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function memberlocalFEF = MD_computeMemberFEFs(w, L)
% Code developed by Mrunmayi Munekar 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

```