

```

function memberlocalFEF = MD_computeMemberFEFs(w, L)
% Code developed by Mrunmayi Mungekar and Devasmit Dutta
%
% MD_computeMemberFEFs.m computes the element stiffness matrix for a given element
%
%
%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%
%
% Functions Called
%         none
%
% Dictionary of Variables
% Input information
%         % w = distributed load
%         % L = length of the member
%
% Output information
%         % memberlocalFEF = fixed end forces in the local element directions
%
%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%
%
% Take the load components along the local x', y', z' directions

        wx = w(1);
        wy = w(2);
        wz = w(3);

% Calculate the corresponding fixed end forces due to load in each local x', y', z'
directions

        FEF_X = [-wx*L/2;0;0;0;0;0; -wx*L/2;0;0;0;0;0];
        FEF_Y = [0;-wy*L/2;0;0;0;-wy*L^2/12; 0;-wy*L/2;0;0;0;wy*L^2/12];
        FEF_Z = [0;0;-wz*L/2;0;wz*L^2/12;0; 0;0;-wz*L/2;0;-wz*L^2/12;0];

% Sum up to get the total fixed end forces

        FEF = FEF_X + FEF_Y + FEF_Z;
        memberlocalFEF = FEF;

end

```