1 Trillion, APPL ~ 3T

the second one with current market capital size of around $100 Billion, TXN ~ 160B

the third one with current market capital size of around $10 Billion, GRMN ~ 20B

the fourth one with current market capital size of around $1 billion, HLIT ~ 1.8B

and the last one with current market capital size of around $100 Million. QMCO ~ 100M

We use 6/30/23 as the date to measure their market capital size.

Do the following:

1. Download their daily return data for the last 20 years (i.e., the data starts from 7/1/2003 to 6/30/2023).
2. Compute the **realized average annual returns** and **annual standard deviations**
    a. First, compute the quantities using annualize returns
    b. Second, compute the quantities using daily returns then convert them to annual ones by applying formula: and
    c. Plot the distributions of them using daily data (you need bin the obtained daily returns into different value ranges. For example, you may choose value ranges such as -100% to -90%, -90% to -80%, …, 90% to 100% and above 100%, and count how many observed returns allocated in each of these bins).
    d. Plot their cumulative returns as a function of time.