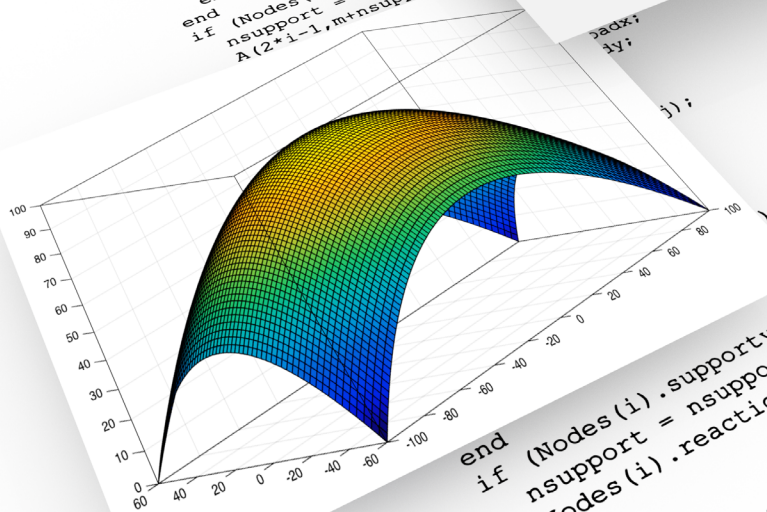


PROGRAMMING AND ENGINEERING COMPUTING WITH MATLAB® 2020

```
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 = zeros(2*n,1); nsupport = 0;
A = zeros(2*n, 2*n);
for i = 1:n
    for j = 1:m
        n1 = members(j).node1;
        n2 = members(j).node2;
        if n1 == i; n2 == Membe
            n1 = i; n2 = Membe
            elseif members(j).no
                n1 = i; n2 = Membe
            end
            n1 = nodes(n1).x; y1
            x1 = nodes(n2).x; y2
            x2 = sqrt((x2-x1)^2 +
            i = sqrt((x2-x1)^2 +
            A(2*i-1,j) = (y2-y1)
            A(2*i, j) = (x2-x1)
            end
            if (Nodes(i).supportx ==
            if (Nodes(i).supportx ==
            nsupport = nsupport+1;
            A(2*i-1,m+nsupport) =
            A(2*i-1,m+nsupport) =
```

Node Data		Support		Load		Reaction		Member Data		Member Data	
ID	X	Y	Support	Support	Load	Load	Reaction	Reaction	Node1	Node2	Area
1	0	0	0	0	0	0	0	0	1	2	1.0
2	10	0	0	0	0	0	0	0	2	3	1.0
3	20	0	0	0	0	0	0	0	3	4	1.0
4	30	0	0	0	0	0	0	0	4	5	1.0
5	40	0	0	0	0	0	0	0	5	6	1.0
6	50	0	0	0	0	0	0	0	6	7	1.0
7	60	0	0	0	0	0	0	0	7	8	1.0
8	70	0	0	0	0	0	0	0	8	9	1.0
9	80	0	0	0	0	0	0	0	9	10	1.0
10	90	0	0	0	0	0	0	0	10	11	1.0
11	100	0	0	0	0	0	0	0	11	12	1.0



```
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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