

## Polygonal mesh

Polygonal meshes are largely used in many graphic softwares and for simulating mathematical-model.

### Requirements

Build a C++ program which exploits STL utilities to memorize and manage efficiently the main properties of a polygonal mesh.

The program should memorize and test imported properties of a polygonal mesh read from files.

In particular a triangular mesh is composed by

1. Cell0D, which we read from a Cell0Ds.csv file of format

```
Id;Marker;X;Y
0;1;0.0000000000000000e+00;0.0000000000000000e+00
... (many rows)
```

2. Cell1D, which we read from a Cell1Ds.csv file of format

```
Id;Marker;Origin;End
0;0;18;11
... (many rows)
```

3. Cell2D, which we read from a Cell2Ds.csv file of format

```
Id;Marker;NumVertices;Vertices;NumEdges;Edges
0;0;3;16;1;9;3;8;9;10
... (many rows)
```

The tests verify that:

- all markers are correctly stored,
- each edge has non-zero length,
- each polygon has a non-zero area,
- the loaded mesh is identical to the one shown in the provided images.