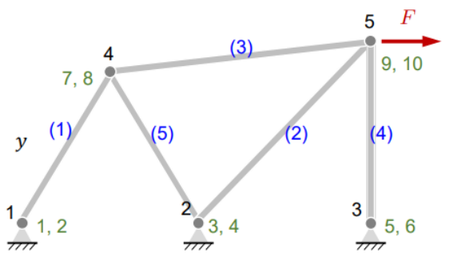
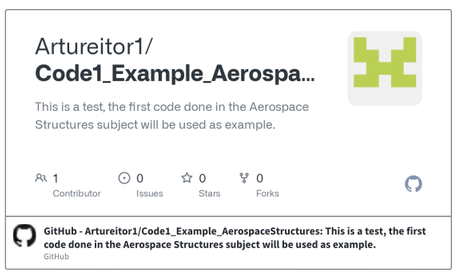
UML STRUCTURAL SOLVER

THIS UML DIAGRAM REPRESENTS
THE OPP STRUCTURE THAT HAS BEEN
FOLLOWED TO DESIGN A
STRCUTURAL NUMERIC SOLVER OF
ARTICULATED
MECHANICAL STRUCTURES





n_{d} : Problem dimension, i.e. $n_{\mathrm{d}} = 2$ (2D).
n_{el} : Total number of bars.
n_{nod} : Total number of nodes (joints).
n_{ne} : Number of nodes in a bar, i.e. $n_{\mathrm{ne}} = 2$.
n_{i} : Degrees of freedom per node, i.e. $n_{\mathrm{i}} = 2$.
n_{dof} : Total number of degrees of freedom, i.e. $n_{\mathrm{dof}} = n_{\mathrm{nod}} \times n_{\mathrm{i}}$.

$\mathbf{x}$: Nodal coordinates array ($n_{\mathrm{nod}} \times n_{\mathrm{d}}$):

$\mathbf{T}_{\mathrm{n}}$: Nodal connectivity table ($n_{\mathrm{el}} \times n_{\mathrm{ne}}$). Example:

$\mathbf{T}_{\mathrm{d}}$: Degrees of freedom connectivity table ($n_{\mathrm{el}} \times (n_{\mathrm{ne}} \times n_{\mathrm{i}})$).