

GRIDFORMAT

header-only C++-library for grid file I/O

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github.com/dglaeser/gridformat

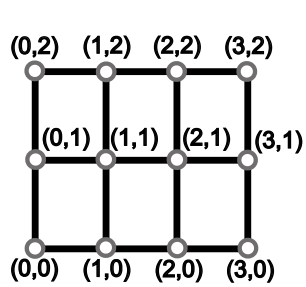
MOTIVATION

- Access to file formats not supported by Dune
 - Access to topology-specific VTK formats
 - Access to compressed VTK files
 - Recent VTK-HDF formats
- Reusable in non-Dune contexts

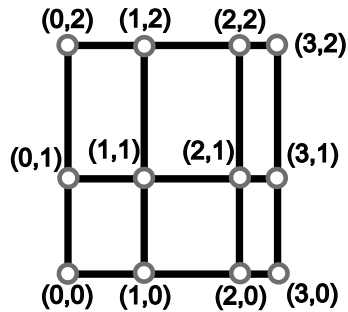
GOALS

- Generic, data structure-agnostic implementation
- No runtime or memory overhead
- No data conversions

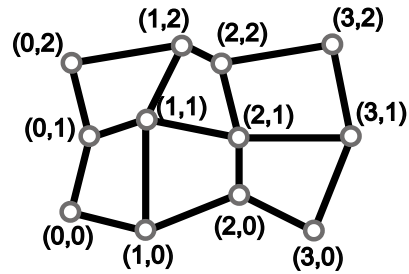
SUPPORTED GRID TYPES



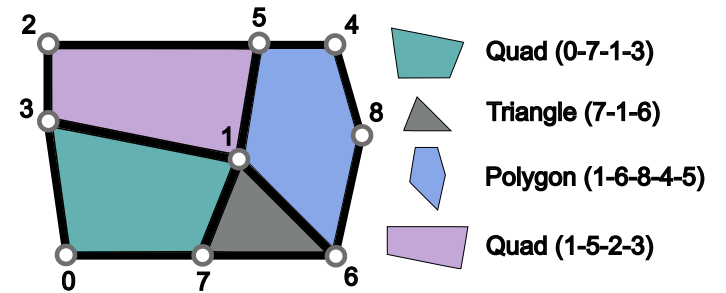
ImageGrid



RectilinearGrid



StructuredGrid



UnstructuredGrid



TRAITS CONCEPT

(live coding)

PREDEFINED TRAITS

- Dune
- CGAL
- *DolfinX*
- *Deal.II*
- *mfem*

SUPPORTED STATIC FORMATS

- VTI/PVTI
- VTR/PVTR
- VTS/PVTS
- VTU/PVTU
- VTK-HDF (ImageData/UnstructuredGrid)

SUPPORTED TRANSIENT FORMATS

- VTK (via metadata)
- PVD
- VTK-HDF (ImageData/UnstructuredGrid)

LIVE CODING IDEAS

- how to select a format
- how to choose format options
- read data back in
- **usage with `Dune::GridView`**
- read/write in parallel
- *time series*
- *higher-order output*
- *discontinuous output*