8 Appendix II

8.1 Solutions to chapter 3: field file exercises

8.1.1 Field descriptor for Exercise 1

```
# AVS field file
# Image
ndim=2
dim1=512
dim2=256
nspace=2
veclen=1
data=integer
field=uniform
variable 1 file=image.dat filetype=ascii skip=0 offset=0 stride=1
```

8.1.2 Field descriptor for Exercise 2

```
# AVS field file
# Volume
ndim=3
dim1=128
dim2=128
dim3=128
nspace=3
veclen=1
data=integer
field=uniform
variable 1 file=volume.dat filetype=ascii skip=1 offset=0 stride=1
```

8.1.3 Field descriptor for Exercise 3

```
# AVS field file
# Flow
ndim=2
dim1=5
dim2=10
nspace=2
veclen=2
data=float
field=irregular
label=temp press
units=K kg/m**2
variable 1 file=flow.dat filetype=ascii skip=0 offset=0 stride=2
variable 2 file=flow.dat filetype=ascii skip=0 offset=1 stride=2
coord 1 file=coord.dat filetype=ascii skip=0 offset=0 stride=2
coord 2 file=coord.dat filetype=ascii skip=0 offset=1 stride=2
```

8.2 Solutions to chapter 3: 2D data exercises

8.2.1 Field descriptor for Exercise 1: `mri.fld`

```
# AVS field file
# MRI
ndim=2
dim1=512
dim2=512
nspace=2
veclen=1
data=byte
field=uniform
variable 1 file=/usr/express/auxdata/mri.dat filetype=binary skip=0 stride=1
```

8.2.2 Field descriptor for Exercise 2: `temps.fld`

```
# AVS field file
# Temp
ndim=2
dim1=31
dim2=31
nspace=2
veclen=1
data=float
field=uniform
variable 1 file=/usr/express/auxdata/temps.dat filetype=ascii skip=1 stride=1
```

8.2.3 Field descriptor for Exercise 3: `hslice.fld`

```
# AVS field file
# Hydrogen
ndim=2
dim1=64
dim2=64
nspace=2
veclen=1
data=byte
field=uniform
variable 1 file=/usr/express/auxdata/hslice.dat filetype=binary skip=0 stride=1
```

8.3 Solutions to chapter 4: 3D data exercises

8.3.1 Field descriptor for Exercise 1: `fin.fld`

```
# AVS field file
# Bluntfin
ndim = 3
dim1 = 10
dim2 = 8
dim3 = 8
nspace = 3
veclen = 5
data = float
field = irregular
label = density x-momentum y-momentum z-momentum stagnation
variable 1 file=/usr/express/auxdata/fin.dat filetype=ascii skip=0 offset=0 -
  stride=8
variable 2 file=/usr/express/auxdata/fin.dat filetype=ascii skip=0 offset=1 -
  stride=8
variable 3 file=/usr/express/auxdata/fin.dat filetype=ascii skip=0 offset=2 -
  stride=8
variable 4 file=/usr/express/auxdata/fin.dat filetype=ascii skip=0 offset=3 -
  stride=8
variable 5 file=/usr/express/auxdata/fin.dat filetype=ascii skip=0 offset=4 -
  stride=8
coord 1 file=/usr/express/auxdata/fin.dat filetype=ascii skip=0 offset=5 -
  stride=8
coord 2 file=/usr/express/auxdata/fin.dat filetype=ascii skip=0 offset=6 -
  stride=8
coord 3 file=/usr/express/auxdata/fin.dat filetype=ascii skip=0 offset=7 -
  stride=8
```

8.3.2 Field descripters for Exercise 2

8.3.2.1 Scalar data

```
# AVS field file
# Climate Modelling - scalar data
ndim = 3
dim1 = 49
dim2 = 12
dim3 = 40
nspace = 3
veclen = 2
data = float
field = irregular
label = temperature specific humidity
variable 1 file=/usr/express/auxdata/temp.dat filetype=binary skip=16 offset=0
  stride=1
variable 2 file=/usr/express/auxdata/humid.dat filetype=binary skip=16 offset=0
  stride=1
coord 1 file=/usr/express/auxdata/ccm1.sph filetype=ascii skip=1 offset=0
  stride=1
coord 2 file=/usr/express/auxdata/ccm1.sph filetype=ascii skip=2941 offset=0
  stride=1
coord 3 file=/usr/express/auxdata/ccm1.sph filetype=ascii skip=5881 offset=0
  stride=1
```

8.3.2.2 Vector Data

```
# AVS field file
# Climate Modelling - vector data
ndim = 3
dim1 = 49
dim2 = 12
dim3 = 40
nspace = 3
veclen = 3
data = float
field = irregular
label = u-comp v-comp w-comp
variable 1 file=/usr/express/auxdata/bi.u.49 filetype=binary skip=16 offset=0
  stride=1
variable 2 file=/usr/express/auxdata/bi.w.49 filetype=binary skip=16 offset=0
  stride=1
variable 3 file=/usr/express/auxdata/bi.v.49 filetype=binary skip=16 offset=0
  stride=1
coord 1 file=/usr/express/auxdata/ccm1.rect filetype=ascii skip=1 offset=0
  stride=1
coord 2 file=/usr/express/auxdata/ccm1.rect filetype=ascii skip=2941 offset=0
  stride=1
coord 3 file=/usr/express/auxdata/ccm1.rect filetype=ascii skip=5881 offset=0
  stride=1
```

8.3.2.3 World Map

```
# AVS field file
# World Map
ndim = 3
dim1 = 49
dim2 = 12
dim3 = 40
nspace = 3
veclen = 1
data = float
field = irregular
variable 1 file=/usr/express/auxdata/world.asc filetype=ascii skip=1 offset=0
  stride=1
coord 1 file=/usr/express/auxdata/ccm1.rect filetype=ascii skip=1 offset=0
  stride=1
coord 2 file=/usr/express/auxdata/ccm1.rect filetype=ascii skip=2941 offset=0
  stride=1
coord 3 file=/usr/express/auxdata/ccm1.rect filetype=ascii skip=5881 offset=0
  stride=1
```

(Hint: For coordinates there are 49x12x40 values with 8 values on each line.)