# Project 3 - Report

## Basic Problem (a)

Graph of full data set, linear and log axes:

<p style="text-align:center;color:red">Plot goes here</p>

Ending amounts for $1000 investment using DJIA vs. 3% interest:

DJIA_end =

bank3_end =

equiv_rate = <span style="color:red">x.yzyy (xyz.yy%)</span>

## Basic Problem (b)

Predictor coefficients for first 10 years, $p = 3$:

<p style="text-align:center;color:red">List the predictor values</p>

## Basic Problem (c)

Plot of `xhat1`, `xhat2`, and the DJIA data. Note: `xhat1` and `xhat2` are identical. `xhat1/2` appears to trail the DJIA by xyz samples.

<p style="text-align:center;color:red">Plot goes here</p>

Expansion of the first "<span style="color:red">you can decide how much to zoom</span>" or so weeks of the above data to show more detail, in particular the xyz-week "lag":

<p style="text-align:center;color:red">Plot goes here</p>

Total squared error:

E = <span style="color:red">XYZ</span>

Plot of error signals `e` and `ehat2`, <span style="color:red">Plot goes here</span>

:

## Basic Problem (d)

Graph of error E vs. predictor order, going up to order p = XYZ. <span style="color:red">NOTE: this has been discussed in Piazza (Good job all of you in this discussion)</span>

<span style="color:red">Plot goes here</span>

## Intermediate Problem (e)

The predictor coefficients for first 10 years, p=10:

<span style="color:red">List all the ten coefficients</span>

Investment results obtained:

Bank rate = XYZ, equivalent rate = Z%

Upper bound = XYZ, equivalent rate = Z%

Buy and hold = XYZ, equivalent rate = Z %

Predictor = XYZ, equivalent rate = Z %

## Intermediate Problem (f)

Predictor coefficients for last 10 years, p=10:

<span style="color:red">List all the ten coefficients</span>

Investment results obtained:

Bank rate = XYZ, equivalent rate = Z%

Upper bound = XYZ, equivalent rate = Z%

Buy and hold = XYZ, equivalent rate = Z %

Predictor = XYZ, equivalent rate = Z %

## Advanced Problem (g)

Investment results obtained:

Bank rate = XYZ, equivalent rate = Z%

Upper bound = XYZ, equivalent rate = Z%

Buy and hold = XYZ, equivalent rate = Z %

Predictor = XYZ, equivalent rate = Z %


## Advanced Problem (h)

# Your Matlab Code

```matlab
% Basic Problem (a)


% Basic Problem (b)

% Basic Problem (c)

disp(' ')
disp(' ')
disp('********************************')
disp(' ')
disp('Basic Problem (c)')
disp(' ')
disp('********************************')
disp(' ')




% Basic Problem (d)

disp(' ')
disp(' ')
disp('********************************')
disp(' ')
disp('Basic Problem (d)')
disp(' ')
disp('********************************')
disp(' ')




% Intermediate Problem (e)

disp(' ')
disp(' ')
disp('********************************')
disp(' ')
disp('Intermediate Problem (e)')
disp(' ')
disp('********************************')
disp(' ')




% Intermediate Problem (f): last of the data

disp(' ')
disp(' ')
disp('********************************')
disp(' ')
disp('Intermediate Problem (f)')
disp(' ')
disp('********************************')
disp(' ')




% Intermediate Problem (g): all of the data

disp(' ')
disp(' ')
disp('********************************')
disp(' ')
disp('Intermediate Problem (g)')
disp(' ')
disp('********************************')
disp(' ')
```