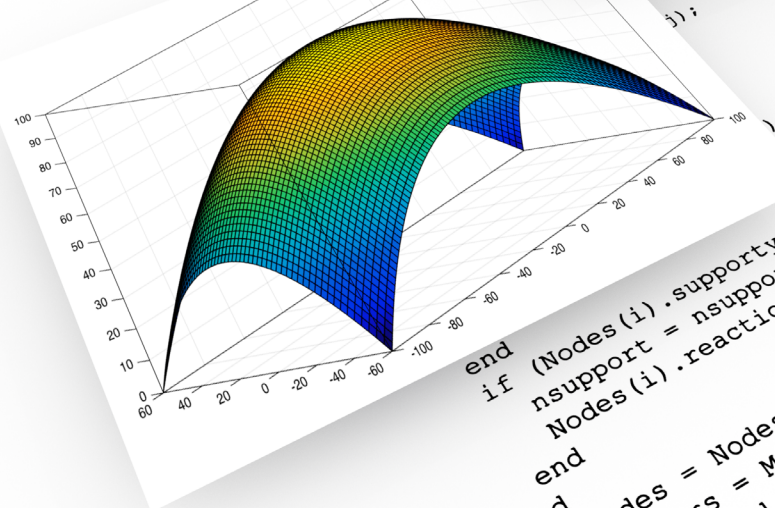


PROGRAMMING AND ENGINEERING COMPUTING WITH MATLAB® 2019

```
function [outNodes, outMembers] = solveTruss(nodes, members)  
n = size(nodes,2); m = size(members,2);  
if (m/3) < 2*n  
    disp('Unstable!');  
    outNodes = 0; outMembers = 0; return  
elseif (m/3) > 2*n  
    disp('Statically indeterminate!');  
    outNodes = 0; outMembers = 0; return  
end  
outNodes = 0; loads = zeros(2*n,1); nsupport = 0;  
A = zeros(2*n, 2*n);  
for i = 1:n  
    for j = 1:m  
        A = Nodes(j).node1 ==  
        for i = 1:n  
            if Members(j).no  
                n1 = i; n2 = Membe  
            elseif Members(j).no  
                n1 = i; n2 = Membe  
            end  
            x1 = Nodes(n1).x; y1  
            x2 = Nodes(n2).x; y2  
            l = sqrt((x2-x1)^2 +  
            A(2*i-1,j) = (x2-x1)  
            A(2*i, j) = (y2-y1)  
        end  
        if (Nodes(i).support ==  
            nsupport = nsupport+1;  
            A(2*i-1,m+nsupport) =  
                loads(m+nsupport);  
            end  
            if (Nodes(i).support == 1)  
                nsupport = nsupport+1;  
                Nodes(i).reaction = forces(m+nsupport);  
            end  
            outNodes = Nodes;  
            outMembers = Members;  
            disp('Solved successfully.')
```

Node No.	Support	LoadX	LoadY	ReactionX	ReactionY
1	0	0	0	0	0
2	0	0	0	0	0
3	0	0	0	0	0
4	0	0	0	0	0
5	0	0	0	0	0
6	0	0	0	0	0
7	0	0	0	0	0
8	0	0	0	0	0
9	0	0	0	0	0
10	0	0	0	0	0
11	0	0	0	0	0
12	0	0	0	0	0
13	0	0	0	0	0
14	0	0	0	0	0
15	0	0	0	0	0
16	0	0	0	0	0
17	0	0	0	0	0
18	0	0	0	0	0
19	0	0	0	0	0
20	0	0	0	0	0
21	0	0	0	0	0
22	0	0	0	0	0
23	0	0	0	0	0
24	0	0	0	0	0
25	0	0	0	0	0
26	0	0	0	0	0
27	0	0	0	0	0
28	0	0	0	0	0
29	0	0	0	0	0
30	0	0	0	0	0
31	0	0	0	0	0
32	0	0	0	0	0
33	0	0	0	0	0
34	0	0	0	0	0
35	0	0	0	0	0
36	0	0	0	0	0
37	0	0	0	0	0
38	0	0	0	0	0
39	0	0	0	0	0
40	0	0	0	0	0
41	0	0	0	0	0
42	0	0	0	0	0
43	0	0	0	0	0
44	0	0	0	0	0
45	0	0	0	0	0
46	0	0	0	0	0
47	0	0	0	0	0
48	0	0	0	0	0
49	0	0	0	0	0
50	0	0	0	0	0



```
end  
if (Nodes(i).support == 1)  
    nsupport = nsupport+1;  
    Nodes(i).reaction = forces(m+nsupport);  
end  
outNodes = Nodes;  
outMembers = Members;  
disp('Solved successfully.')
```

Huei-Huang Lee

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