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2.5 First problem and first MATLAB code

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First we define vector `prescribedDof`, corresponding to the prescribed degrees of freedom. Then we define a vector containing all `activeDof` degrees of freedom, by setting up the difference between all degrees of freedom and the prescribed ones. The MATLAB function `setdiff` allows this operation.

```
% prescribed dof
prescribedDof = [1;3;4];
% free Dof : activeDof
activeDof = setdiff(1:numberOfNodes)', [prescribedDof]';
% solution
displacements = stiffness(activeDof, activeDof) \ force(activeDof);
```

Note that the solution is performed with the active lines and columns only, by using a `mask`.

```
displacements = stiffness(activeDof, activeDof) \ force(activeDof);
```

Because we are in fact calculating the solution for the active degrees of freedom only, we can place this solution in a vector `displacements1` that contains also the prescribed (zero) values.

```
% positioning all displacements
displacements1 = zeros(numberOfNodes, 1);
displacements1(activeDof) = displacements;
```

The vector `displacements1` is then a four-position vector with all displacements. We then call function `outputDisplacementsReactions.m`, to output displacements and reactions, as

```
%.....
function outputDisplacementsReactions...
    (displacements, stiffness, GDof, prescribedDof)
% output of displacements and reactions in
% tabular form
% GDof: total number of degrees of freedom of
% the problem
% displacements
disp('Displacements')
%displacements=displacements1;
%[i: GDof; format
[j]: displacements]
```

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