Custom Drawing Worksheet

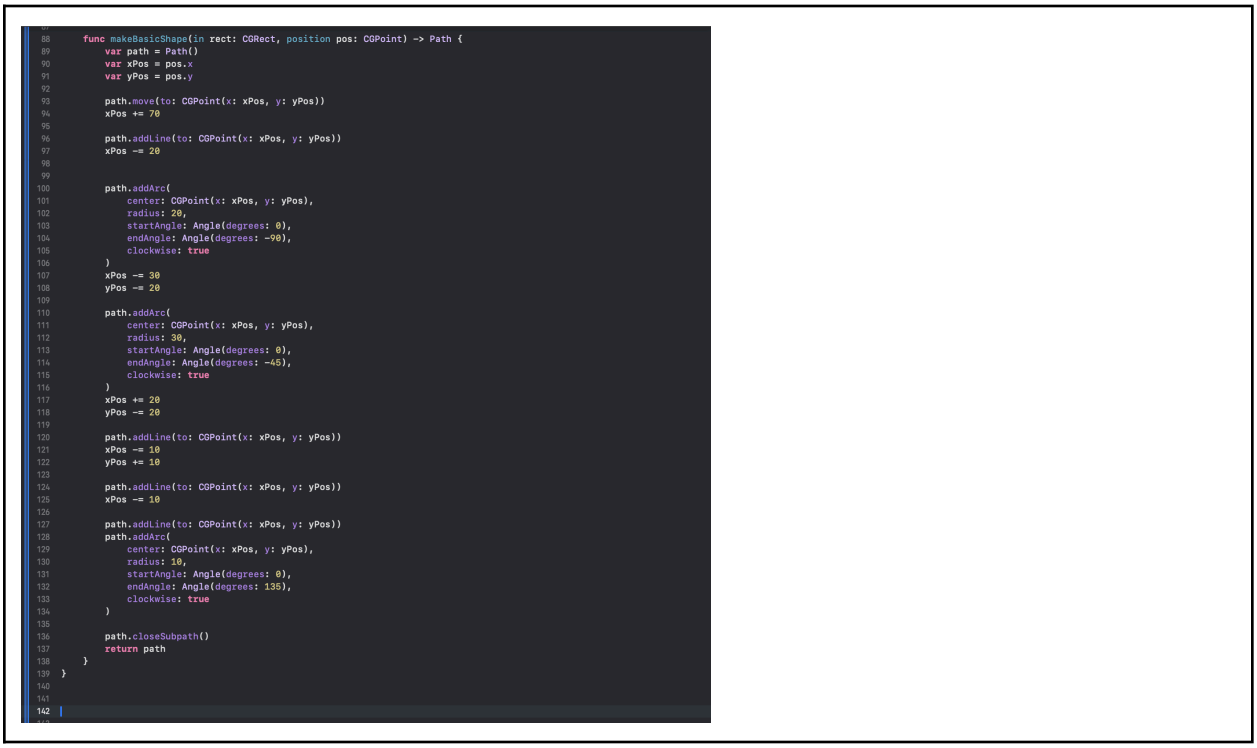
This worksheet is designed to help you document the values from your graph paper/whiteboard drawing and use them to create the Shape structs for the CustomView part of the Creativity app.

Basic shape

This shape needs to have at least six lines.

X Position	Y Position
7 (Line)	0
5 (Arc)	-2
4 (Arc)	-4
3 (Line)	-3
2 (Arc)	-2
0 (Line)	0

Basic Shape Method Screenshot



```
func makeBasicShape(in rect: CGRect, position pos: CGPoint) -> Path {
    var path = Path()
    var xPos = pos.x
    var yPos = pos.y

    path.move(to: CGPoint(x: xPos, y: yPos))
    xPos += 70

    path.addLine(to: CGPoint(x: xPos, y: yPos))
    xPos -= 20


    path.addArc(
        center: CGPoint(x: xPos, y: yPos),
        radius: 20,
        startAngle: Angle(degrees: 0),
        endAngle: Angle(degrees: -90),
        clockwise: true
    )
    xPos -= 30
    yPos -= 20

    path.addArc(
        center: CGPoint(x: xPos, y: yPos),
        radius: 30,
        startAngle: Angle(degrees: 0),
        endAngle: Angle(degrees: -45),
        clockwise: true
    )
    xPos += 20
    yPos -= 20

    path.addLine(to: CGPoint(x: xPos, y: yPos))
    xPos -= 10
    yPos += 10

    path.addLine(to: CGPoint(x: xPos, y: yPos))
    xPos -= 10

    path.addLine(to: CGPoint(x: xPos, y: yPos))
    path.addArc(
        center: CGPoint(x: xPos, y: yPos),
        radius: 10,
        startAngle: Angle(degrees: 0),
        endAngle: Angle(degrees: 135),
        clockwise: true
    )

    path.closeSubpath()
    return path
  }
}
```

Basic Shape image Screenshot

Mirrored shape

This shape needs to be mirrored; either left to right, or top to bottom. It needs to have at least 6 points before it is mirrored!

X Position	Y Position
7 (Line)	0
5 (Line)	-2
4 (Arc)	-3
3 (Line)	-4
2 (Arc)	-2
0 (Arc)	0

Mirrored Shape Method Screenshot

```
148     func makeMirroredBasicShape(in rect: CGRect, position pos: CGPoint) -> Path {
149         return verticalMirror(of: makeBasicShape(in: rect, position: pos), in: rect)
150     }
151 }
```

Mirrored Shape image Screenshot

“Complex Shape”

This is the more complex shape you need to make and it needs ten lines.

X Position	Y Position
3	0
5	-2
5	-5
2	-5
0	-3
0	0
2	-2
3	-2
3	-3
2	-3
2	-2
0	0
3	0
3	-3
0	-3
0	0

Complex Shape Method Screenshot

```
155 struct MultiComplexShape : Shape {
169
170     func makeComplexShape(in rect: CGRect, position pos: CGPoint) -> Path {
171         var path = Path()
172
173         var xPos = pos.x
174         var yPos = pos.y
175
176         path.move(to: CGPoint(x: xPos, y: yPos))
177         xPos += 30
178
179         path.addLine(to: CGPoint(x: xPos, y: yPos))
180         xPos += 20
181         yPos -= 20
182
183         path.addLine(to: CGPoint(x: xPos, y: yPos))
184         yPos -= 30
185
186         path.addLine(to: CGPoint(x: xPos, y: yPos))
187         xPos -= 30
188
189         path.addLine(to: CGPoint(x: xPos, y: yPos))
190         xPos -= 20
191         yPos += 20
192
193         path.addLine(to: CGPoint(x: xPos, y: yPos))
194         yPos += 30
195
196         path.addLine(to: CGPoint(x: xPos, y: yPos))
197         xPos += 20
198         yPos -= 20
199
200         path.addLine(to: CGPoint(x: xPos, y: yPos))
201         xPos += 10
202
203         path.addLine(to: CGPoint(x: xPos, y: yPos))
204         yPos -= 10
205
206         path.addLine(to: CGPoint(x: xPos, y: yPos))
207         xPos -= 10
208
209         path.addLine(to: CGPoint(x: xPos, y: yPos))
210         yPos += 10
211
212         path.addLine(to: CGPoint(x: xPos, y: yPos))
213         xPos -= 20
214         yPos += 20
215
216         path.addLine(to: CGPoint(x: xPos, y: yPos))
217         xPos += 30
218
219         path.addLine(to: CGPoint(x: xPos, y: yPos))
220         yPos -= 30
221
222         path.addLine(to: CGPoint(x: xPos, y: yPos))
223         xPos += 20
224         yPos -= 20
225
226         path.addLine(to: CGPoint(x: xPos, y: yPos))
227         xPos -= 20
228         yPos += 20
229
230         path.addLine(to: CGPoint(x: xPos, y: yPos))
231         xPos -= 30
232
233         path.addLine(to: CGPoint(x: xPos, y: yPos))
```

Complex Shape image Screenshot

Multiple path

This is a simple shape that you will repeat a few times (3 or more) on your page. It needs 6 lines at a minimum. Again make it simple first, then you can make it more difficult/complex

X Position	Y Position
3 (Line)	0
5 (Line)	3
3 (Arc)	5
0 (Line)	3
0 (Line) (EndShape)	0
5 (Move)	5
3 (Arc)	0
0 (Line)	0
0 (Arc)	3
0 (Line)	0

Multiple Shape Method Screenshot

```
255 struct MultiSimpleShape : Shape {
277     func makeSimpleShape(in rect: CGRect, position pos : CGPoint) -> Path {
278         var returnPath = Path()
279         var firstPath = Path()
280         var secondPath = Path()
281 
282         var xPos = pos.x + 5
283         var yPos = pos.y + 5
284 
285         firstPath.move(to: CGPoint(x: xPos, y: yPos))
286         xPos += 30
287 
288         firstPath.addLine(to: CGPoint(x: xPos, y: yPos))
289         xPos += 20
290         yPos += 30
291 
292         firstPath.addLine(to: CGPoint(x: xPos, y: yPos))
293         xPos -= 20
294 
295         firstPath.addArc(
296             center: CGPoint(x: xPos, y: yPos),
297             radius: 20,
298             startAngle: Angle(degrees: 0),
299             endAngle: Angle(degrees: 90),
300             clockwise: false
301         )
302         yPos += 20
303 
304         firstPath.addLine(to: CGPoint(x: xPos, y: yPos))
305         xPos -= 30
306         yPos -= 20
307 
308         firstPath.addLine(to: CGPoint(x: xPos, y: yPos))
309         firstPath.closeSubpath()
310 
311         xPos = pos.x + 50
312         yPos = pos.y + 50
313 
314         secondPath.move(to: CGPoint(x: xPos, y: yPos))
315         xPos += 30
316 
317         secondPath.addLine(to: CGPoint(x: xPos, y: yPos))
318         xPos -= 15
319         yPos += 15
320 
321         secondPath.addArc(
322             center: CGPoint(x: xPos, y: yPos),
323             radius: 21.5,
324             startAngle: Angle(degrees: 315),
325             endAngle: Angle(degrees: 225),
326             clockwise: true
327         )
328         xPos = pos.x + 50
329         yPos = pos.y + 80
330 
331         secondPath.addLine(to: CGPoint(x: xPos, y: yPos))
332         xPos += 15
333         yPos -= 15
334 
335         secondPath.addArc(
336             center: CGPoint(x: xPos, y: yPos),
337             radius: 21.5,
338             startAngle: Angle(degrees: 225),
339             endAngle: Angle(degrees: 135),
340             clockwise: true
341         )
```

Multiple Shape image Screenshot