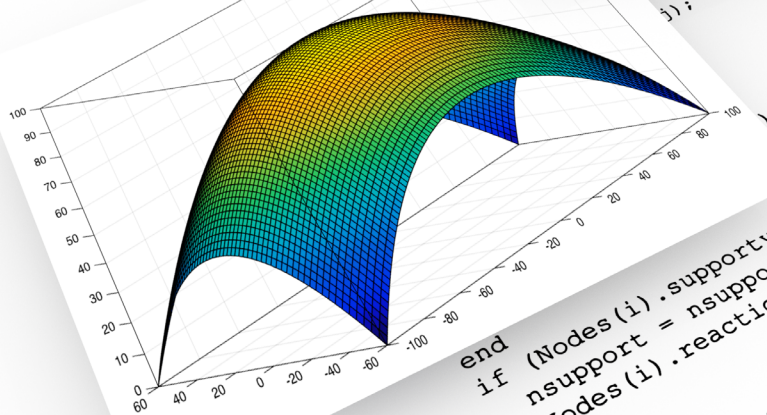


PROGRAMMING AND ENGINEERING COMPUTING WITH MATLAB® 2018

```
function [outNodes, outMembers] = solveTruss(nodes, members)  
n = size(nodes,2); m = size(members,2);  
if (m*n) < 2*n  
disp('Unstable!');  
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  
if members(j).node1 ==  
ni = i; n2 = members(j).node2;  
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  
end  
if (Nodes(i).supportx ==  
nsupport = nsupport+1;  
A(2*i-1,m+nsupport) =  
L;
```

Node Data		Load		Reaction	
X	Y	Support	Support	Force	Constraint
1	0	0	0	0	0
2	10	0	0	0	0
3	20	0	0	0	0
4	30	0	0	0	0
5	40	0	0	0	0
6	50	0	0	0	0
7	60	0	0	0	0
8	70	0	0	0	0
9	80	0	0	0	0
10	90	0	0	0	0
11	100	0	0	0	0

Member Data		Stiffness	
Node1	Node2	Kxx	Kyy
1	2	10000	10000
2	3	10000	10000
3	4	10000	10000
4	5	10000	10000
5	6	10000	10000
6	7	10000	10000
7	8	10000	10000
8	9	10000	10000
9	10	10000	10000
10	11	10000	10000



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

Huei-Huang Lee

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