

■ The mesh file required by every FE-code contains, at least, the following 2 data blocks the structure of which are explained for our example CHIP (see also T09 and T10a)

$\Gamma: \alpha \leftrightarrow i$

element connectivity table

| numbering of the ele. r | $r \in R_h \quad A_r \ni \alpha \longleftrightarrow i \in \bar{\Omega}_h$ | | | Further element information, e.g. Material Property MP |
|------------------------------|---|---------------------------|---------------------------|--|
| | global node numbers of the local nodes $x^{(r,1)}$ $\alpha=1$ | $x^{(r,2)}$ $\alpha=2$ | $x^{(r,3)}$ $\alpha=3$ | |
| 1 | 1 | 2 | 6 | 1 |
| 2 | 2 | 7 | 6 | 1 |
| 3 | 2 | 19 | 7 | 1 |
| ⋮ | ⋮ | ⋮ | ⋮ | ⋮ |
| $R_h = N_E = 24$ | 12 | 13 | 17 | 2 |

or marking elem. for refinement

$i: x_i, y_i$

Coordinates of the nodes

| i | 1 | 2 | 3 | ... | 20 | 21 |
|-------|-----|------|-----|-----|------|------|
| x_i | 0.0 | 0.17 | 0.5 | ... | 0.5 | 0.65 |
| y_i | 0.0 | 0.0 | 0.0 | ... | 0.45 | 0.3 |

■ Remark 2.2:

Further data for characterizing or marking nodes are possible, e.g.:

- description of the boundary Γ (see input file for FEM 2D)
- coding of the boundary conditions,
- coding of refinement information at some node, etc.