

# Assignment 2

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The second assignment consists of two parts. First, implement a visualization software for visualizing a vector data set using VTK. Your software should be capable of displaying the entire data set using glyphs as well as an arbitrary number of streamlines. In order to define data file, the start points of the streamlines, as well as all other necessary thresholds, implement a config file reader. The config file should define a value in each line (if not a comment line marked with # at the beginning) where first a keyword is given followed by a colon and the value itself separated by a space. For the second part, visualize a volumetric data set using the Marching Cubes algorithm implemented in VTK. Again, data file and isovalue should be defined via a config file. Your software should allow the specification of more than one isovalue. For both parts, turn in your source code and example images of your results. You can find data files on your VTK CD (or the [VTK homepage](#)). Additional data files are provided [here](#).

# Config file

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A config file may look like this:

```
# mode: filtering or extracting
Mode: ExtractMode
# input mode: Analyze format or slices
InputMode: SliceInput
StartSlice: 1
EndSlice: 64
# input file name
InputFileName: /home/data/hearts/Phantom/phantom-%03d.png
PotentialFieldFileName: /tmp/phantom.bin
# output file name
OutputFileName: phantom.mat
# threshold for low pass filtering
FilterThreshold: 70
```

# Data files

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Several data files are provided:

Volumetric data sets (series of png files, zipped)

- Brain
- Colon
- CT head
- Monster
- Mushroom

Vector data sets (VTK file format)

- Dipol
- Om08