

## Swapnil Daxini (V00861672) Assignment 4 Question 2c)

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### Code for Forward sub

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```
type ForwardSub.m
```

```
function xsol = ForwardSub(A, b)

% Solve for x_1 and x_2
xsol(1) = b(1)/A(1,1);
xsol(2) = (b(2)-A(2,1)*xsol(1))/A(2,2);

% Determine size of array A
[n, m] = size(A);

% Perform back-substitution for the terms 3 to n.
if( n > 2)
    for i = 3:n
        xsol(i) = (b(i)-A(i, i-1)*xsol(i-1)-A(i, i-2)*xsol(i-2))/A(i,i);
    end
end
end
```

### Solve for x for given A and b

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```
A = [1,0,0,0;2,3,0,0;4,5,6,0;0,7,8,9]

b = [1;5;15;24]

x = ForwardSub(A, b)
```

A =

|   |   |   |   |
|---|---|---|---|
| 1 | 0 | 0 | 0 |
| 2 | 3 | 0 | 0 |
| 4 | 5 | 6 | 0 |
| 0 | 7 | 8 | 9 |

b =

|    |
|----|
| 1  |
| 5  |
| 15 |
| 24 |

x =

|   |   |   |   |
|---|---|---|---|
| 1 | 1 | 1 | 1 |
|---|---|---|---|