```
clear; clc
cost=[2 4 4 1; 10 3 7 7; 6 7 20 5]
d=[50 100 100 200]
s=[150;200;150]
[m,n]=size(cost);

if(sum(d)==sum(s))
    fprintf('The problem is balanced\n\n')
else
    fprintf('The problem is unbalanced\n\n')
    if(sum(s)>sum(d))
        n=n+1;cost(:,n)=0;d(n)=sum(s)-sum(d);
    else
        m=m+1;cost(m,:)=0;s(m)=sum(d)-sum(s);
    end
end

a=cost;b=zeros(m,n);s1=s;d1=d;
%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%
%Cut me if you don't want to use NW method%
%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%
for i=1:m                                          %
    for j=i:n                                      %
        b(i,j)=min(d(j),s(i));                     %
        s(i)=s(i)-b(i,j);                          %
        d(j)=d(j)-b(i,j);                          %
    end                                            %
end                                                %
Total_cost_using_NW_method=sum(sum(b.*a)) %
b                                                  %
a=cost; b=zeros(m,n);                              %
%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%
%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%



while(sum(s1)+sum(d1)>0)
    mm=min(min(a));
    [i,j]=find(a==mm,1);
    b(i,j)=min(d1(j),s1(i));
    s1(i)=s1(i)-b(i,j); d1(j)=d1(j)-b(i,j);
    if(s1(i)==0)
        a(i,:)=inf;
    end
    if(d1(j)==0)
        a(:,j)=inf;
    end
end
Total_cost_using_LCM_method=sum(sum(b.*cost))
b
```

```
cost =

     2     4     4     1
    10     3     7     7
     6     7    20     5


d =

    50   100   100   200


s =

   150
   200
   150

The problem is unbalanced


Total_cost_using_NW_method =

        2400


b =

    50   100     0     0     0
     0     0   100   100     0
     0     0     0   100    50


Total_cost_using_LCM_method =

        1900


b =

     0     0     0   100    50
     0   100   100     0     0
    50     0     0   100     0
```

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