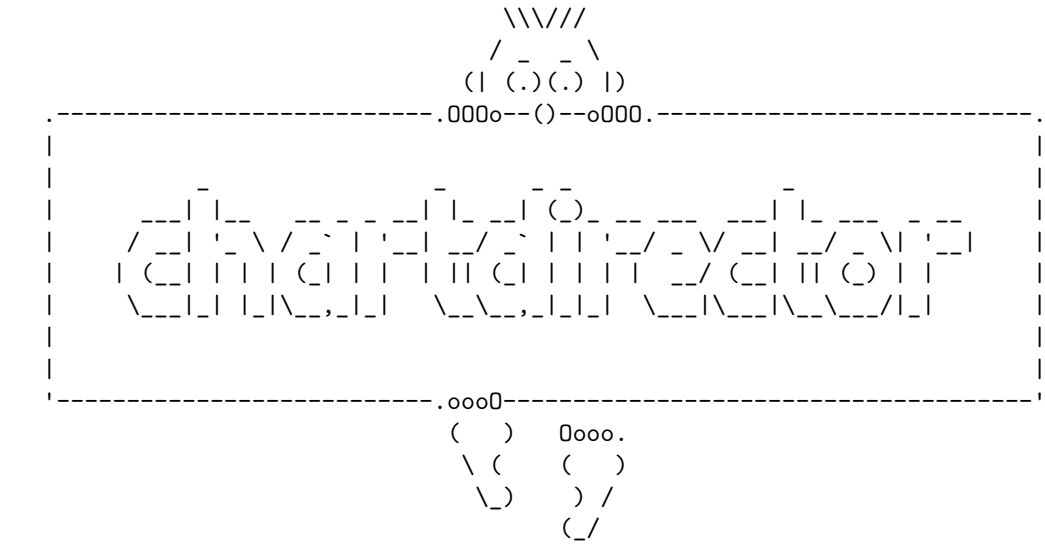


```
Codeblock class: shebang

    http://www.google.com/search?q=shebang+line

    runs:
    > <fname>.shebang {im_opt} <fname>.{im_fmt}

    class->cmd
      shebang -> shebang

Metadata options
    imagine.im_out: img,fcb
```

Notes:

- pip3 search pychartdir came up dry . . . , so
- download appropiate zip-file @ https://www.advsofteng.com/download.html
- `cd download-dir`
- `tar xvzf chardir_...._.tar.gz`
- `cd ChartDirector`
- read documenation -> xdg-open doc/cdpython.htm
- `mkdir -p ~/lib/python`
- `cp -R lib/* ~/lib/python`
- add ~/lib/python to your PYTHONPATH
- python script, save output to filename given by `sys.argv[-1]`
- image format should match `im_fmt` used to create a link to the image.

ChartDirector

The yellow bars in the images created by ChartDirector are because this is the demo-version without a license.

Line Chart

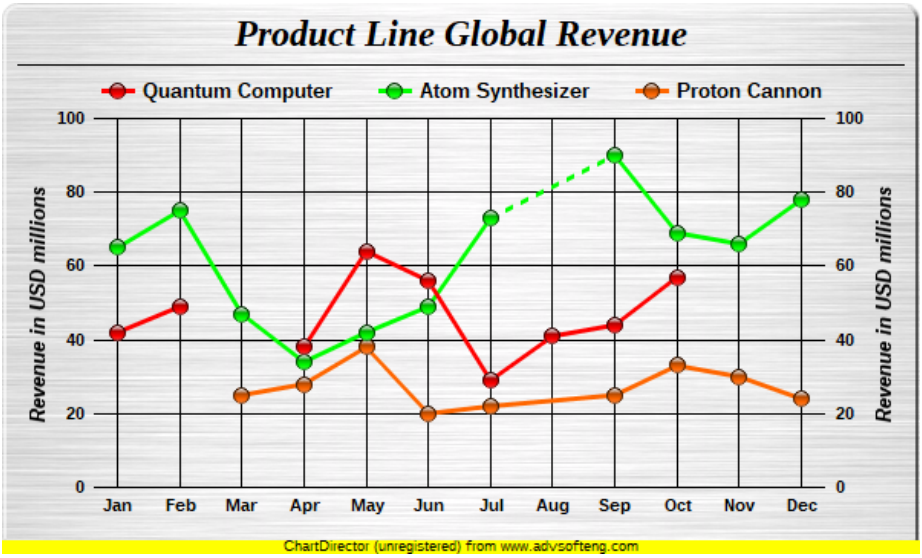


Figure 1: Created by ChartDirector

```{.shebang caption="Created by ChartDirector"}
#!/usr/bin/python
import os, sys
sys.path.insert(0, os.environ["HOME"] + "/lib/python")
from pychartdir import *

data0 = [42, 49, NoValue, 38, 64, 56, 29, 41, 44, 57]
data1 = [65, 75, 47, 34, 42, 49, 73, NoValue, 90, 69, 66, 78]
data2 = [NoValue, NoValue, 25, 28, 38, 20, 22, NoValue, 25, 33, 30, 24]
labels = ["Jan", "Feb", "Mar", "Apr", "May", "Jun", "Jul",
          "Aug", "Sep", "Oct", "Nov", "Dec"]
c = XYChart(600, 360, brushedSilverColor(), Transparent, 2)
c.setRoundedFrame()
title = c.addTitle("Product Line Global Revenue", "timesbi.ttf", 18)
title.setMargin2(0, 0, 6, 6)
c.addLine(10, title.getHeight(), c.getWidth() - 11,
          title.getHeight(), LineColor)
```

```
legendBox = c.addLegend(c.getWidth() / 2, title.getHeight(),
                        0, "arialbd.ttf", 10)
legendBox.setAlignment(TopCenter)
legendBox.setBackground(Transparent, Transparent)
c.setPlotArea(70, 75, 460, 240, -1, -1, Transparent, 0x000000, -1)
c.xAxis().setLabels(labels)
c.syncYAxis()
c.yAxis().setTickDensity(30)
c.xAxis().setColors(Transparent)
c.yAxis().setColors(Transparent)
c.yAxis2().setColors(Transparent)
c.xAxis().setMargin(15, 15)
c.xAxis().setLabelStyle("arialbd.ttf", 8)
c.yAxis().setLabelStyle("arialbd.ttf", 8)
c.yAxis2().setLabelStyle("arialbd.ttf", 8)
c.yAxis().setTitle("Revenue in USD millions", "arialbi.ttf", 10)
c.yAxis2().setTitle("Revenue in USD millions", "arialbi.ttf", 10)
layer0 = c.addLineLayer2()
layer0.addDataSet(data0, 0xff0000, "Quantum Computer").setDataSymbol(GlassSphere2Shape, 11)
layer0.setLineWidth(3)
layer1 = c.addLineLayer2()
layer1.addDataSet(data1, 0x00ff00, "Atom Synthesizer").setDataSymbol(GlassSphere2Shape, 11)
layer1.setLineWidth(3)
layer1.setGapColor(c.dashLineColor(0x00ff00))
layer2 = c.addLineLayer2()
layer2.addDataSet(data2, 0xff6600, "Proton Cannon").setDataSymbol(GlassSphere2Shape, 11)
layer2.setLineWidth(3)
layer2.setGapColor(SameAsMainColor)
c.layoutLegend()
c.packPlotArea(15, legendBox.getTopY() + legendBox.getHeight(), c.getWidth() - 16, c.getHeig
    ) - 25)

c.makeChart(sys.argv[-1])
```

Surface

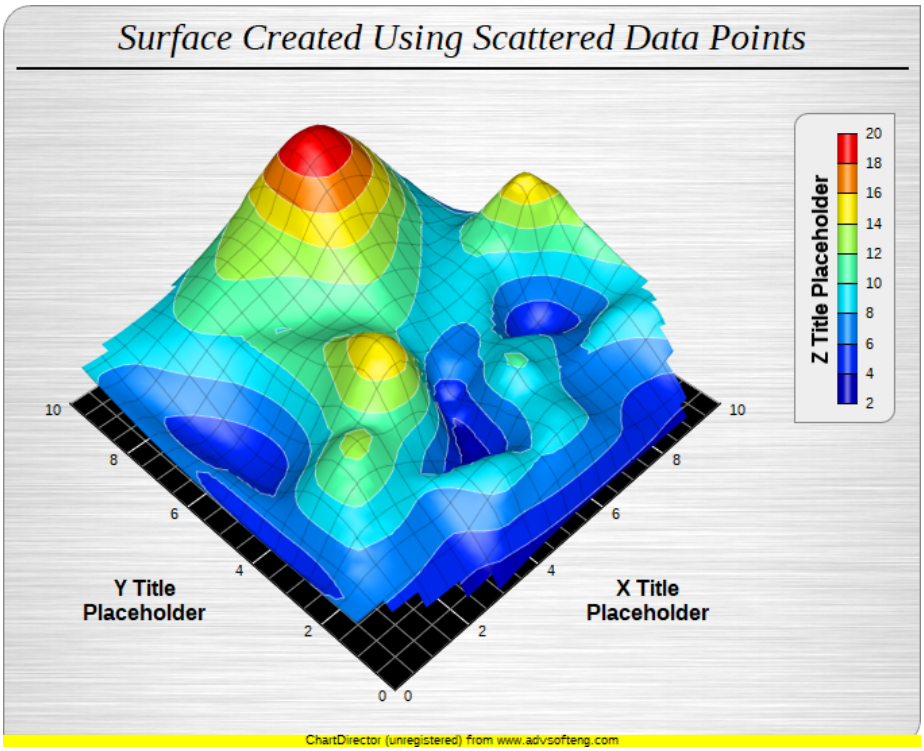


Figure 2: Created by ChartDirector

```{.shebang caption="Created by ChartDirector"}
#!/usr/bin/python
import os, sys
sys.path.insert(0, os.environ["HOME"] + "/lib/python")
from pychartdir import *

dataX = [0.5, 1.9, 4.9, 1.0, 8.9, 9.8, 5.9, 2.9, 6.8, 9.0,
         0.0, 8.9, 1.9, 4.8, 2.4, 3.4, 7.9, 7.5, 4.8, 7.5,
         9.5, 0.4, 8.9, 0.9, 5.4, 9.4, 2.9, 8.9, 0.9, 8.9,
         10.0, 1.0, 6.8, 3.8, 9.0, 5.3, 6.4, 4.9, 4.5, 2.0,
         5.4, 0.0, 10.0, 3.9, 5.4, 5.9, 5.8, 0.3, 4.4, 8.3]
dataY = [3.3, 3.0, 0.7, 1.0, 9.3, 4.5, 8.4, 0.1, 0.8, 0.1,
         9.3, 1.8, 4.3, 1.3, 2.3, 5.4, 6.9, 9.0, 9.8, 7.5,
         1.8, 1.4, 4.5, 7.8, 3.8, 4.0, 2.9, 2.4, 3.9, 2.9,
         2.3, 9.3, 2.0, 3.4, 4.8, 2.3, 3.4, 2.3, 1.5, 7.8,
         4.5, 0.9, 6.3, 2.4, 6.9, 2.8, 1.3, 2.9, 6.4, 6.3]
dataZ = [6.6, 12.5, 7.4, 6.2, 9.6, 13.6, 19.9, 2.2, 6.9,
```

```
        3.4, 8.7, 8.4, 7.8, 8.0, 9.4, 11.9, 9.6, 15.7,
        12.0, 13.3, 9.6, 6.4, 9.0, 6.9, 4.6, 9.7, 10.6,
        9.2, 7.0, 6.9, 9.7, 8.6, 8.0, 13.6, 13.2, 5.9,
        9.0, 3.2, 8.3, 9.7, 8.2, 6.1, 8.7, 5.6, 14.9,
        9.8, 9.3, 5.1, 10.8, 9.8]
c = SurfaceChart(680, 550, brushedSilverColor(), 0x888888)
c.setRoundedFrame(0xffffff, 20, 0, 20, 0)
title = c.addTitle("Surface Created Using Scattered Data Points", "timesi.ttf", 20)
title.setMargin2(0, 0, 8, 8)
c.addLine(10, title.getHeight(), c.getWidth() - 10, title.getHeight(), 0x000000, 2)
c.setPlotRegion(290, 235, 360, 360, 180)
c.setViewAngle(45, -45)
c.setPerspective(30)
c.setData(dataX, dataY, dataZ)
cAxis = c.setColorAxis(660, 80, TopRight, 200, Right)
cAxis.setTitle("Z Title Placeholder", "arialbd.ttf", 12)
cAxis.setBoundingBox(0xeeeeee, 0x888888)
cAxis.setRoundedCorners(10, 0, 10, 0)
c.setSurfaceAxisGrid(0xcc000000)
c.setContourColor(0x80ffffff)
c.setWallColor(0x000000)
c.setWallGrid(0xffffff, 0xffffff, 0xffffff, 0x888888, 0x888888, 0x888888)
c.setWallThickness(0, 0, 0)
c.setWallVisibility(1, 0, 0)
c.xAxis().setTitle("X Title\nPlaceholder", "arialbd.ttf", 12)
c.yAxis().setTitle("Y Title\nPlaceholder", "arialbd.ttf", 12)
c.makeChart(sys.argv[-1])
```

Gauge

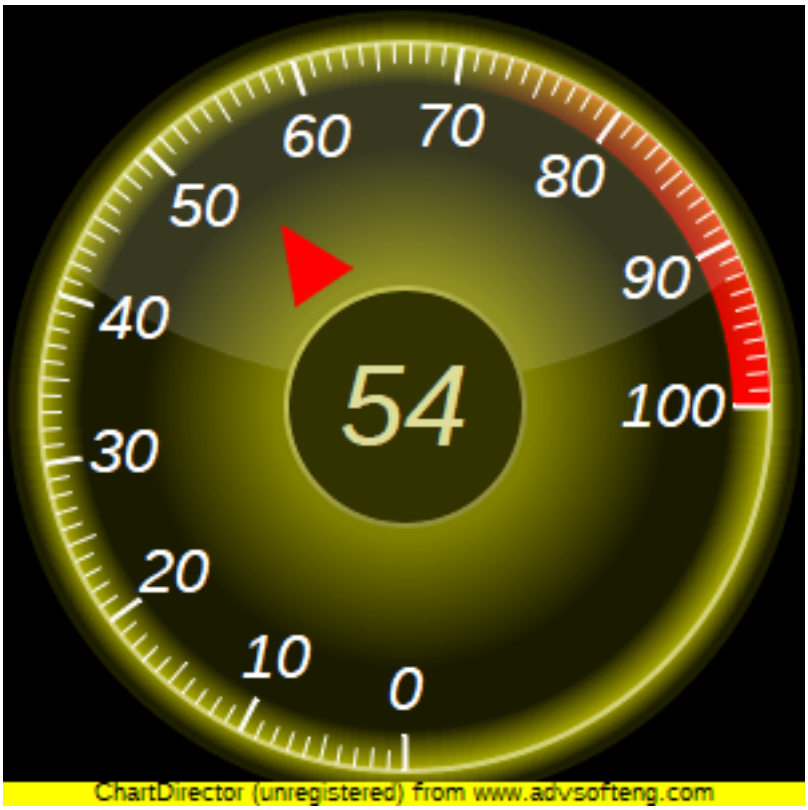


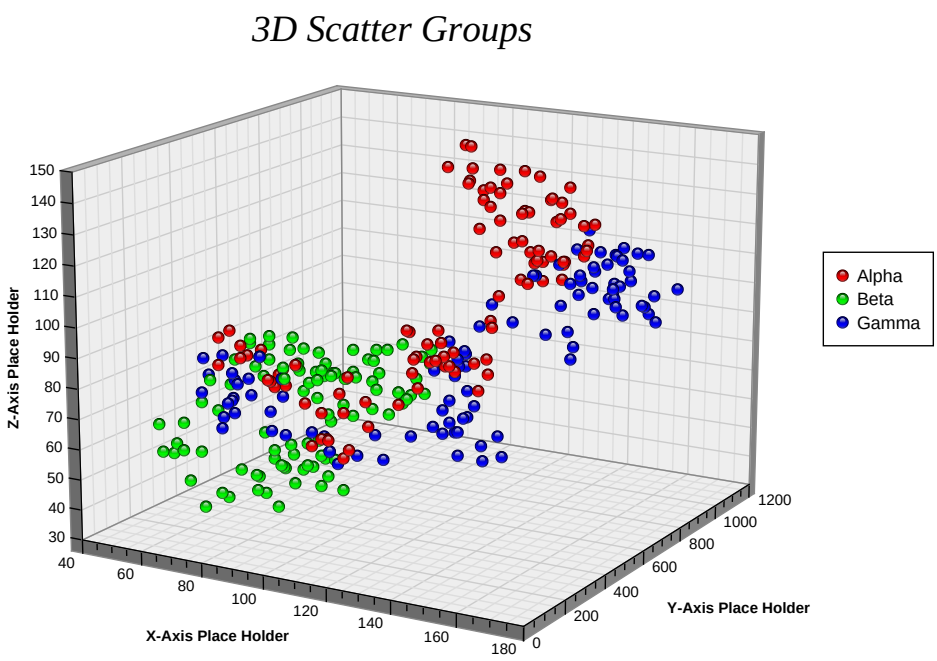
Figure 3: Created by ChartDirector

```{.shebang caption="Created by ChartDirector"}
#!/usr/bin/python
import os, sys
sys.path.insert(0, os.environ["HOME"] + "/lib/python")
from pychartdir import *

value = 54
colorList = [0x0033dd, 0xaaaa00]
mainColor = colorList[1]
size = 300
outerRadius = int(size / 2 - 2)
scaleRadius = int(outerRadius * 92 / 100)
colorScaleRadius = int(scaleRadius * 43 / 100)
colorScaleWidth = int(scaleRadius * 10 / 100)
tickLength = int(scaleRadius * 10 / 100)
```

```
tickWidth = int(scaleRadius * 1 / 100 + 1)
fontSize = int(scaleRadius * 13 / 100)
readOutRadiusRatio = 0.333333333333
readOutFontSize = int(scaleRadius * 24 / 100)
m = AngularMeter(size, size, 0x000000)
m.setColor(TextColor, 0xffffff)
m.setColor(LineColor, 0xffffff)
m.setMeter(size / 2, size / 2, scaleRadius, -180, 90)
bgGradient = [0, mainColor, 0.5, m.adjustBrightness(mainColor, 0.75), 1, m.adjustBrightness(
    mainColor, 0.15)]
m.addRing(0, outerRadius, m.relativeRadialGradient(bgGradient, outerRadius * 0.66))
neonGradient = [0.89, Transparent, 1, mainColor, 1.07, Transparent]
m.addRing(int(scaleRadius * 85 / 100), outerRadius, m.relativeRadialGradient(neonGradient))
m.addRing(scaleRadius, int(scaleRadius + scaleRadius / 80), m.adjustBrightness(mainColor, 2)
m.setScale(0, 100, 10, 5, 1)
m.setLabelStyle("ariali.ttf", fontSize)
m.setTickLength( - tickLength,  - int(tickLength * 80 / 100),  - int(tickLength * 60 / 100))
m.setLineWidth(0, tickWidth, int((tickWidth + 1) / 2), int((tickWidth + 1) / 2))
smoothColorScale = [0, 0x0000ff, 25, 0x0088ff, 50, 0x00ff00, 75, 0xdddd00, 100, 0xff0000]
highColorScale = [70, Transparent, 100, 0xff0000]
m.addColorScale(highColorScale)
m.addPointer2(value, 0xff0000, -1, TriangularPointer2, 0.4, 0.6, 6)
m.setCap2(Transparent, m.adjustBrightness(mainColor, 0.3), m.adjustBrightness(mainColor, 1.5
    0.75, 0, readOutRadiusRatio, 0.015)
m.addText(size / 2, size / 2, m.formatValue(value, "{value|0}"), "ariali.ttf", readOutFontSi
    m.adjustBrightness(mainColor, 2.5), Center).setMargin(0)
m.addGlare(scaleRadius)
m.makeChart(sys.argv[-1])
```

Scatter group (pdf)




```{.shebang im_fmt="pdf" width="120%"}
#!/usr/bin/env python
import sys  # required in order to pickup filename from sys.argv
from pychartdir import *

# The random XYZ data for the first 3D scatter group
r0 = RanSeries(7)
xData0 = r0.getSeries2(100, 100, -10, 10)
yData0 = r0.getSeries2(100, 0, 0, 20)
zData0 = r0.getSeries2(100, 100, -10, 10)

# The random XYZ data for the second 3D scatter group
r1 = RanSeries(4)
xData1 = r1.getSeries2(100, 100, -10, 10)
yData1 = r1.getSeries2(100, 0, 0, 20)
zData1 = r1.getSeries2(100, 100, -10, 10)

# The random XYZ data for the third 3D scatter group
r2 = RanSeries(8)
xData2 = r2.getSeries2(100, 100, -10, 10)
```

```
yData2 = r2.getSeries2(100, 0, 0, 20)
zData2 = r2.getSeries2(100, 100, -10, 10)

# Create a ThreeDScatterChart object of size 800 x 520 pixels
c = ThreeDScatterChart(800, 520)
c.enableVectorOutput()  # tst

# Add a title to the chart using 20 points Times New Roman Italic font
c.addTitle("3D Scatter Groups                    ", "timesi.ttf", 20)

# Set the center of the plot region at (350, 240), and set width x depth x height to 360 x 3
# pixels
c.setPlotRegion(350, 240, 360, 360, 270)

# Set the elevation and rotation angles to 15 and 30 degrees
c.setViewAngle(15, 30)

# Add a legend box at (640, 180)
c.addLegend(640, 180)

# Add 3 scatter groups to the chart with 9 pixels glass sphere symbols of red (ff0000), gree
# (00ff00) and blue (0000ff) colors
c.addScatterGroup(xData0, yData0, zData0, "Alpha", GlassSphere2Shape, 9, 0xff0000)
c.addScatterGroup(xData1, yData1, zData1, "Beta", GlassSphere2Shape, 9, 0x00ff00)
c.addScatterGroup(xData2, yData2, zData2, "Gamma", GlassSphere2Shape, 9, 0x0000ff)

# Set the x, y and z axis titles
c.xAxis().setTitle("X-Axis Place Holder")
c.yAxis().setTitle("Y-Axis Place Holder")
c.zAxis().setTitle("Z-Axis Place Holder")

# Output the chart
c.makeChart(sys.argv[-1])
```

Documentation

See *ChartDirector* and the `doc` directory of the extracted archive.