
```

clc;
clear;

% Input Data
lineData = [
    1 2 0.01 0.15;
    1 3 0.02 0.25;
    1 4 0.03 0.35;
    2 3 0.03 0.35;
    3 4 0.01 0.15;
    4 5 0.04 0.50
];

n = 5; % no. of busses
nline = size(lineData, 1);
Ybus = zeros(n, n); % initializing Y-Bus as zeros

for k = 1:nline
    from = lineData(k,1);
    to = lineData(k,2);
    R = lineData(k,3);
    X = lineData(k,4);

    Z = R + 1i*X;
    Y = 1 / Z;
    % non-diagonal elements
    Ybus(from,to) = Ybus(from,to) - Y;
    Ybus(to, from) = Ybus(to, from) - Y;
    % Diagonal Elements
    Ybus(from,from) = Ybus(from,from) + Y;
    Ybus(to,to) = Ybus(to,to) + Y;
end

disp(Ybus);

Columns 1 through 4

    1.0036 -13.4480i   -0.4425 + 6.6372i   -0.3180 + 3.9746i   -0.2431 + 2.8363i
   -0.4425 + 6.6372i    0.6856 - 9.4735i   -0.2431 + 2.8363i    0.0000 + 0.0000i
   -0.3180 + 3.9746i   -0.2431 + 2.8363i    1.0036 -13.4480i   -0.4425 + 6.6372i
   -0.2431 + 2.8363i    0.0000 + 0.0000i   -0.4425 + 6.6372i    0.8446 -11.4608i
    0.0000 + 0.0000i    0.0000 + 0.0000i    0.0000 + 0.0000i   -0.1590 + 1.9873i

Column 5

    0.0000 + 0.0000i
    0.0000 + 0.0000i
    0.0000 + 0.0000i
   -0.1590 + 1.9873i
    0.1590 - 1.9873i

```

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