

IDEALIZATION, modifying geometry for simulation

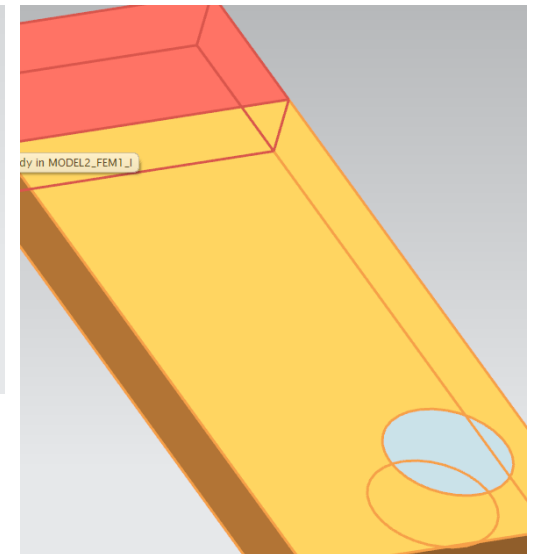
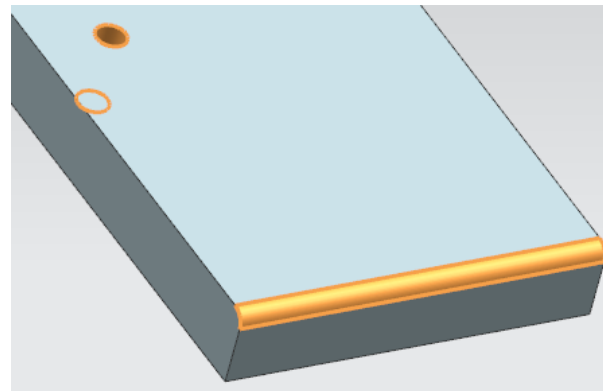
FEM is an approximate method and for **mesh creating** is used **simplification of the geometry**.

Hiding of small geometric features: e.g. small holes, edge blends, ...

Geometry dividing: for more geometric parts.

Reasons:

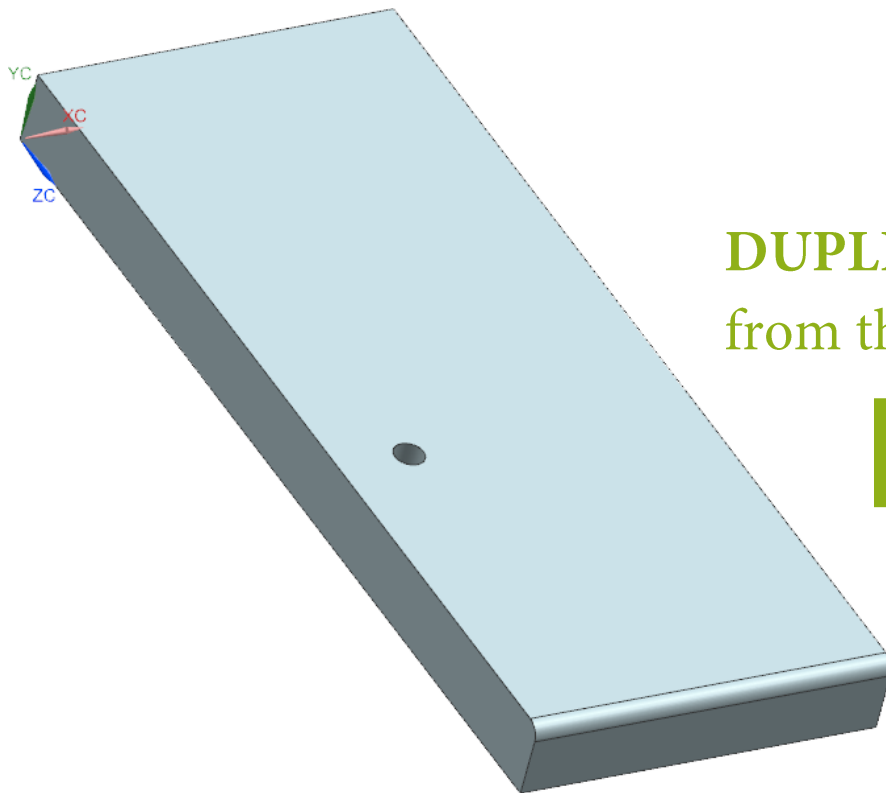
- **mesh simplification**
smaller tak, matrix
- **geometric divided parts**
more parts of mesh types
boundary conditions definition



I-PART - copy of the original geometry

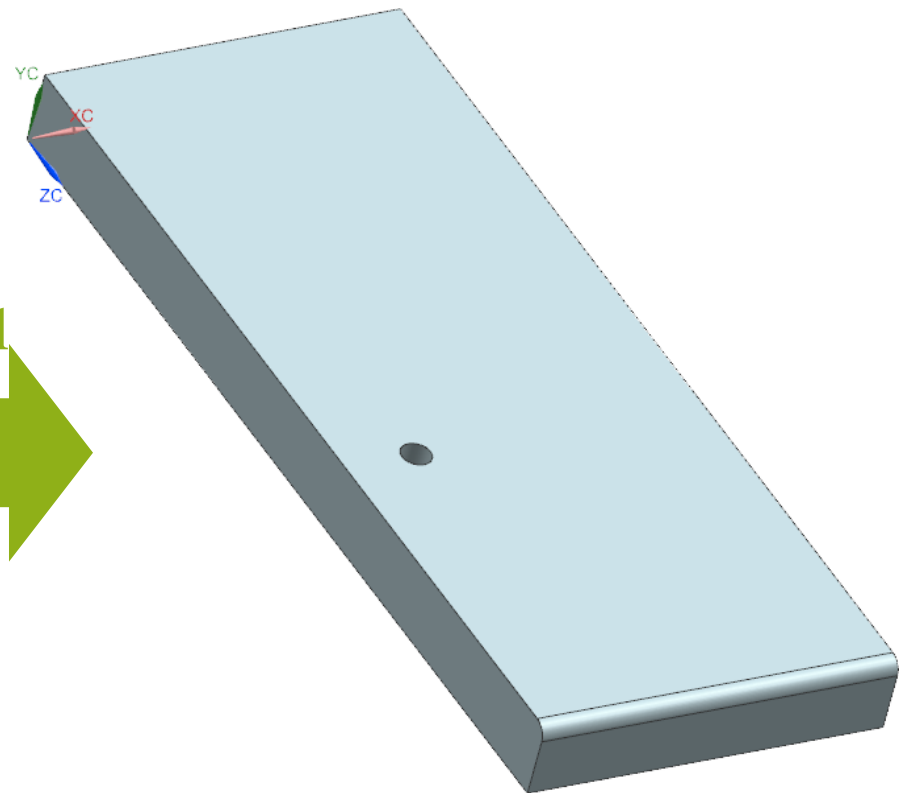
I-part is for geometry **idealization** and the **original** geometry is without changes.
Recommendation: original and idealized are separate in the different layers.

ORIGINAL GEOMETRY



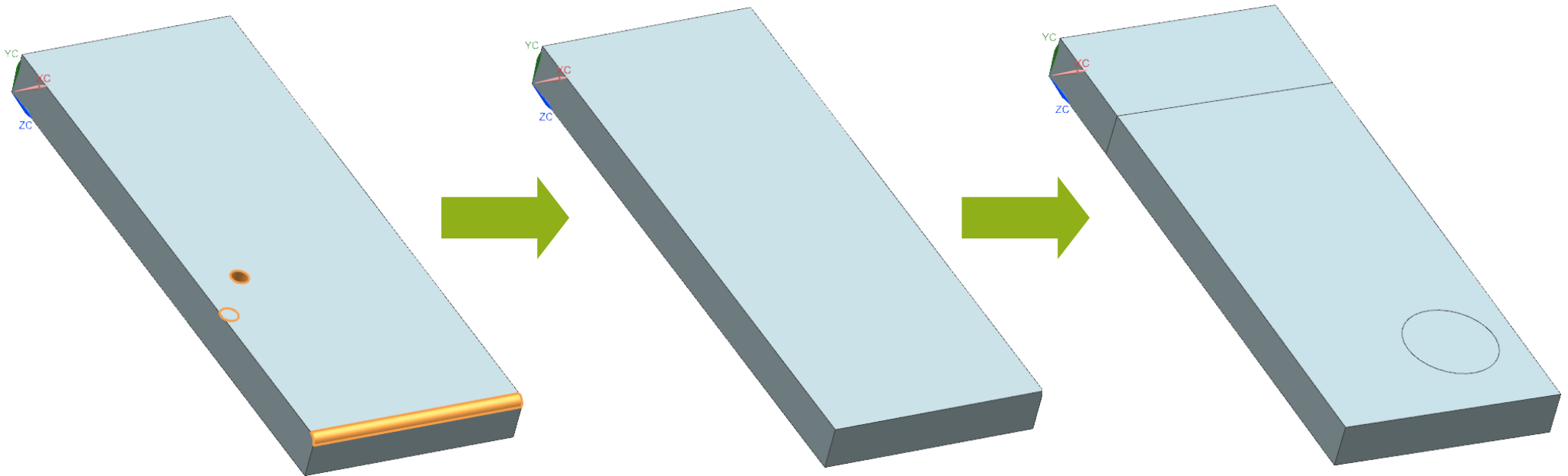
I-PART, idealized geometry

DUPLICATE
from the original



IDEALIZATION, editing of the i-part geometry

Hiding of the geometric details and dividing volumes of the **i-part**.



Using i-part geometry in FEM

In **FEM** is defined: which **parts of** geometry from **i-part** will used.

1. phase:

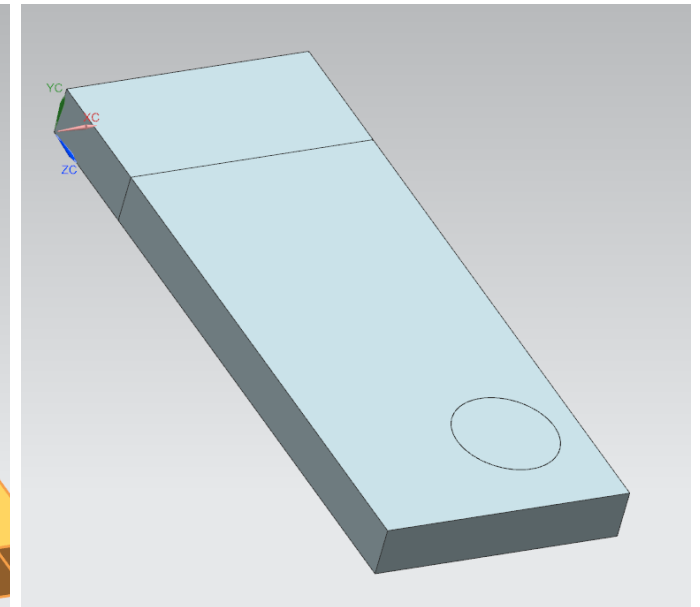
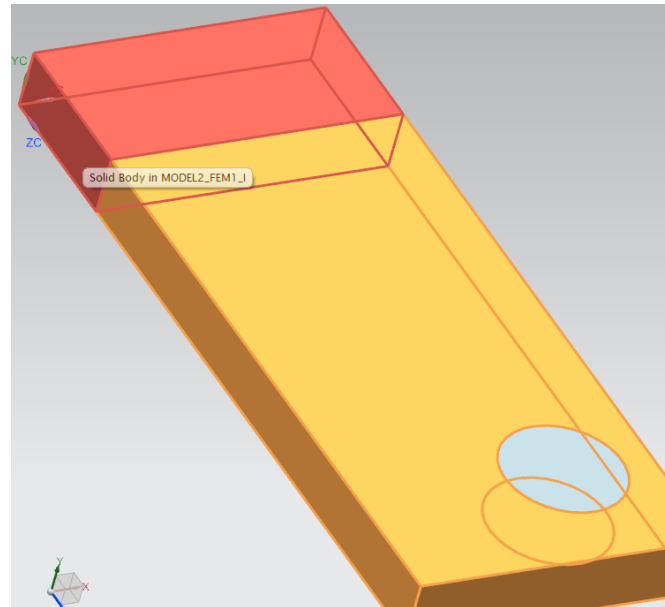
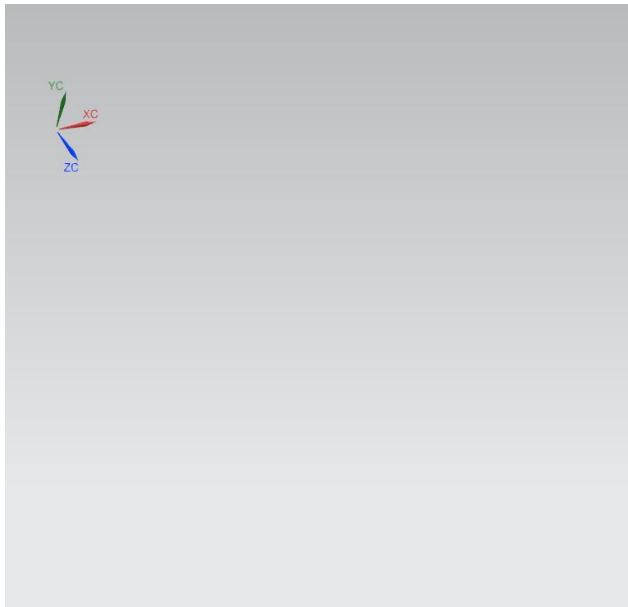
FEM without geometry

2. phase:

definition parts for use
from i-part

3. phase:

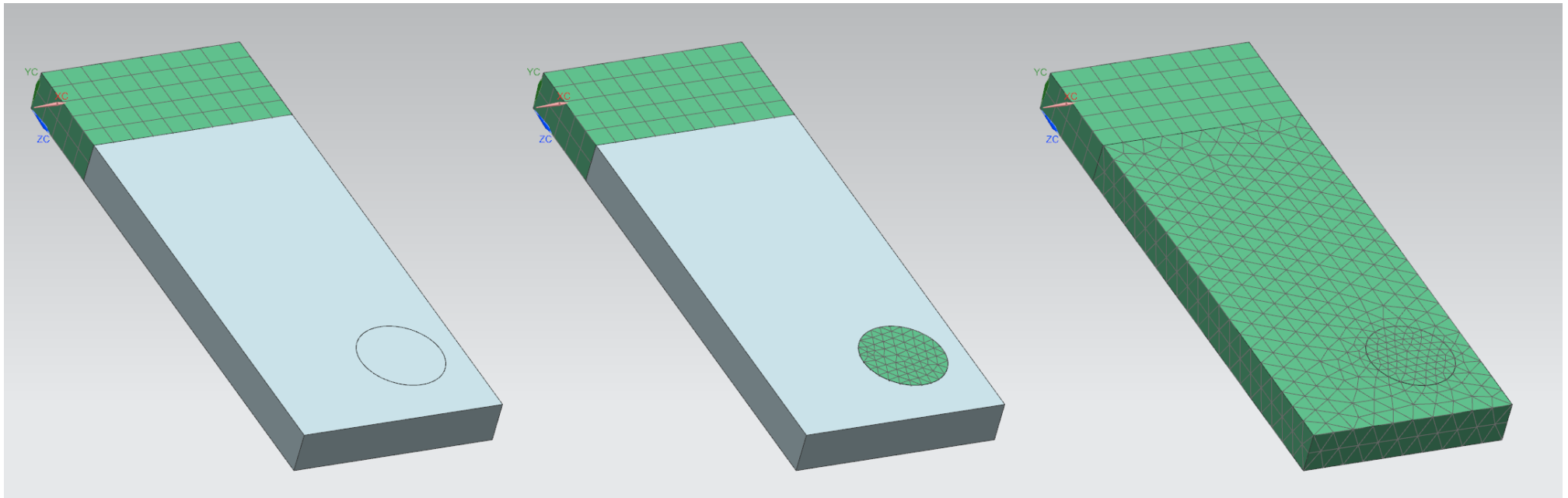
geometry from i-part
is ready for FEM





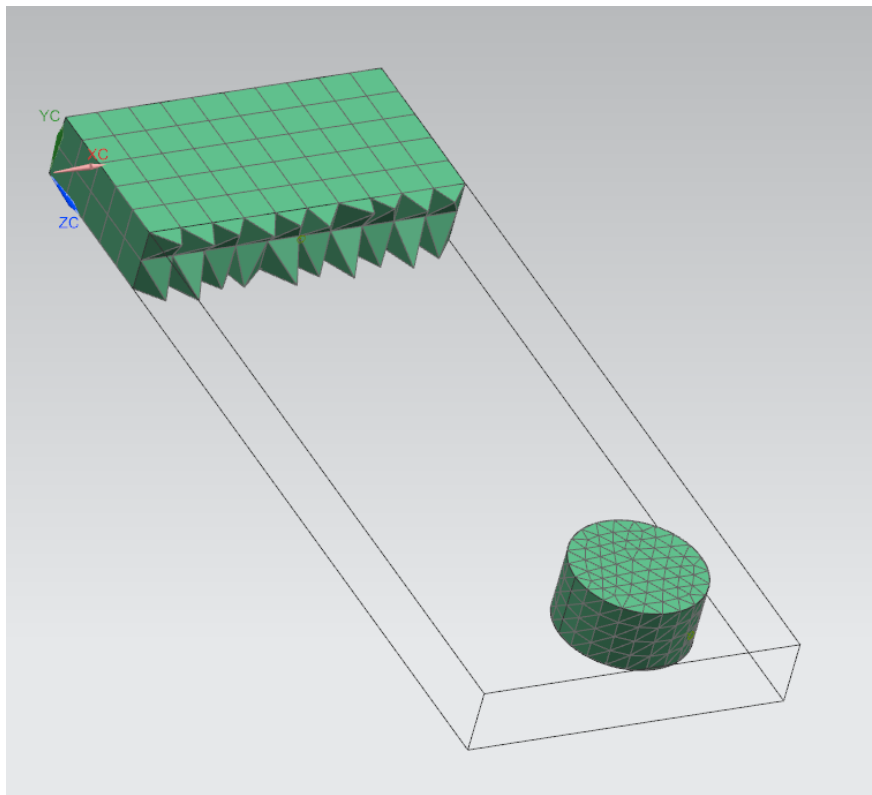
Mesh definition by parts

Different **types of mesh** on individual **geometry parts**.

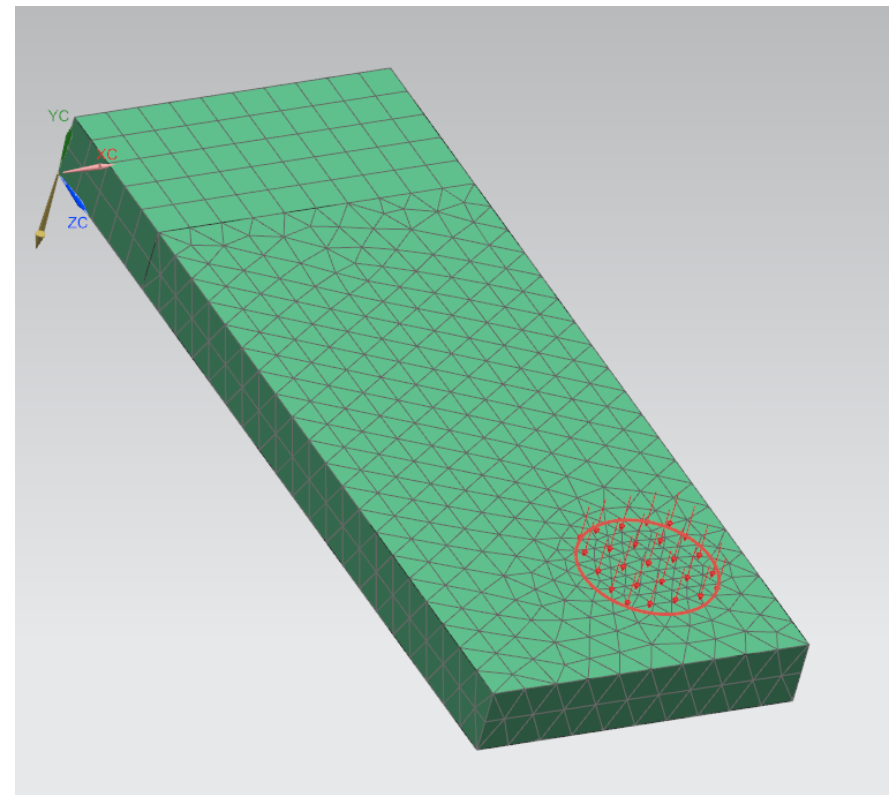


Mesh continuity and using the divided plane

6-sides elements (blocks) continuing to the pyramid elements.



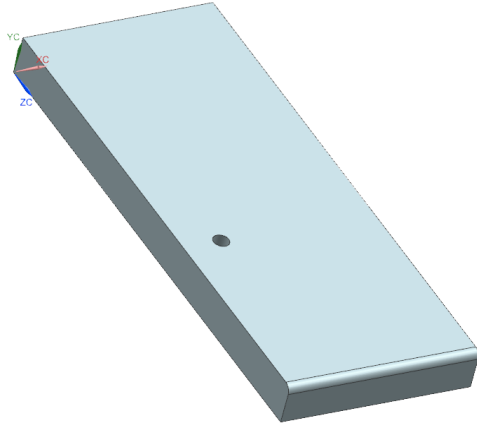
Force load on divided circular plane.



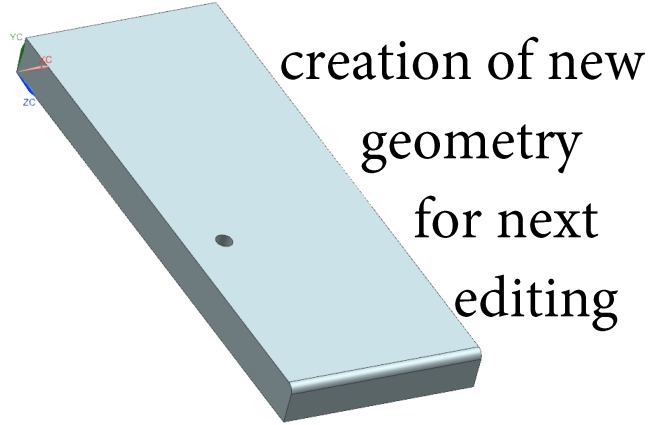


NX, process of idealization of geometry

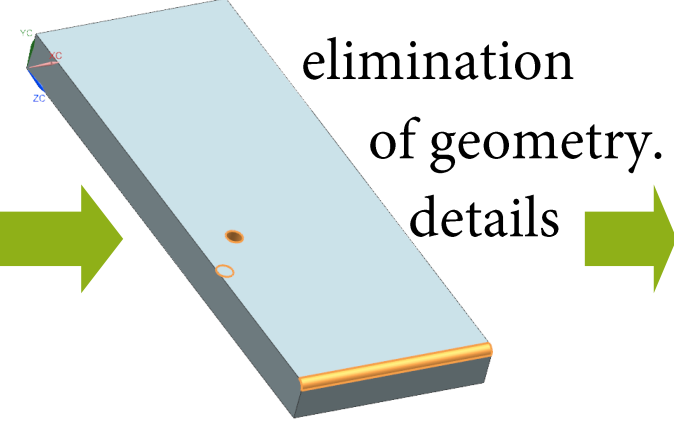
Input original part



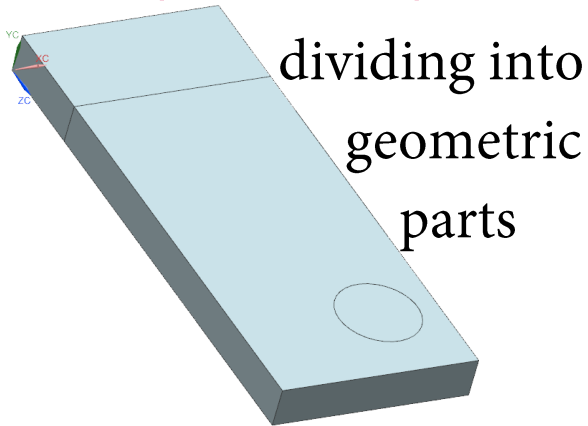
Duplication of part > i-part



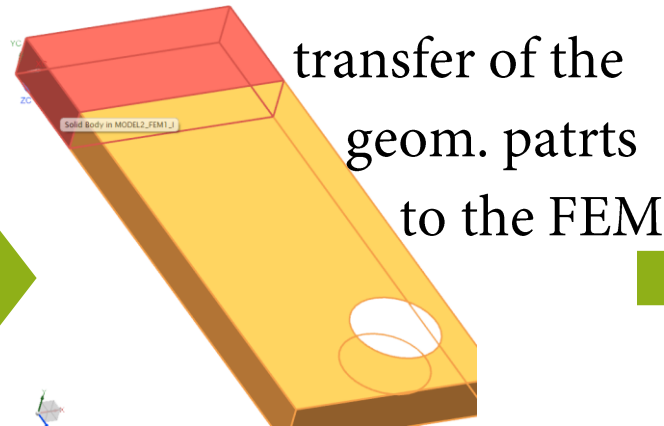
Editing of i-part geometry



Editing of i-part geometry



Using of i-part for FEM



FEM, more mesh types

