

Charting.java

```
1 import com.cete.dynamicpdf.*;
2 import com.cete.dynamicpdf.pageelements.*;
3 import com.cete.dynamicpdf.pageelements.charting.*;
4 import com.cete.dynamicpdf.pageelements.charting.axes.*;
5 import com.cete.dynamicpdf.pageelements.charting.series.*;
6 import java.io.IOException;
7 import javax.servlet.ServletConfig;
8 import javax.servlet.ServletException;
9 import javax.servlet.ServletOutputStream;
10 import javax.servlet.http.HttpServlet;
11 import javax.servlet.http.HttpServletRequest;
12 import javax.servlet.http.HttpServletResponse;
13
14
15 public class Charting extends HttpServlet {
16
17     ServletOutputStream sOut;
18
19     public void init(ServletConfig config) throws ServletException {
20         super.init(config);
21     }
22
23     public void doGet(HttpServletRequest req, HttpServletResponse res)
24     throws IOException,ServletException {
25
26         sOut = res.getOutputStream();
27         // Create a document and set it's properties
28         Document objDocument = new Document();
29         objDocument.setCreator("Charting.java");
30         Page objPage = new Page();
31         addCharts(objDocument);
32
33         // Outputs the document to current web page.
34         objDocument.drawToWeb(req, res , sOut, "Charting.pdf");
35         sOut.close();
36     }
37
38     private void addCharts(Document document) {
39         // Create a Template and assign it to the document
40         Template documentTemplate = new Template();
41         document.setTemplate(documentTemplate);
42         documentTemplate.getElements().add(new PageNumberingLabel(
43             "Page %%CP%% of %%TP%%", 100,525, 512, 12, Font.getHelvetica(),
44             12, TextAlign.CENTER));
45
46         // Create a Page
47         Page page1 = new Page(PageSize.LETTER, PageOrientation.LANDSCAPE,35);
48         Page page2 = new Page(PageSize.LETTER, PageOrientation.LANDSCAPE);
49     }
```

```
50 // Adds charts to the Page
51 addAreaChart(page1.getElements(), 0, 40);
52 addPieChart(page1.getElements(), 0, 280);
53 addLineChart(page1.getElements(), 250, 40);
54 addBarChart(page1.getElements(), 250, 280);
55 addColumnChart(page1.getElements(), 500, 40);
56 addXYScatterChart(page1.getElements(), 500, 280);
57 addMultiTypeSeriesChart(page2.getElements(), 20, 50);
58
59
60 // Add Pages to the document
61 document.getPages().add(page2);
62 document.getPages().add(page1);
63 }
64
65 private void addAreaChart(Group elements, float x, float y) {
66     addCaptionAndRectangle(elements, "Stacked Area Chart", x, y, 225, 225);
67
68     // Create a chart
69     Chart chart = new Chart(x + 10, y + 25, 200, 200, Font.getHelvetica(), 10, RgbColor.getBlack());
70
71     // Create a plot area
72     PlotArea plotArea = chart.getPrimaryPlotArea();
73
74     // Create header titles and add it to the chart
75     Title title1 = new Title("Website Visitors");
76     chart.getHeaderTitles().add(title1);
77
78     // Create indexed stacked area series elements and add values to it
79     IndexedStackedAreaSeriesElement seriesElement1 = new IndexedStackedAreaSeriesElement("Website A");
80     seriesElement1.getValues().add(new float[] { 5, 7, 9, 6 });
81     IndexedStackedAreaSeriesElement seriesElement2 = new IndexedStackedAreaSeriesElement("Website B");
82     seriesElement2.getValues().add(new float[] { 4, 2, 5, 8 });
83     IndexedStackedAreaSeriesElement seriesElement3 = new IndexedStackedAreaSeriesElement("Website C");
84     seriesElement3.getValues().add(new float[] { 2, 4, 6, 9 });
85
86     // Create autogradient and add it to the series
87     AutoGradient autogradient1 = new AutoGradient(90f, CmykColor.getRed(), CmykColor.getIndianRed());
88     seriesElement1.setColor(autogradient1);
89     AutoGradient autogradient2 = new AutoGradient(90f, CmykColor.getGreen(), CmykColor.getYellowGreen());
90     seriesElement2.setColor(autogradient2);
91     AutoGradient autogradient3 = new AutoGradient(120f, CmykColor.getBlue(), CmykColor.getLightBlue());
92     seriesElement3.setColor(autogradient3);
93
94     // Create a Indexed Stacked Area Series
95     IndexedStackedAreaSeries areaSeries = new IndexedStackedAreaSeries();
96
97     // Add indexed stacked area series elements to the Indexed Stacked Area Series
98     areaSeries.add(seriesElement1);
```

```
99     areaSeries.add(seriesElement2);
100    areaSeries.add(seriesElement3);
101
102    // Add series to the plot area
103    plotArea.getSeries().add(areaSeries);
104
105    // Create a title and add it to the YAxis
106    Title lTitle = new Title("Visitors (in millions)");
107    areaSeries.getYAxis().getTitles().add(lTitle);
108
109    //Adding AxisLabels to the XAxis
110    areaSeries.getXAxis().getLabels().add(new IndexedXAxisLabel("Q1", 0));
111    areaSeries.getXAxis().getLabels().add(new IndexedXAxisLabel("Q2", 1));
112    areaSeries.getXAxis().getLabels().add(new IndexedXAxisLabel("Q3", 2));
113    areaSeries.getXAxis().getLabels().add(new IndexedXAxisLabel("Q4", 3));
114    chart.getLegends().getLegend(0).setVisible(false);
115    elements.add(chart);
116 }
117
118 private void addLineChart(Group elements, float x, float y) {
119     addCaptionAndRectangle(elements, "Line Chart", x, y, 225, 225);
120
121     // Create a chart
122     Chart chart = new Chart(x + 10, y + 25, 200, 200, Font.getHelvetica(), 10, RgbColor.getBlack());
123
124     // Create a plot area
125     PlotArea plotArea = chart.getPrimaryPlotArea();
126
127     // Create header titles and add it to the chart
128     Title title1 = new Title("Website Visitors");
129     chart.getHeaderTitles().add(title1);
130
131     // Create a indexed line series and add values to it
132     IndexedLineSeries lineSeries1 = new IndexedLineSeries("Website A");
133     lineSeries1.getValues().add(new float[] { 5, 7, 9, 6 });
134     IndexedLineSeries lineSeries2 = new IndexedLineSeries("Website B");
135     lineSeries2.getValues().add(new float[] { 4, 2, 5, 8 });
136     IndexedLineSeries lineSeries3 = new IndexedLineSeries("Website C");
137     lineSeries3.getValues().add(new float[] { 2, 4, 6, 9 });
138
139     // Add indexed line series to the plot area
140     plotArea.getSeries().add(lineSeries1);
141     plotArea.getSeries().add(lineSeries2);
142     plotArea.getSeries().add(lineSeries3);
143
144     // Create a title and add it to the yaxis
145     Title lTitle = new Title("Visitors (in millions)");
146     lineSeries1.getYAxis().getTitles().add(lTitle);
147 }
```

```
148 //Adding AxisLabels to the XAxis
149 lineSeries1.getXAxis().getLabels().add(new IndexedXAxisLabel("Q1", 0));
150 lineSeries1.getXAxis().getLabels().add(new IndexedXAxisLabel("Q2", 1));
151 lineSeries1.getXAxis().getLabels().add(new IndexedXAxisLabel("Q3", 2));
152 lineSeries1.getXAxis().getLabels().add(new IndexedXAxisLabel("Q4", 3));
153 chart.getLegends().getLegend(0).setVisible(false);
154 elements.add(chart);
155 }
156
157 private void addPieChart(Group elements, float x, float y) {
158     addCaptionAndRectangle(elements, "Pie Chart", x, y, 225, 225);
159
160     // Create a chart
161     Chart chart = new Chart(x + 10, y + 25, 200, 200, Font.getHelvetica(), 10, RgbColor.getBlack());
162
163     // Add a plot area to the chart
164     PlotArea plotArea = chart.getPlotAreas().add(50, 50, 300, 300);
165
166     // Create the Header titles and add it to the chart
167     Title tTitle = new Title("Website Visitors (in millions)");
168     chart.getHeaderTitles().add(tTitle);
169
170     // Create autogradient and add it to the series
171     AutoGradient autogradient1 = new AutoGradient(90f, CmykColor.getRed(), CmykColor.getIndianRed());
172     AutoGradient autogradient2 = new AutoGradient(90f, CmykColor.getGreen(), CmykColor.getYellowGreen());
173     AutoGradient autogradient3 = new AutoGradient(90f, CmykColor.getBlue(), CmykColor.getLightBlue());
174
175     // Create a scalar datalabel
176     ScalarDataLabel da = new ScalarDataLabel(true, false, false);
177
178     // Create a pie series
179     PieSeries pieSeries = new PieSeries();
180
181     // Set scalar datalabel to the pie series
182     pieSeries.setDataLabel(da);
183
184     // Add series to the plot area
185     plotArea.getSeries().add(pieSeries);
186
187     //Add pie series elements to the pie series
188     pieSeries.getElements().add(27, "Website A");
189     pieSeries.getElements().add(19, "Website B");
190     pieSeries.getElements().add(21, "Website C");
191
192     // Assign autogradient colors to series elements
193     pieSeries.getElements().getElement(0).setColor(autogradient1);
194     pieSeries.getElements().getElement(1).setColor(autogradient2);
195     pieSeries.getElements().getElement(2).setColor(autogradient3);
196
```

```
197     chart.getLegends().getLegend(0).setVisible(false);
198     elements.add(chart);
199 }
200
201 private void addBarChart(Group elements, float x, float y) {
202     addCaptionAndRectangle(elements, "Bar Chart", x, y, 225, 225);
203
204     // Create a chart
205     Chart chart = new Chart(x + 10, y + 25, 200, 200, Font.getHelvetica(), 10, RgbColor.getBlack());
206
207     // Create a plot area
208     PlotArea plotArea = chart.getPrimaryPlotArea();
209     // Create header titles and add it to the chart
210
211     Title title1 = new Title("Website Visitors");
212     chart.getHeaderTitles().add(title1);
213
214     // Create a indexed bar series and add values to it
215     IndexedBarSeries barSeries1 = new IndexedBarSeries("Website A");
216     barSeries1.getValues().add(new float[] { 5, 7, 9, 6 });
217     IndexedBarSeries barSeries2 = new IndexedBarSeries("Website B");
218     barSeries2.getValues().add(new float[] { 4, 2, 5, 8 });
219     IndexedBarSeries barSeries3 = new IndexedBarSeries("Website C");
220     barSeries3.getValues().add(new float[] { 2, 4, 6, 9 });
221
222     // Create autogradient and add it to the series
223     AutoGradient autogradient1 = new AutoGradient(180f, CmykColor.getRed(), CmykColor.getIndianRed());
224     barSeries1.setColor(autogradient1);
225     AutoGradient autogradient2 = new AutoGradient(180f, CmykColor.getGreen(), CmykColor.getYellowGreen());
226     barSeries2.setColor(autogradient2);
227     AutoGradient autogradient3 = new AutoGradient(180f, CmykColor.getBlue(), CmykColor.getLightBlue());
228     barSeries3.setColor(autogradient3);
229
230     // Add indexed bar series to the plot area
231     plotArea.getSeries().add(barSeries1);
232     plotArea.getSeries().add(barSeries2);
233     plotArea.getSeries().add(barSeries3);
234
235     // Create a title and add it to the xaxis
236     Title lTitle = new Title("Visitors (in millions)");
237     barSeries1.getXAxis().getTitles().add(lTitle);
238
239     //Adding AxisLabels to the yAxis
240     barSeries1.getYAxis().getLabels().add(new IndexedYAxisLabel("Q1", 0));
241     barSeries1.getYAxis().getLabels().add(new IndexedYAxisLabel("Q2", 1));
242     barSeries1.getYAxis().getLabels().add(new IndexedYAxisLabel("Q3", 2));
243     barSeries1.getYAxis().getLabels().add(new IndexedYAxisLabel("Q4", 3));
244     chart.getLegends().getLegend(0).setVisible(false);
245     elements.add(chart);
```

```
246     }
247
248     private void addColumnChart(Group elements, float x, float y) {
249         addCaptionAndRectangle(elements, "100% Stacked Column Chart", x, y, 225, 225);
250
251         // Create a chart
252         Chart chart = new Chart(x + 10, y + 25, 200, 200, Font.getHelvetica(), 10, RgbColor.getBlack());
253
254         // Create a plot area
255         PlotArea plotArea = chart.getPrimaryPlotArea();
256
257         // Create header titles and add it to the chart
258         Title title1 = new Title("Website Visitors");
259         chart.getHeaderTitles().add(title1);
260
261         // Create a indexed 100% column series elements and add values to it
262         Indexed100PercentStackedColumnSeriesElement seriesElement1 = new Indexed100PercentStackedColumnSeriesElement("Website
A");
263         seriesElement1.getValues().add(new float[] { 5, 7, 9, 6 });
264         Indexed100PercentStackedColumnSeriesElement seriesElement2 = new Indexed100PercentStackedColumnSeriesElement("Website
B");
265         seriesElement2.getValues().add(new float[] { 4, 2, 5, 8 });
266         Indexed100PercentStackedColumnSeriesElement seriesElement3 = new Indexed100PercentStackedColumnSeriesElement("Website
C");
267         seriesElement3.getValues().add(new float[] { 2, 4, 6, 9 });
268
269         // Create autogradient and add it to the series
270         AutoGradient autogradient1 = new AutoGradient(90f, CmykColor.getRed(), CmykColor.getIndianRed());
271         seriesElement1.setColor(autogradient1);
272         AutoGradient autogradient2 = new AutoGradient(90f, CmykColor.getGreen(), CmykColor.getYellowGreen());
273         seriesElement2.setColor(autogradient2);
274         AutoGradient autogradient3 = new AutoGradient(120f, CmykColor.getBlue(), CmykColor.getLightBlue());
275         seriesElement3.setColor(autogradient3);
276
277         // Create a Indexed 100% Stacked Column Series
278         Indexed100PercentStackedColumnSeries columnSeries = new Indexed100PercentStackedColumnSeries();
279
280         // Add indexed 100% column series elements to the Indexed 100% Stacked Column Series
281         columnSeries.add(seriesElement1);
282         columnSeries.add(seriesElement2);
283         columnSeries.add(seriesElement3);
284
285         // Add series to the plot area
286         plotArea.getSeries().add(columnSeries);
287
288         // Create a title and add it to the yaxis
289         Title lTitle = new Title("Visitors (in millions)");
290         columnSeries.getYAxis().getTitles().add(lTitle);
291     }
```

```
292 //Adding AxisLabels to the XAxis
293 columnSeries.getXAxis().getLabels().add(new IndexedXAxisLabel("Q1", 0));
294 columnSeries.getXAxis().getLabels().add(new IndexedXAxisLabel("Q2", 1));
295 columnSeries.getXAxis().getLabels().add(new IndexedXAxisLabel("Q3", 2));
296 columnSeries.getXAxis().getLabels().add(new IndexedXAxisLabel("Q4", 3));
297 chart.getLegends().getLegend(0).setVisible(false);
298 elements.add(chart);
299 }
300
301 private void addXYScatterChart(Group elements, float x, float y) {
302     addCaptionAndRectangle(elements, "XYScatter Chart", x, y, 225, 225);
303
304     // Create a chart
305     Chart chart = new Chart(x + 10, y + 25, 200, 200, Font.getHelvetica(), 10, RgbColor.getBlack());
306
307     // Add a plot Area to the chart
308     PlotArea plotArea = chart.getPrimaryPlotArea();
309
310     // Create a Header title and add it to the chart
311     Title tTitle = new Title("Player Height and Weight");
312     chart.getHeaderTitles().add(tTitle);
313
314     // Create a xyScatter series and add values to it
315     XYScatterSeries xyScatterSeries1 = new XYScatterSeries("Team A");
316     xyScatterSeries1.getValues().add(112, 55);
317     xyScatterSeries1.getValues().add(125, 60);
318     xyScatterSeries1.getValues().add(138, 68);
319     xyScatterSeries1.getValues().add(150, 73);
320     xyScatterSeries1.getValues().add(172, 80);
321     XYScatterSeries xyScatterSeries2 = new XYScatterSeries("Team B");
322     xyScatterSeries2.getValues().add(110, 54);
323     xyScatterSeries2.getValues().add(128, 62);
324     xyScatterSeries2.getValues().add(140, 70);
325     xyScatterSeries2.getValues().add(155, 75);
326     xyScatterSeries2.getValues().add(170, 80);
327
328     // Add xyScatter series to the plot Area
329     plotArea.getSeries().add(xyScatterSeries1);
330     plotArea.getSeries().add(xyScatterSeries2);
331
332     // Create axis titles and add it to the axis
333     Title title1 = new Title("Height (Inches)");
334     Title title2 = new Title("Weight (Pounds)");
335     xyScatterSeries1.getYAxis().getTitles().add(title1);
336     xyScatterSeries1.getXAxis().getTitles().add(title2);
337
338     // Set XAxis min value
339     xyScatterSeries1.getXAxis().setMin(50);
340
```

```
341 // Set YAxis min value
342 xyScatterSeries1.getYAxis().setMin(100);
343
344 chart.getLegends().getLegend(0).setVisible(false);
345 elements.add(chart);
346 }
347
348 private void addMultiTypeSeriesChart(Group elements, float x, float y) {
349     addCaptionAndRectangle(elements, "Plot Area With Different Kinds Of Series And Multiple Axis ", x, y, 650, 410);
350
351     // Create a chart
352     Chart chart = new Chart(x + 25, y + 37, 600, 350);
353
354     // Create a Auto gradient and set it to chart back ground color
355     AutoGradient autogradient = new AutoGradient(90f, CmykColor.getLightYellow(), CmykColor.getLightSkyBlue());
356     chart.setBackgroundColors(autogradient);
357
358     // Create a plot area
359     PlotArea plotArea = chart.getPrimaryPlotArea();
360
361     // Create header titles and add it to the chart
362     Title title1 = new Title("Company Sales and Website Visitors ");
363     title1.setAlign(Align.LEFT);
364     chart.getHeaderTitles().add(title1);
365
366     // Create a indexed line series and add values to it
367     IndexedLineSeries lineSeries1 = new IndexedLineSeries("Website A Visitors");
368     lineSeries1.getValues().add(new float[] { 1.5f, 8, 7.5f, 5.5f });
369     lineSeries1.setColor(RgbColor.getDarkBlue());
370
371     IndexedLineSeries lineSeries2 = new IndexedLineSeries("Website B Visitors");
372     lineSeries2.setColor(RgbColor.getLimeGreen());
373     lineSeries2.getValues().add(new float[] { 4, 3, 7, 7.5f });
374
375     // Create markers and add it to the series
376     Marker marker1 = Marker.getTriangle(7);
377     lineSeries1.setMarker(marker1);
378     Marker marker2 = Marker.getCircle(7);
379     lineSeries2.setMarker(marker2);
380
381     // Add indexed line series to the plot area
382     plotArea.getSeries().add(lineSeries1);
383     plotArea.getSeries().add(lineSeries2);
384
385     // Create a NumericYAxis and a title to it
386     NumericYAxis numericyaxis1 = new NumericYAxis();
387     numericyaxis1.setAnchorType(YAxisAnchorType.RIGHT);
388     numericyaxis1.getTitles().add(new Title("Sales (in $ millions)"));
389     numericyaxis1.setInterval(1);
```



```
390
391 // Create a indexed column series and add values to it
392 IndexedColumnSeries columnSeries1 = new IndexedColumnSeries("Company A Sales", numericyaxis1);
393 columnSeries1.getValues().add(new float[] { 2, 10, 14, 17 });
394 columnSeries1.setColor(RgbColor.getBlue());
395 IndexedColumnSeries columnSeries2 = new IndexedColumnSeries("Company B Sales", numericyaxis1);
396 columnSeries2.setColor(RgbColor.getLime());
397 columnSeries2.getValues().add(new float[] { 7, 4, 10, 15 });
398
399 // Create a Value position data label
400 BarColumnValuePositionDataLabel valuepositiondatalabel = new BarColumnValuePositionDataLabel( true,true,false );
401 columnSeries1.setDataLabel(valuepositiondatalabel);
402 valuepositiondatalabel.setFontSize(7);
403 columnSeries1.getDataLabel().setPrefix("(");
404 columnSeries1.getDataLabel().setSuffix(")");
405 columnSeries2.setDataLabel(valuepositiondatalabel);
406
407 // Add indexed column series to the plot area
408 plotArea.getSeries().add(columnSeries1);
409 plotArea.getSeries().add(columnSeries2);
410 YAxisGridLines minorGridLines = new YAxisGridLines();
411 minorGridLines.setLineStyle(LineStyle.getDots());
412
413 plotArea.getYAxes().getDefaultNumericAxis().setMajorGridLines(new YAxisGridLines());
414 plotArea.getYAxes().getDefaultNumericAxis().setMinorGridLines(new YAxisGridLines());
415 plotArea.getXAxes().getDefaultIndexedAxis().setMajorGridLines(new XAxisGridLines());
416 plotArea.getYAxes().getDefaultNumericAxis().setMinorTickMarks(new YAxisTickMarks());
417 plotArea.getYAxes().getDefaultNumericAxis().setMajorTickMarks(new YAxisTickMarks());
418
419 // Add title to Yaxis
420 lineSeries1.getYAxis().getTitles().add(new Title("Visitors (in millions)"));
421
422 //Adding AxisLabels to the XAxis
423 columnSeries1.getXAxis().getLabels().add(new IndexedXAxisLabel("Q1", 0));
424 columnSeries1.getXAxis().getLabels().add(new IndexedXAxisLabel("Q2", 1));
425 columnSeries1.getXAxis().getLabels().add(new IndexedXAxisLabel("Q3", 2));
426 columnSeries1.getXAxis().getLabels().add(new IndexedXAxisLabel("Q4", 3));
427 chart.getLegends().getLegend(0).setLineStyle(LineStyle.getDots());
428 chart.getLegends().getLegend(0).setBorderColor(RgbColor.getBlack());
429 chart.getLegends().getLegend(0).setBackgroundColor(CmykColor.getLavender());
430 elements.add(chart);
431 }
432
433 private void addCaptionAndRectangle(Group pageElements, String caption, float x, float y, float width, float height) {
434 // Adds a rectangle and caption to the pageElements
435 Rectangle rectangle = new Rectangle(x, y + 15, width, height - 15);
436 Label captionLabel = new Label(caption, x, y, 300, 10, Font.getHelveticaBold(), 10);
437 pageElements.add(rectangle);
438 pageElements.add(captionLabel);
```

```
439     }  
440 }
```