```
% Author: Amber Kuhn
% Final Project Algorithm 2
% Date: 2/23/2023

% Buy and sell at defined intervals of 17 days.

close all
clear all
clc

% load the data into the program
load StockData
format bank


% Set up variables
bank = 1000;
portfolio = [0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0];

% Define what days you want to check the stocks
for day = 1:17:6067
    % create a random order to check stocks
    y = randperm(28);

    % Set up for loop to go through each company
    for i = 1:28
        % find the price of stocks for the specific company
        com = Stocks.(Companies(y(i),4));
        price = com(day,1);
        % Set up a double to track the price of each company stock for that
        % day
        day_p(i)=price;

        % Check to see if the price exists and or if the day is less than
        % 7 days from the start, Dont buy or sell if this is the case
        if (isnan(price))||(day<=7)
            continue
        end

        % Use if statement for the logic behind selling, buying, and
        % holding stocks
        % If the price for the current day is less than the price 7 days
        % prior then sell one stock from that company and add price to bank.
        if (price < com(day-7,1))&&(portfolio(y(i))>=1)
            bank = bank + price;
            portfolio(y(i))=portfolio(y(i))-1;

        % Else if the price is more than the price 7 days prior to the day
        % then buys stocks and subtracts price from bank account
        elseif (price > com(day-7,1))&&(bank>=price)
            bank = bank - price;
            portfolio(y(i)) = portfolio(y(i)) + 1;
```

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        % Else if the price or portfolio does not stay with in these bounds
        % then make no change
        else
            bank = bank;
            portfolio = portfolio;
        end

    end
    % Calculate the net amount of money "owned"
    net = sum(portfolio.* day_p)+bank;

    % Create figures for the bank amount over time, net amount over time
    % and number of stocks owned at one time for each company (4
    % figures)
    figure(1)
    plot(Dates(day),net,'r.')
    hold on

    figure(2)
    plot(Dates(day),bank,'k.')
    hold on

    % Use a for loop to only put 7 companies on each figure for number of
    % stocks owned at one time
    for l = 1:length(portfolio)
        if l<=7
            figure(3)
            plot(Dates(day), portfolio(l), '.')
            hold on
        elseif (l>7)&&(l<=14)
            figure(4)
            plot(Dates(day), portfolio(l), '.')
            hold on
        elseif (l>14)&&(l<=21)
            figure(5)
            plot(Dates(day), portfolio(l), '.')
            hold on
        else
            figure(6)
            plot(Dates(day), portfolio(l), '.')
            hold on
        end
end

end

% Add labels to the figures
figure(1)
ylabel('Net Amount')
xlabel('Date')
title('Net Amount over time')

figure(2)
```

```
xlabel('Day')
ylabel('Amount in Bank')
title('Amount in Bank every 17 days')

figure(3)
xlabel('Date')
ylabel('Number of stocks owned')
title('Stocks Owned Companies 1-7')
legend(Companies(1:7,1), 'Location','best')

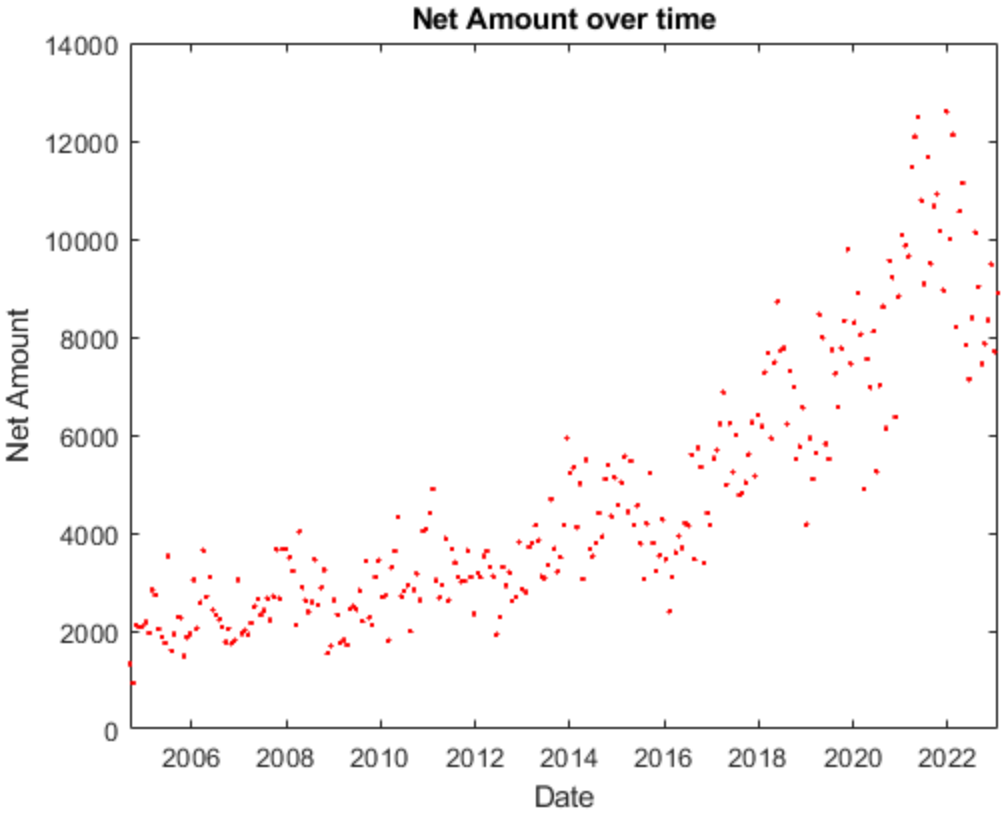
figure(4)
xlabel('Date')
ylabel('Number of stocks owned')
title('Stocks Owned Companies 8-14')
legend(Companies(8:14,1), 'Location','best')

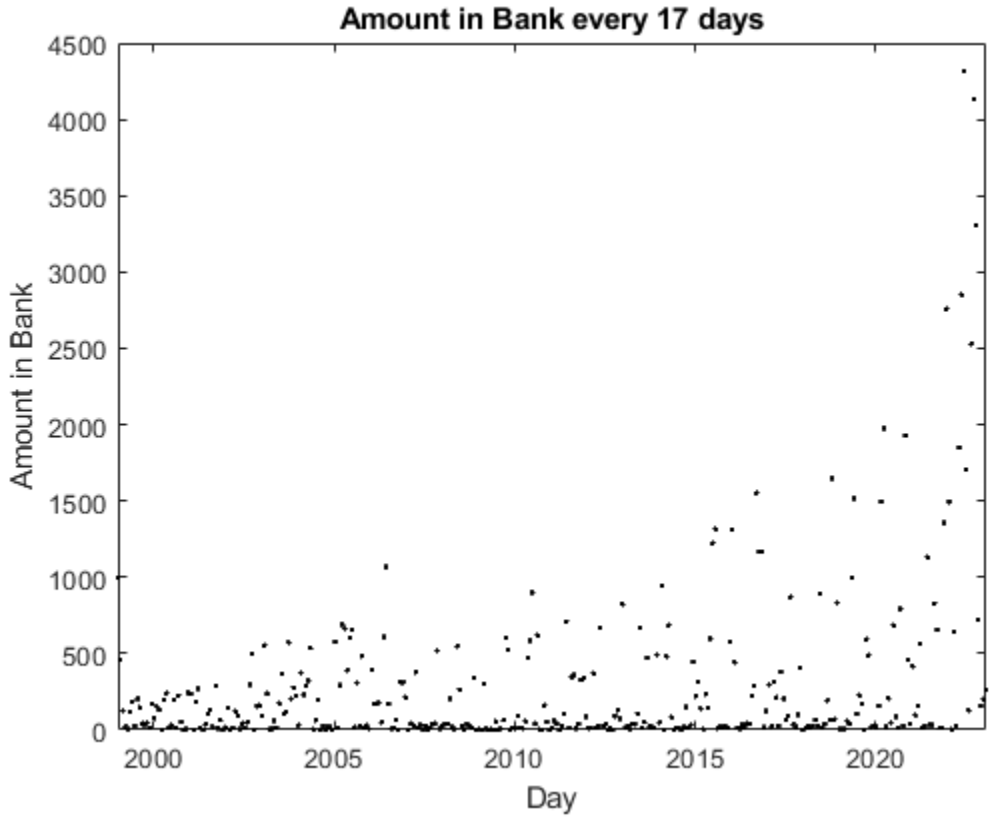
figure(5)
xlabel('Date')
ylabel('Number of stocks owned')
title('Stocks Owned Companies 15-21')
legend(Companies(15:21,1), 'Location','best')

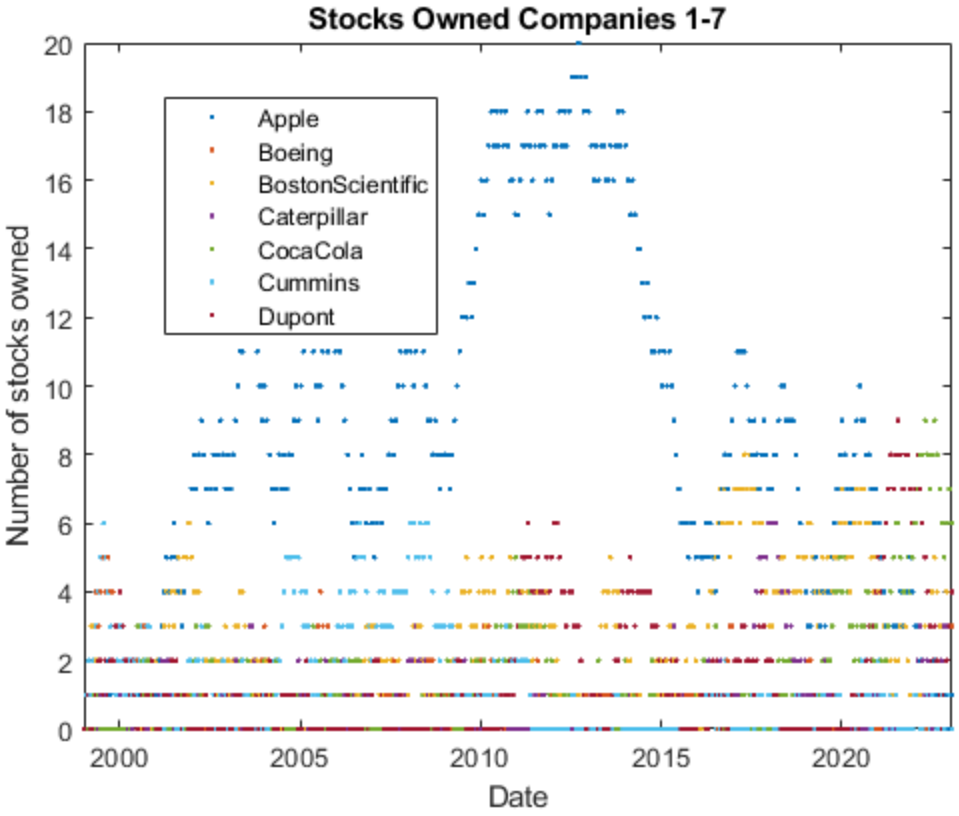
figure(6)
xlabel('Date')
ylabel('Number of stocks owned')
title('Stocks Owned Companies 22-28')
legend(Companies(22:28,1), 'Location','best')

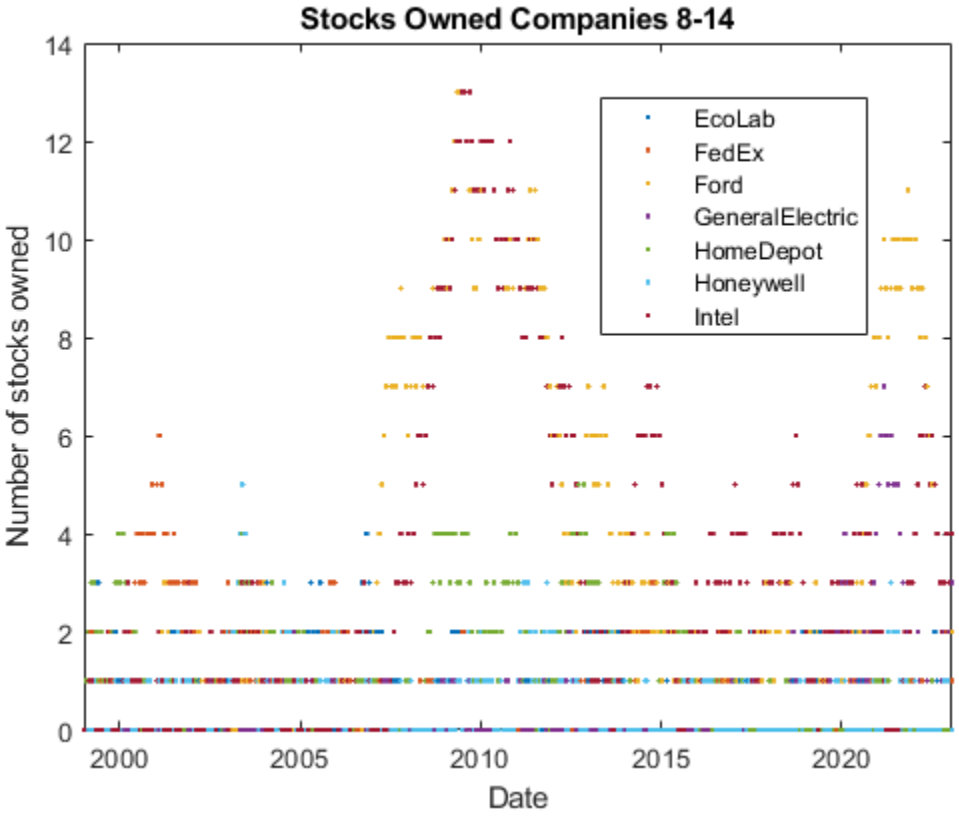
% Print out final results
fprintf('Ammount in Bank: $%.00f\n', bank)
fprintf('Net amount: $%.00f\n',net)
fprintf('%% Gain: %.00f%%\n',((net/1000 -1 )* 100))
```

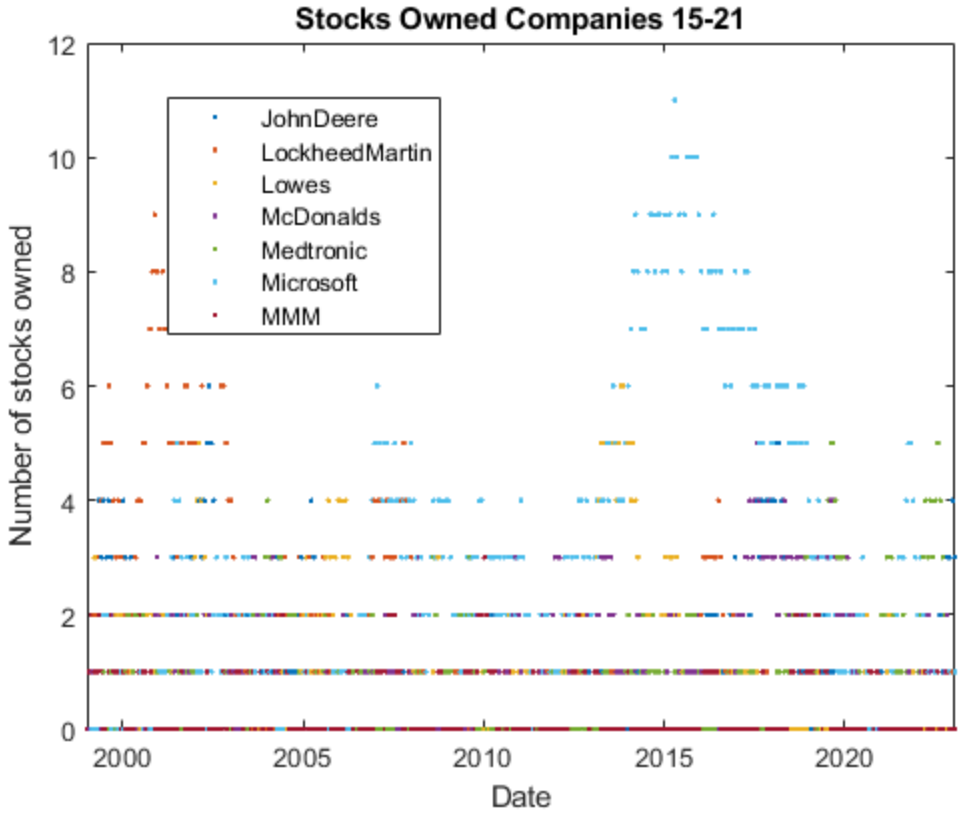
Ammount in Bank: $265
Net amount: $8898
% Gain: 790%

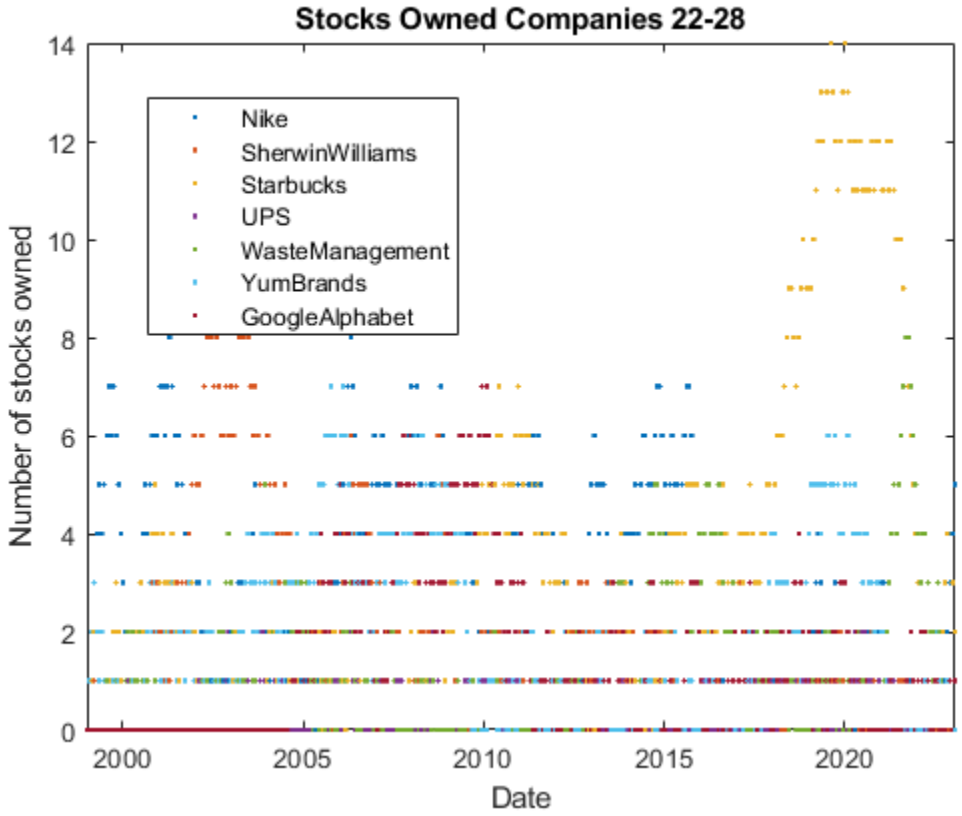

Net Amount over time
Net Amount
Date
0
2000
4000
6000
8000
10000
12000
14000
2006
2008
2010
2012
2014
2016
2018
2020
2022


Amount in Bank every 17 days
Amount in Bank
Day
0
500
1000
1500
2000
2500
3000
3500
4000
4500
2000
2005
2010
2015
2020


Stocks Owned Companies 1-7
Number of stocks owned
Date
Apple
Boeing
BostonScientific
Caterpillar
CocaCola
Cummins
Dupont
0
2
4
6
8
10
12
14
16
18
20
2000
2005
2010
2015
2020


Stocks Owned Companies 8-14
Number of stocks owned
Date
EcoLab
FedEx
Ford
GeneralElectric
HomeDepot
Honeywell
Intel
0
2
4
6
8
10
12
14
2000
2005
2010
2015
2020


Stocks Owned Companies 15-21
JohnDeere
LockheedMartin
Lowes
McDonalds
Medtronic
Microsoft
MMM
Number of stocks owned
Date
0
2
4
6
8
10
12
2000
2005
2010
2015
2020


Stocks Owned Companies 22-28
Nike
SherwinWilliams
Starbucks
UPS
WasteManagement
YumBrands
GoogleAlphabet
Number of stocks owned
Date
0
2
4
6
8
10
12
14
2000
2005
2010
2015
2020

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