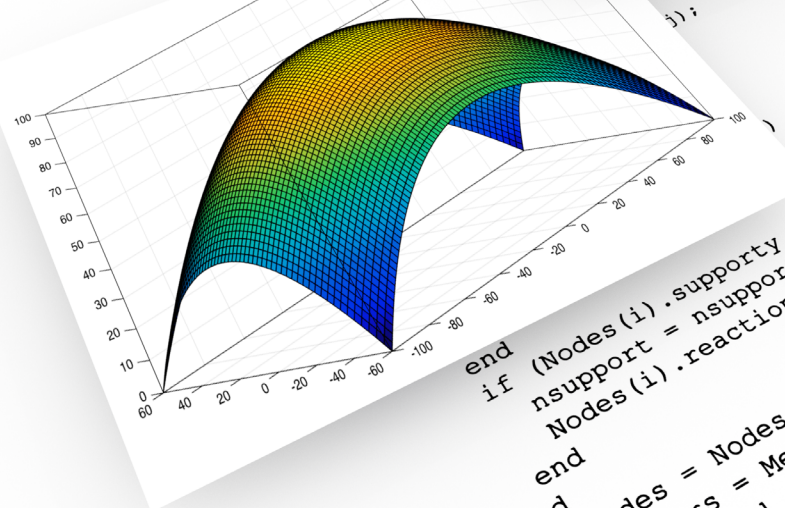


PROGRAMMING AND ENGINEERING COMPUTING WITH MATLAB® 2022

```
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, 2*n); loads = 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
            x2 = Nodes(n2).x; y2
            l = sqrt((x2-x1)^2+(y2-y1)^2);
            A(2*i-1,j) = (x2-x1)/l;
            A(2*i, j) = (y2-y1)/l;
        end
        if (Nodes(i).supportx ==
            nsupport = nsupport+1;
            A(2*i-1,m+nsupport) =
                loads(m+nsupport);
            end
            if (Nodes(i).supporty == 1)
                nsupport = nsupport+1;
                Nodes(i).reaction = forces(m+nsupport);
            end
        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



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