Charting.java

```
import com.cete.dynamicpdf.*;
import com.cete.dynamicpdf.pageelements.*;
import com.cete.dynamicpdf.pageelements.charting.*;
import com.cete.dynamicpdf.pageelements.charting.axes.*;
import com.cete.dynamicpdf.pageelements.charting.series.*;
import java.io.IOException;
import javax.servlet.ServletConfig;
import javax.servlet.ServletException;
import javax.servlet.ServletOutputStream;
import javax.servlet.http.HttpServlet;
import javax.servlet.http.HttpServletRequest;
import javax.servlet.http.HttpServletResponse;


public class Charting  extends HttpServlet {

    ServletOutputStream sOut;

    public void init(ServletConfig config) throws ServletException {
        super.init(config);
    }

    public void doGet(HttpServletRequest req, HttpServletResponse res)
    throws IOException,ServletException {

        sOut = res.getOutputStream();
        // Create a document and set it's properties
        Document objDocument = new Document();
        objDocument.setCreator("Charting.java");
        Page objPage = new Page();
        addCharts(objDocument);

        // Outputs the document to current web page.
        objDocument.drawToWeb(req, res , sOut, "Charting.pdf");
        sOut.close();
    }

    private void addCharts(Document document) {
        // Create a Template and assign it to the document
        Template documentTemplate = new Template();
        document.setTemplate(documentTemplate);
        documentTemplate.getElements().add(new PageNumberingLabel(
                "Page %%CP%% of %%TP%%", 100,525, 512, 12, Font.getHelvetica(),
                12, TextAlign.CENTER));

        // Create a Page
        Page page1 = new Page(PageSize.LETTER, PageOrientation.LANDSCAPE,35);
        Page page2 = new Page(PageSize.LETTER, PageOrientation.LANDSCAPE);

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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);
```

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        areaSeries.add(seriesElement2);
        areaSeries.add(seriesElement3);

        // Add series to the plot area
        plotArea.getSeries().add(areaSeries);

        // Create a title and add it to the YAxis
        Title lTitle = new Title("Visitors (in millions)");
        areaSeries.getYAxis().getTitles().add(lTitle);

        //Adding AxisLabels to the XAxis
        areaSeries.getXAxis().getLabels().add(new IndexedXAxisLabel("Q1", 0));
        areaSeries.getXAxis().getLabels().add(new IndexedXAxisLabel("Q2", 1));
        areaSeries.getXAxis().getLabels().add(new IndexedXAxisLabel("Q3", 2));
        areaSeries.getXAxis().getLabels().add(new IndexedXAxisLabel("Q4", 3));
        chart.getLegends().getLegend(0).setVisible(false);
        elements.add(chart);
    }

    private void addLineChart(Group elements, float x, float y) {
        addCaptionAndRectangle(elements, "Line Chart", x, y, 225, 225);

        // Create a chart
        Chart chart = new Chart(x + 10, y + 25, 200, 200, Font.getHelvetica(), 10, RgbColor.getBlack());

        // Create a plot area
        PlotArea plotArea = chart.getPrimaryPlotArea();

        // Create header titles and add it to the chart
        Title title1 = new Title("Website Visitors");
        chart.getHeaderTitles().add(title1);

        // Create a indexed line series and add values to it
        IndexedLineSeries lineSeries1 = new IndexedLineSeries("Website A");
        lineSeries1.getValues().add(new float[] { 5, 7, 9, 6 });
        IndexedLineSeries lineSeries2 = new IndexedLineSeries("Website B");
        lineSeries2.getValues().add(new float[] { 4, 2, 5, 8 });
        IndexedLineSeries lineSeries3 = new IndexedLineSeries("Website C");
        lineSeries3.getValues().add(new float[] { 2, 4, 6, 9 });

        // Add indexed line series to the plot area
        plotArea.getSeries().add(lineSeries1);
        plotArea.getSeries().add(lineSeries2);
        plotArea.getSeries().add(lineSeries3);

        // Create a title and add it to the yaxis
        Title lTitle = new Title("Visitors (in millions)");
        lineSeries1.getYAxis().getTitles().add(lTitle);

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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 
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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.setBackgroundColor(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 }
```