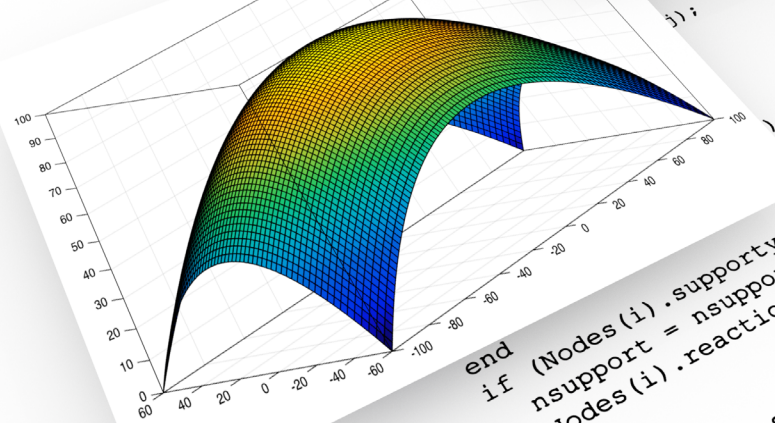


PROGRAMMING AND ENGINEERING COMPUTING WITH MATLAB® 2021

```
function [outNodes, outMembers] = solveTruss(nodes, members)  
n = size(nodes,2); m = size(members,2);  
if (m*n) < 2*n  
    disp('Undetectable!');  
    outNodes = 0; outMembers = 0; return  
elseif (m*n) > 2*n  
    disp('Statically indeterminate!');  
    outNodes = 0; outMembers = 0; return  
end  
outNodes = 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 j = 1:m  
            if Members(j).no  
                n1 = i; n2 = Membe  
                n1 = i; n2 = Membe  
            elseif Members(j).no  
                n1 = Nodes(n1).x; y1  
                n2 = Nodes(n2).x; y2  
                x1 = Nodes(n2).x; y2  
                x2 = sqrt((x2-x1)^2 +  
                i = sqrt((x2-x1)^2 +  
                A(2*i-1,j) = (x2-x1)  
                A(2*i, j) = (y2-y1)  
            end  
        end  
        if (Nodes(i).supportx ==  
            nsupport = nsupport+1;  
            nsupport = nsupport+1;  
            A(2*i-1,m+nsupport) =  
                y;  
                j);
```

Node Data		Load		Reaction		Member Data		Member Data		Status	
X	Y	Support	Support	Load	Load	Member	Member	Member	Member	Force	Force
0	0	0	0	0	0	1	2	3	4	2.3031e+04	0
0	0	0	0	0	0	2	3	4	5	1.7500e+04	0
0	0	0	0	0	0	3	4	5	6	1.5000e+04	0
0	0	0	0	0	0	4	5	6	7	1.0000e+04	0
0	0	0	0	0	0	5	6	7	8	1.0000e+04	0
0	0	0	0	0	0	6	7	8	9	1.0000e+04	0
0	0	0	0	0	0	7	8	9	10	1.0000e+04	0
0	0	0	0	0	0	8	9	10	11	1.0000e+04	0
0	0	0	0	0	0	9	10	11	12	1.0000e+04	0
0	0	0	0	0	0	10	11	12	13	1.0000e+04	0
0	0	0	0	0	0	11	12	13	14	1.0000e+04	0
0	0	0	0	0	0	12	13	14	15	1.0000e+04	0
0	0	0	0	0	0	13	14	15	16	1.0000e+04	0
0	0	0	0	0	0	14	15	16	17	1.0000e+04	0
0	0	0	0	0	0	15	16	17	18	1.0000e+04	0
0	0	0	0	0	0	16	17	18	19	1.0000e+04	0
0	0	0	0	0	0	17	18	19	20	1.0000e+04	0
0	0	0	0	0	0	18	19	20	21	1.0000e+04	0
0	0	0	0	0	0	19	20	21	22	1.0000e+04	0
0	0	0	0	0	0	20	21	22	23	1.0000e+04	0
0	0	0	0	0	0	21	22	23	24	1.0000e+04	0
0	0	0	0	0	0	22	23	24	25	1.0000e+04	0
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0	0	0	0	0	0	24	25	26	27	1.0000e+04	0
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0	0	0	0	0	0	27	28	29	30	1.0000e+04	0
0	0	0	0	0	0	28	29	30	31	1.0000e+04	0
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0	0	0	0	0	0	30	31	32	33	1.0000e+04	0
0	0	0	0	0	0	31	32	33	34	1.0000e+04	0
0	0	0	0	0	0	32	33	34	35	1.0000e+04	0
0	0	0	0	0	0	33	34	35	36	1.0000e+04	0
0	0	0	0	0	0	34	35	36	37	1.0000e+04	0
0	0	0	0	0	0	35	36	37	38	1.0000e+04	0
0	0	0	0	0	0	36	37	38	39	1.0000e+04	0
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0	0	0	0	0	0	39	40	41	42	1.0000e+04	0
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0	0	0	0	0	0	57	58	59	60	1.0000e+04	0
0	0	0	0	0	0	58	59	60	61	1.0000e+04	0
0	0	0	0	0	0	59	60	61	62	1.0000e+04	0
0	0	0	0	0	0	60	61	62	63	1.0000e+04	0
0	0	0	0	0	0	61	62	63	64	1.0000e+04	0
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0	0	0	0	0	0	65	66	67	68	1.0000e+04	0
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0	0	0	0	0	0	69	70	71	72	1.0000e+04	0
0	0	0	0	0	0	70	71	72	73	1.0000e+04	0
0	0	0	0	0	0	71	72	73	74	1.0000e+04	0
0	0	0	0	0	0	72	73	74	75	1.0000e+04	0
0	0	0	0	0	0	73	74	75	76	1.0000e+04	0
0	0	0	0	0	0	74	75	76	77	1.0000e+04	0
0	0	0	0	0	0	75	76	77	78	1.0000e+04	0
0	0	0	0	0	0	76	77	78	79	1.0000e+04	0
0	0	0	0	0	0	77	78	79	80	1.0000e+04	0
0	0	0	0	0	0	78	79	80	81	1.0000e+04	0
0	0	0	0	0	0	79	80	81	82	1.0000e+04	0
0	0	0	0	0	0	80	81	82	83	1.0000e+04	0
0	0	0	0	0	0	81	82	83	84	1.0000e+04	0
0	0	0	0	0	0	82	83	84	85	1.0000e+04	0
0	0	0	0	0	0	83	84	85	86	1.0000e+04	0
0	0	0	0	0	0	84	85	86	87	1.0000e+04	0
0	0	0	0	0	0	85	86	87	88	1.0000e+04	0
0	0	0	0	0	0	86	87	88	89	1.0000e+04	0
0	0	0	0	0	0	87	88	89	90	1.0000e+04	0
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0	0	0	0	0	0	94	95	96	97	1.0000e+04	0
0	0	0	0	0	0	95	96	97	98	1.0000e+04	0
0	0	0	0	0	0	96	97	98	99	1.0000e+04	0
0	0	0	0	0	0	97	98	99	100	1.0000e+04	0



```
end  
if (Nodes(i).supportx == 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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