

develop a generic Python/MATLAB code that takes geometry and loading details as input and performs elastic structural analysis using the direct stiffness method

**Key Features:** code should tackle all sorts of plane frames (vertical as well as inclined members)

**Inputs:** The input file can be a .txt or Excel file with provision for the following node and member data.

Nodal data	Member data
Node points, Node boundary conditions Nodal forces	Member-node connectivity Member forces (point load, udl, uvl, trapezoidal load) Cross-section details (I, A) Modulus of elasticity

**Post-processing:** The code should be equipped for the following post-processing.

- Displacements at known and unknown D.o.f
- Support reactions
- Member end forces