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```
function [Awork,xsoln,xmat,Errr] = simforel(A,b)
```

```
% HW 1 Problem 1(a)  
% Function that uses simple forward elimination
```

Illustrate vanilla forward elimination

```
nref=length(b);           %system size for reference problem  
  
%note that the elimination procedure coded below modifies the matrix B  
Awork=cat(2,A,b);         %This is our working version of the matrix used to perform elimination (i.e. it will be modified)  
for ir1=2:nref             %loop over rows from 2 to n performing elimination, this index marks what row we are starting the eliminati  
    for ir2=ir1:nref        %this index marks the present position where elimination is being performed - i.e. where we are applying th  
        fact=Awork(ir2,ir1-1); %multiplier of the variable we are attempting to eliminate, its ir-1 column of this row  
        Awork(ir2,:)=Awork(ir2,:)-fact/Awork(ir1-1,ir1-1).*Awork(ir1-1,:); %subtract off previous row modified by a factor that eliminates the ir-1 column term i  
    end %for  
end %for  
  
disp('elim([Aref,bref]) = ');  
disp(Awork);
```

Not enough input arguments.

Error in simforel (line 7)
nref=length(b); %system size for reference problem

Illustrate back substitution on B using provided Matlab function

```
xsoln=backsub(Awork);  
disp('Elimination/back sub solution: ');  
disp(xsoln);  
  
xmat = A\b;  
disp('Matlab,GNU/Octave built-in solution: ');  
disp(xmat);  
  
Errr = xmat - xsoln;  
disp('The error is: ');  
disp(Errr);
```

```
end % function
```

