



# RAJSHAHI UNIVERSITY OF ENGINEERING AND TECHNOLOGY

DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

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## Lab Report

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Basic Shift, Fold and Scaling of a Digital Signal

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**Problem:** Given  $x(n) = \{..., 0, 1, 2, 3, 4, 5, 4, 3, 2, 1, 0, ...\}$ , find-

1.  $y(n) = x(n-2) + x(n+3)$
2.  $y(n) = x(2n-2) + x(n+3)$

**Solution:** 1.

```

1 function solution()
2     n = [-4:4];
3     x = [1:5 4:-1:1];
4     subplot(2,1,1);
5     stem(n,x);
6     title('Input Signal');
7     xlabel('n');
8     ylabel('x(n)');
9
10    [x11,n11] = sigshift(x,n,2);
11    [x12,n12] = sigshift(x,n,-3);
12    [x1,n1] = sigadd(x11,n11,x12,n12);
13    subplot(2,1,2);
14    stem(n1,x1);
15    title('Output Signal');
16    xlabel('n');
17    ylabel('y(n)');
18 end

```

