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## Viewer Recipes

The Viewer classes are in the [geoscript.viewer](#) package.

### Drawing geometries

*Draw a geometry in a simple GUI*

```
Polygon polygon = new Polygon([[
    [-101.35986328125, 47.754097979680026],
    [-101.5576171875, 46.93526088057719],
    [-100.12939453125, 46.51351558059737],
    [-99.77783203125, 47.44294999517949],
    [-100.45898437499999, 47.88688085106901],
    [-101.35986328125, 47.754097979680026]
]])
Viewer.draw(polygon)
```



*Draw a geometry to an image*

```
Polygon polygon = new Polygon([[
    [-101.35986328125, 47.754097979680026],
    [-101.5576171875, 46.93526088057719],
    [-100.12939453125, 46.51351558059737],
    [-99.77783203125, 47.44294999517949],
    [-100.45898437499999, 47.88688085106901],
    [-101.35986328125, 47.754097979680026]
]])
BufferedImage image = Viewer.drawToImage(polygon)
```



*Draw a geometry to an image with options*

```
Polygon polygon = new Polygon([[
    [-101.35986328125, 47.754097979680026],
    [-101.5576171875, 46.93526088057719],
    [-100.12939453125, 46.51351558059737],
    [-99.77783203125, 47.44294999517949],
    [-100.45898437499999, 47.88688085106901],
    [-101.35986328125, 47.754097979680026]
]])
BufferedImage image = Viewer.drawImage(
    polygon,
    size: [200,200],
    drawCoords: true,
    fillCoords: true,
    fillPolys: true
)
```



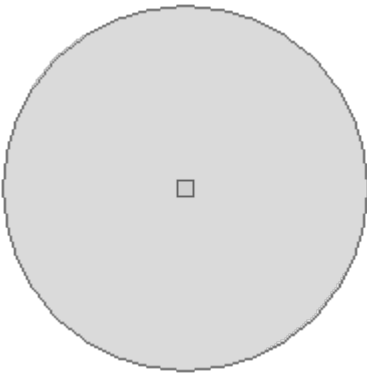
*Draw a List of geometries to an image*

```
Point point = new Point(-123.11, 47.23)
Geometry buffer = point.buffer(4)
Geometry bounds = buffer.bounds.geometry
BufferedImage image = Viewer.drawToImage(
    [bounds, buffer, point],
    size: [200,200],
    drawCoords: true,
    fillCoords: true,
    fillPolys: true
)
```



*Draw a List of Geometries to a File*

```
Point point = new Point(-123.11, 47.23)
Geometry buffer = point.buffer(4)
File file = new File("geometry.png")
Viewer.drawToFile([buffer, point], file, size: [200,200])
```



*Draw a Geometry to a Base64 Encoded String*

```
Polygon polygon = new Polygon([[
    [-101.35986328125, 47.754097979680026],
    [-101.5576171875, 46.93526088057719],
    [-100.12939453125, 46.51351558059737],
    [-99.77783203125, 47.44294999517949],
    [-100.45898437499999, 47.88688085106901],
    [-101.35986328125, 47.754097979680026]
]])
String base64EncodedString = Viewer.drawToBase64EncodedString(polygon)
println base64EncodedString
```

```
image/png;base64,iVBORw0KGgoAAAANSUhEUgAAAFQAAAH0CAYAAADL1t+KAAAK70LEQVR42u3cQQrryLJFU
c9VA/UMNCUbNRLcsLCRlKnIiLVhwWv81qX+PURa...
```

## Plotting geometries

*Plot a geometry in a simple GUI*

```
Polygon polygon = new Polygon([[
    [-101.35986328125, 47.754097979680026],
    [-101.5576171875, 46.93526088057719],
    [-100.12939453125, 46.51351558059737],
    [-99.77783203125, 47.44294999517949],
    [-100.45898437499999, 47.88688085106901],
    [-101.35986328125, 47.754097979680026]
]])
Viewer.plot(polygon)
```



*Plot a Geometry to an image*

```
Polygon polygon = new Polygon([[
    [-101.35986328125, 47.754097979680026],
    [-101.5576171875, 46.93526088057719],
    [-100.12939453125, 46.51351558059737],
    [-99.77783203125, 47.44294999517949],
    [-100.45898437499999, 47.88688085106901],
    [-101.35986328125, 47.754097979680026]
]])
BufferedImage image = Viewer.plotToImage(polygon)
```



*Plot a List of Geometries to an image*

```
Point point = new Point(-123.11, 47.23)
Geometry buffer = point.buffer(4)
Geometry bounds = buffer.bounds.geometry
BufferedImage image = Viewer.plotToImage(
    [bounds, buffer, point],
    size: [300,300],
    drawCoords: true,
    fillCoords: true,
    fillPolys: true
)
```



### Plot a Geometry to a File

```

Point point = new Point(-123.11, 47.23)
Geometry buffer = point.buffer(4)
File file = new File("geometry.png")
Viewer.plotToFile([buffer, point], file, size: [300,300])
  
```

