COMPARING INVESTMENT STRATEGIES

You are tasked with comparing two investment strategies that are described below:

1. **Buy and Hold:** In this strategy, you invest \$1,000 every month into a stock of your choice and hold the investment till the expiry of the test period (30 years by default). You do not care whether the market is going up or down but invest consistently the same fixed amount.

2. **Active Trading:** In this strategy, you check the market signal before investing. The strategy can be summarized as:
   At the beginning of every month:
       If (technical signal is buy)
           Invest \$1,000 in the stock market
       Else if (technical signal is sell)
           Put \$1,000 in a savings account with 0% APR i.e. no interest

   Further, if the signal ever switches from buy to sell, transfer all your money to savings account with 0% APR, and if the signal switches from sell to buy, transfer all the money back from savings account to the stock market.
   You are free to choose your technical signal. One good example is Simple Moving Average Crossover, which flashes a buy signal if stock price crosses over above SMA(n) and indicates a sell signal if stock price crosses below the SMA(n).

You are to run a simulation for the past 30 years and report on which strategy gives you the best returns. You can assume that you start with a zero equity and follow the strategies mentioned above by checking on your stock on the first trading day of every month. You should output the following metrics for both strategies:

- The total equity at the end of 30 years
- The annual percent return
- A plot showing the growth of your money using both the strategies