

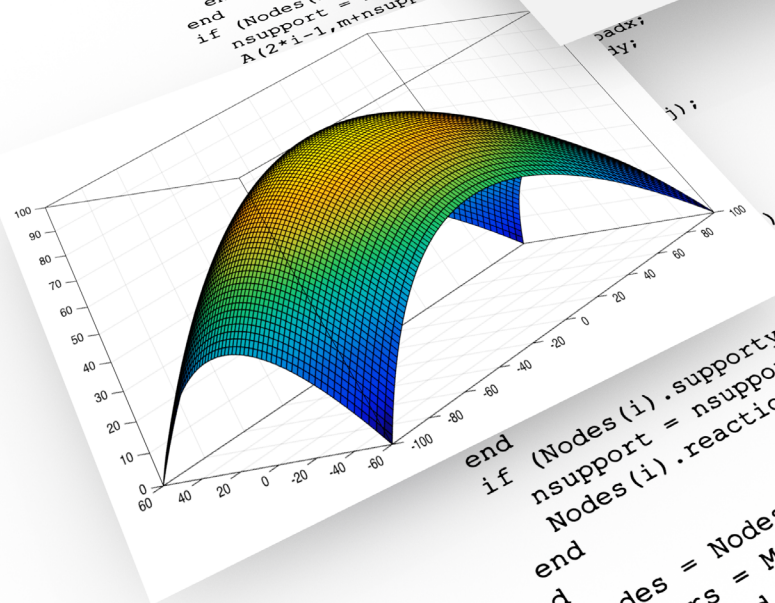
**New**  
Now contains more  
detailed descriptions

# PROGRAMMING AND ENGINEERING COMPUTING WITH MATLAB® 2017

```
function [outNodes, outMembers] = solveTruss(nodes, members)  
n = size(nodes,2); m = size(members,2);  
if nargin < 2, n = 2; m = 2; end  
if nargin < 3, n = 2; m = 2; end  
outNodes = zeros(2*n,1); outMembers = 0; return  
elseif (m>n) > 2, n, indeterminate!  
else  
disp('statically');  
outNodes = 0; outMembers = 0; return  
end  
outNodes = zeros(2*n, 2*n);  
for i = 1:n  
A = zeros(2,2);  
for j = 1:m  
if Members(j).node1 ==  
i && Members(j).node2 ==  
i  
A(2*i-1, j) = 1; A(2*i, j) = 0;  
elseif Members(j).node1 ==  
i && Members(j).node2 ==  
i+1  
A(2*i-1, j) = 1; A(2*i, j) = 0;  
elseif Members(j).node1 ==  
i && Members(j).node2 ==  
i+1  
A(2*i-1, j) = 0; A(2*i, j) = 1;  
elseif Members(j).node1 ==  
i && Members(j).node2 ==  
i+1  
A(2*i-1, j) = 0; A(2*i, j) = 1;  
end  
end  
end  
if (Nodes(i).support == 1)  
nsupport = nsupport+1;  
A(2*i-1, m+nsupport) = 1;  
end
```

| Node | Load | Reaction |
|------|------|----------|
| 1    | 0    | 0        |
| 2    | 0    | 0        |
| 3    | 0    | 0        |
| 4    | 0    | 0        |
| 5    | 0    | 0        |
| 6    | 0    | 0        |

| Member | Node1 | Node2 | Area |
|--------|-------|-------|------|
| 1      | 1     | 2     | 1    |
| 2      | 1     | 3     | 1    |
| 3      | 2     | 4     | 1    |
| 4      | 3     | 4     | 1    |
| 5      | 3     | 5     | 1    |
| 6      | 4     | 5     | 1    |



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