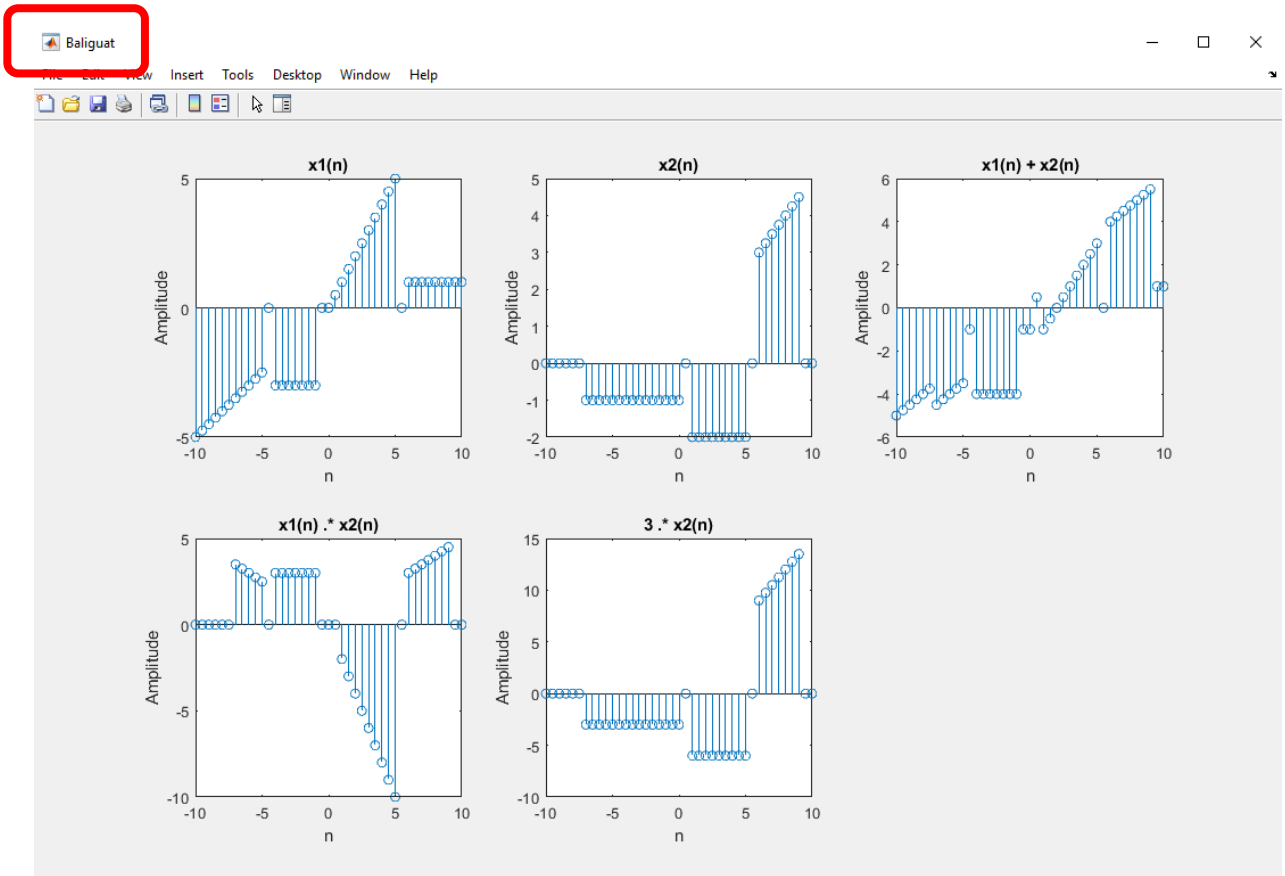
Editor - G:\My Drive\1 MSU - IIT\8 Fourth Year Second Sem\Digital Signal Processing\Matlab\Baliguat_Exercise _2.m

Baliguat_Exercise _1.m | Baliguat_Exercise _1_1.m | test.m | Baliguat_Exercise _2.m | Baliguat_Exerci

```
%Baliguat, Dennis Ivan C.
n = -10 : 0.5 : 10;

x1_a = 0.5*n;
x1_b = -3;
x1_c = n;
x1_d = 1;

x2_a = -1;
x2_b = -2;
x2_c = 0.5*n;

  x1 = x1_a .* ((-10 <= n) & (n <= -5))...
     + x1_b .* ((-4 <= n) & (n <= -1))...
     + x1_c .* ((0 <= n) & (n <= 5))...
     + x1_d .* ((6 <= n) & (n <= 10));

   x2 = x2_a .* ((-7 <= n) & (n <= 0))...
      + x2_b .* ((1 <= n) & (n <= 5))...
      + x2_c .* ((6 <= n) & (n <= 9));

 y_add    = x1 + x2;
 y_mul    = x1 .* x2;
 y_scale  = 3 .* x2;

figure('NumberTitle', 'off', 'Name', 'Baliguat');

%Signal 1
subplot(2,3,1);
stem(n, x1);
title('x1(n)');
xlabel('n');
ylabel('Amplitude');

%Signal 2
subplot(2,3,2);
stem(n, x2);
title('x2(n)');
xlabel('n');
ylabel('Amplitude');

%Signal A + Signal B
subplot(2,3,3);
stem(n, y_add);
```

```
42      %Signal A + Signal B
43 -    subplot(2,3,3);
44 -    stem(n, y_add);
45 -    title('x1(n) + x2(n)');
46 -    xlabel('n');
47 -    ylabel('Amplitude');
48
49      %Signal A .* Signal B
50 -    subplot(2,3,4);
51 -    stem(n, y_mul);
52 -    title('x1(n) .* x2(n)');
53 -    xlabel('n');
54 -    ylabel('Amplitude');
55
56      %Signal 3 .* B
57 -    subplot(2,3,5);
58 -    stem(n, y_scale);
59 -    title('3 .* x2(n)');
60 -    xlabel('n');
61 -    ylabel('Amplitude');
62
```

Command Window



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Baliguat_Exercise _1.m | Baliguat_Exercise _1_1.m | test.m | Baliguat_Exercise _2.m | Baliguat_Exerci

```
1   %Baliguat, Dennis Ivan
2   n = -10 : 1 : 10;
3   rand_elems = randi([-5, 14], 1, length(n));
4
5   figure('NumberTitle', 'off', 'Name', 'Baliguat');
6
7   %A
8   subplot(2, 1, 1);
9   stem(n, rand_elems);
10  title("Random discrete signal");
11  xlabel('n');
12  ylabel('Amplitude');
13
14
15  %B
16  y_shift = rand_elems .* (-1/3*n + 4);
17  subplot(2, 1, 2);
18  stem(n, y_shift);
19  title("y(n) = x(-1/3n + 4)");
20  xlabel('n');
21  ylabel('Amplitude');
22
23
```

Command Window