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>> % To determine Bus Admittance Matrix (YBUS)by singular transformation for the given↙
power system%
>> %Name :-Om Jugalkishor Karrahe%
>> %Subject name :- CAPS (practical)%
>> n=4;
>> e=5;
>> sn=[1 2 3 4 4];
>> en=[2 3 4 1 2];
>> for j=1:e
A(j,sn(j))=1;
A(j,en(j))=-1;
end
>> Acap=A

Acap =

     1    -1     0     0
     0     1    -1     0
     0     0     1    -1
    -1     0     0     1
     0    -1     0     1

>> A1=Acap(1:5,2:4);
>> A1

A1 =

    -1     0     0
     1    -1     0
     0     1    -1
     0     0     1
    -1     0     1

>> Z=[0.5 0 0 0 0;0 0.4 0 0 0;0 0 0.1 0 0;0 0 0 0.5 0;0 0 0 0 0.4];
>> Y=inv(Z)

Y =

    2.0000         0         0         0         0
         0    2.5000         0         0         0
         0         0   10.0000         0         0
         0         0         0    2.0000         0
         0         0         0         0    2.5000

>> YBUS=(A1')*(Y)*(A1)

YBUS =

    7.0000   -2.5000   -2.5000
   -2.5000   12.5000  -10.0000
   -2.5000  -10.0000   14.5000
```

>>