2D visualization techniques

Example of visualizing 2D data

MRI scan of the human brain

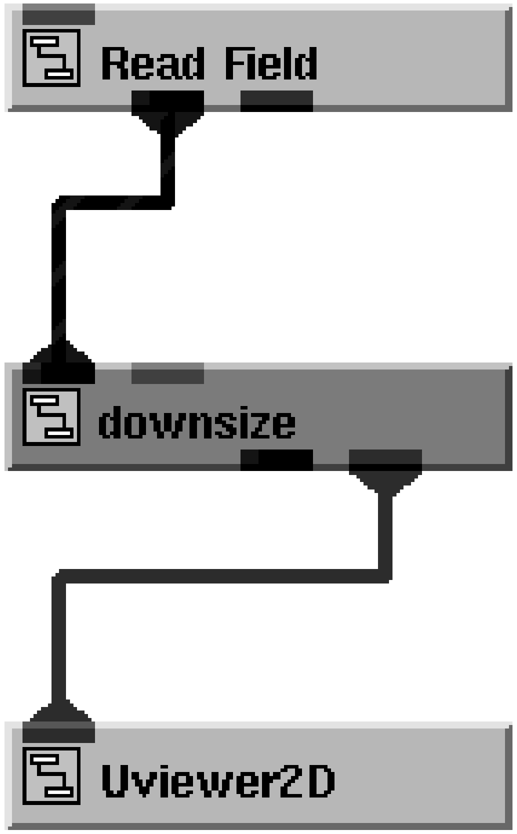
- The 2D data
  - 512x512
  - each data value is a single scalar byte
  - regular array of data
  - binary format with no header information
- What does the field file look like?

MRI.fld

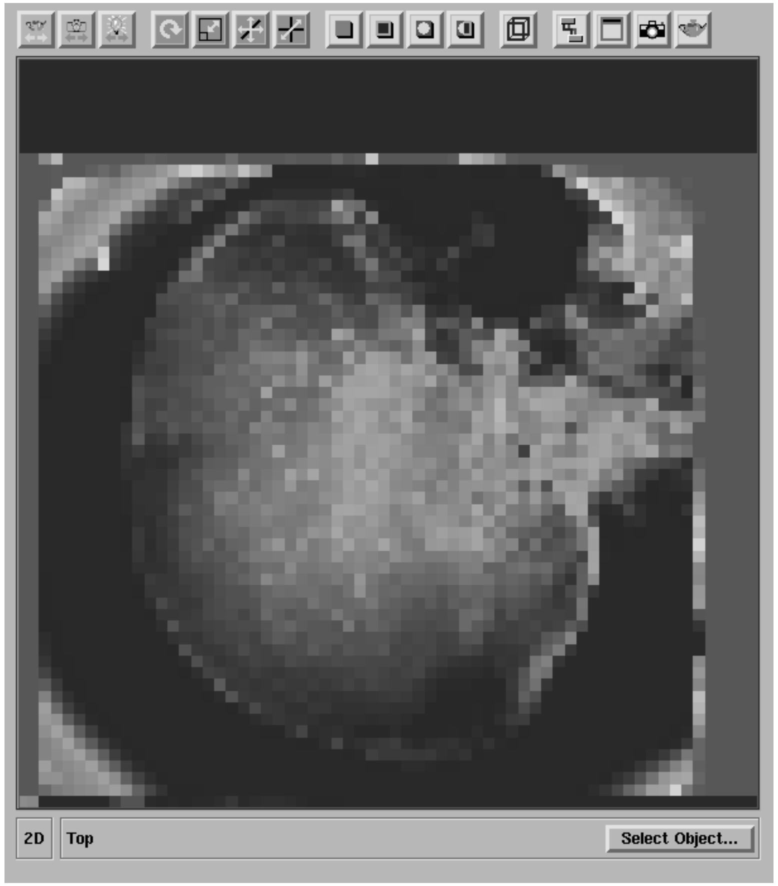
```
# AVS field file
# MRI brain scan
ndim = ?
dim1 = ?
dim2 = ?
nspace = ?
veclen = ?
data = ?
field = ?
variable 1 file = /usr/express/auxdata/mri.dat filetype = ?
    skip = ? stride = ?
```

Importing the MRI data

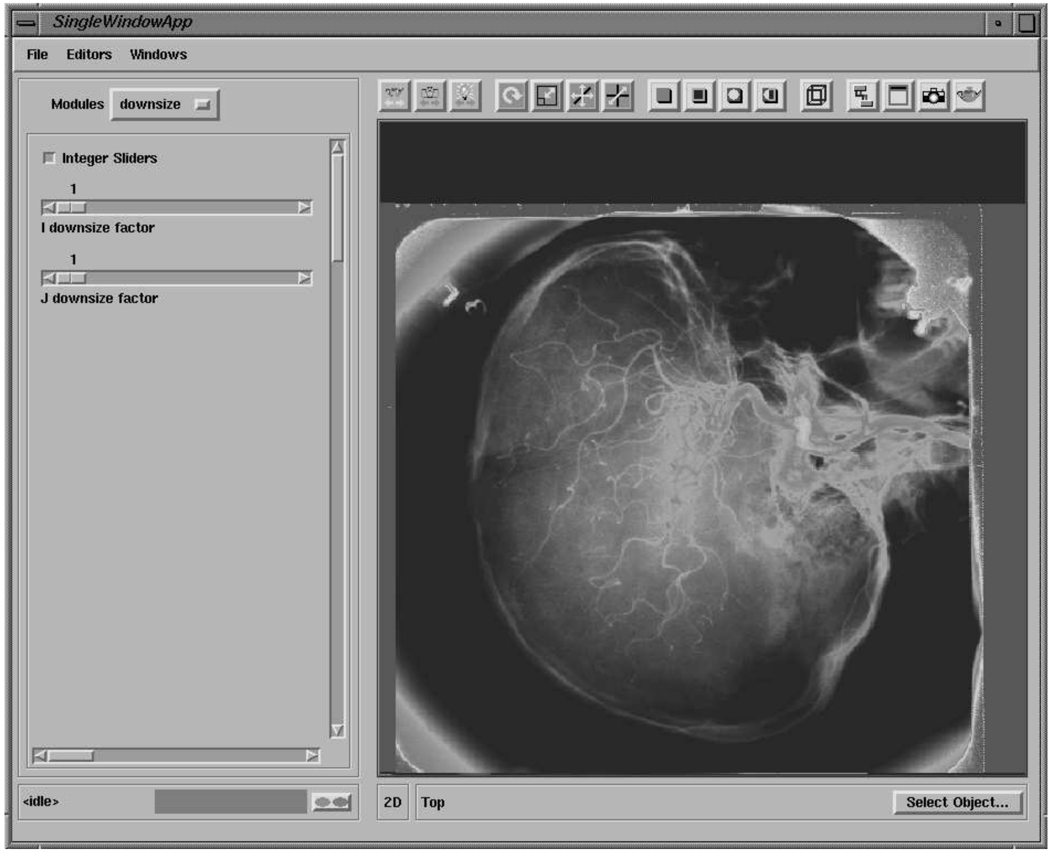
- ❑ `Read_Field`: reads an AVS field file and converts to AVS/Express field
- ❑ `downsize`: sub-samples the field
- ❑ `Uviewer2D`: creates a 2D image of the field in the DataViewer



Importing the MRI data



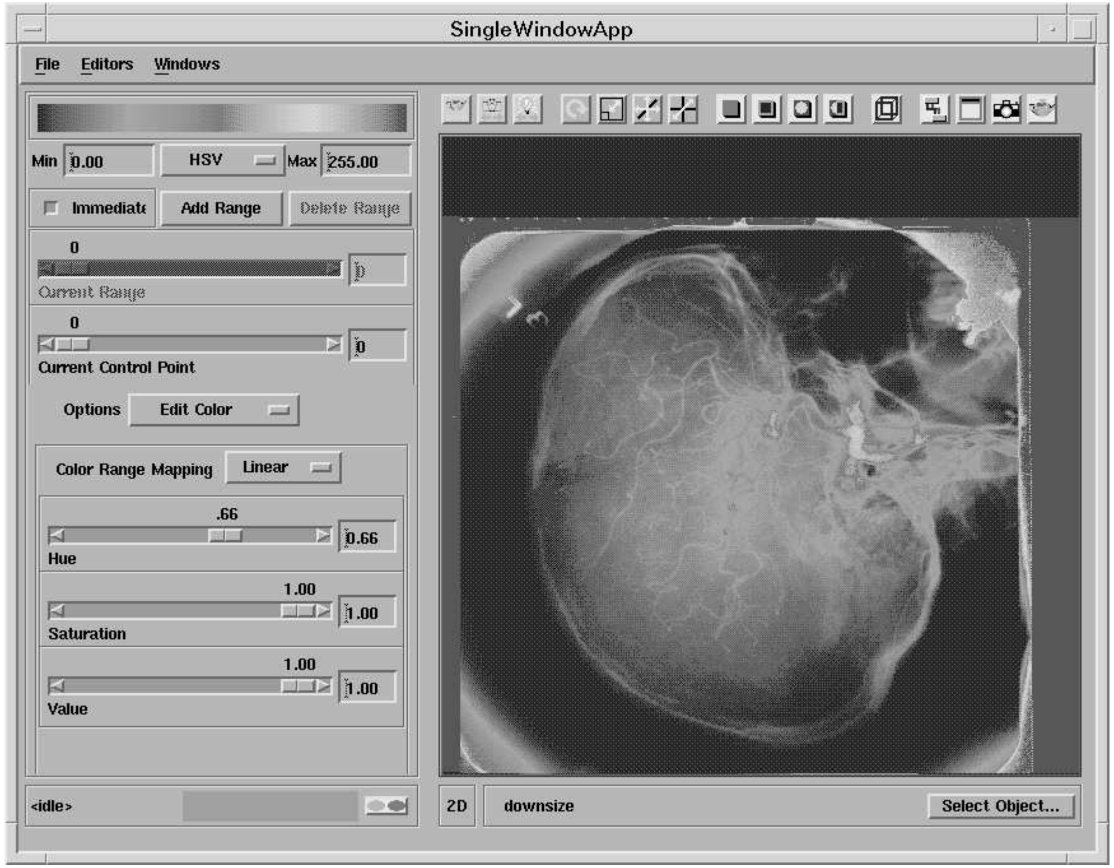
Down-sizing the data



Changing the colour map

- Image is coloured using default ***datamap***
- Datamap can be manipulated using the **datamap editor**
  - *must make the image the current object*
  - use “Select Object...” or CTRL-left
- With the datamap editor we can
  - separately colour different ranges of the data
  - use linearly *interpolated* or *constant* colour
  - use **RGB** or **HSV** colour
  - save and load predefined colour maps

Datamap editor



2D field exercise

Exercise 2 in Chapter 3