

# Grid Layer

## 1 Grid Layer Concepts

Grid Layer is used to wrap data file in memory, provide methods to organize, administer, inquire the data. So the functions the grid layer should provide including:

1. set the detailed info for the grid layer, including number of layers, dimension for each layer( each layer should have the same dimension).
2. allow methods to populate the grid layer, empty the grid layer, insert a new layer, delete an existing layer
3. allow methods to get single cell value, set single cell value

In our project, the grid layer is implemented as a template, since the cell value can be in type float or type int. integer grid layer is much easier to analyse.

## 2 Problems

1. Should we save the geometric info for each layer in GridLayer since each layer has its own geometric info? or we can store only one geometric info for all layers?
2. Should we create a member variable to same the time for that grid layer?
3. Is it necessary to declare a template to accept both int-valued and float-valued data file (this is why gridlayer is declared as a template)? Use int-valued grid layer is for later easy analysing( specifically for interpolation), but float-valued data with exact numeric format can also be easily analysed.