# 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)
```

Test examples:

- all markers have been stored correctly,

- the edges of the triangles have non-zero length,

- the area of the triangles is non-zero,

and so on.