Pseudo Nonlinear Law for Linear-Elasticity

- Variational formulation (Solve for $\bar{du}$ with given $\bar{u}, \bar{F}, \bar{t}$)

$$\int_{\Omega} \varepsilon(\bar{du}) \cdot [M] : \varepsilon(\bar{v}) + \int_{\Omega} \varepsilon(\bar{u}) \cdot [M] : \varepsilon(\bar{v}) + \int_{\Omega} \bar{F}^T \cdot \bar{v} + \int_{\partial\Omega} \bar{t}^T \cdot \bar{v} + B/C = 0$$

- Variational formulation is used to assemble A i.e stiffness matrix and b i.e R.H.S vector

$$A \, \bar{du} = \bar{b}$$

- Algorithm

```
Assemble A
while  error < eps  do
        Assemble b
        solve  du = A⁻¹ b
        update  u = u + du
        error = L₂(b)
```