

## ME 1020 Engineering Programming with MATLAB

Problem 5.22:

22. A sum of \$10 000 invested at 4 percent interest compounded annually will grow according to the formula

$$y(k) = 10^4(1.04)^k$$

where  $k$  is the number of years ( $k = 0, 1, 2, \dots$ ). Plot the amount of money in the account for a 10-year period. Do this problem with four types of plots: the  $xy$  plot, the stem plot, the stairs plot, and the bar plot.

```
% Problem 5.22
clear
clc
disp('Problem 5.22: Scott Thomas')

k = 1:1:10;
y = 10^4*(1.04).^k;

subplot(4,1,1)
plot(k,y)
title('Problem 5.22: Scott Thomas')
axis([1 10 0 2*10^4])
text(1.5, 1.5*10^4, 'xy Plot')
subplot(4,1,2)
stem(k,y), ylabel('Investment ($)')
%set(gca,'XTick',2000:1:2004)
text(1.5, 1.5*10^4, 'Stem Plot')
axis([1 10 0 2*10^4])
subplot(4,1,3)
bar(k,y)
%set(gca,'XTick',2000:1:2004)
text(1.5, 1.5*10^4, 'Bar Plot')
axis([1 10 0 2*10^4])
subplot(4,1,4)
stairs(k,y), xlabel('Year')
axis([1 10 0 2*10^4])
text(1.5, 1.5*10^4, 'Stairs Plot')
```

Problem 5.22: Scott Thomas

