

Lab 3: Web Application with Genie

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I. EXERCICES

-In the first task we add extra slide that modify the behaviour of the sine wave graph by adding : **Phase ranging between $-\pi$ and π , changes by a step of $\frac{\pi}{100}$**

- Then we add the offset function : **Offset varies from -0.5 to 1 , by a step of 0.1**

```
Web app > appjl > ...
1 using GenieFramework
2 @genietools
3
4 @app begin
5
6     @in N::Int32 = 1000
7     @in amp::Float32 = 0.25
8     @in freq::Int32 = 1
9     @in ph::Float64 = 3.14/100
10    @in offset::Int32 = 0
11
12
13    @out my_sine = PlotData()
14
15    @onchange N, amp, freq, ph, offset begin
16        x = range(0, 1, length=N)
17        y = amp*sin.(2*pi*freq*x.+ph).+offset
18
19        my_sine = PlotData(x=x,
20                          y=y,
21                          plot=StipplePlotly.Charts.PLOT_TYPE_LINE)
22    end
23
24 end
25
26 @page("/", "app.jl.html")
27
```

Figure 1: Adding the phase and offset functions

```
C:\Users\USER\Desktop> appjl.html
1 <header class="st-header q-pa-sm">
2   <h1 class="st-header__title text-h3" Sinewave Dashboard </h1>
3 </header>
4
5 <div class="row">
6   <div class="st-col col-12 col-sm st-module">
7     <p><b># Samples</b></p>
8     <q-slider v-model="N"
9       :min="10" :max="1000"
10      :step="10" :label="true">
11   </q-slider>
12 </div>
13
14   <div class="st-col col-12 col-sm st-module">
15     <p><b>Amplitude</b></p>
16     <q-slider v-model="amp"
17       :min="0" :max="3"
18      :step=".5" :label="true">
19   </q-slider>
20 </div>
21
22   <div class="st-col col-12 col-sm st-module">
23     <p><b>phase</b></p>
24     <q-slider v-model="ph"
25       :min="-3.14" :max="3.14"
26      :step="3.14/100" :label="true">
27   </q-slider>
28 </div>
29   <div class="st-col col-12 col-sm st-module">
30     <p><b>offset</b></p>
31   </div>
32 </div>
33
34 <div class="row">
35   <div class="st-col col-12 col-sm st-module">
36     <p><b>Frequency</b></p>
37     <q-slider v-model="freq"
38       :min="0" :max="10"
39      :step="1" :label="true">
40   </q-slider>
41 </div>
42 </div>
43
44 <div class="row">
45   <div class="st-col col-12 col-sm st-module">
46     <p><b>Sinewave</b></p>
47     <plotly :data="my_sine"> </plotly>
48   </div>
49 </div>
50
```

Figure 2: Adding the phase and offset functions

```
30   <q-slider v-model="offset"
31     :min="0" :max="5"
32     :step="0.5" :label="true">
33 </q-slider>
34 </div>
35
36 <div class="st-col col-12 col-sm st-module">
37   <p><b>Frequency</b></p>
38   <q-slider v-model="freq"
39     :min="0" :max="10"
40     :step="1" :label="true">
41 </q-slider>
42 </div>
43 </div>
44
45 <div class="row">
46   <div class="st-col col-12 col-sm st-module">
47     <p><b>Sinewave</b></p>
48     <plotly :data="my_sine"> </plotly>
49   </div>
50 </div>
```

Figure 3: Adding the phase and offset functions

- After that we open the Julia REPL

```
Julia 1.10.2
julia> cd("C:/Users/USER/Desktop/html/Web app")
julia> using GenieFramework
julia> Genie.Loadapp()

GENIE 5

Website: https://genieframework.com
GitHub: https://github.com/genieframework
Docs: https://learn.genieframework.com
Discord: https://discord.com/invite/9zyZbD637H
Twitter: https://twitter.com/essenciary

Active env: DEV

Loading app[ Info: 2024-04-22 20:13:23 Watching ["C:\\Users\\USER\\Desktop\\html\\Web app"]
Ready!

julia>
julia> up()
[ Info: 2024-04-22 20:13:36
Web Server starting at http://127.0.0.1:8000
```

Figure 4: Julia REPL

-And, we have the sine wave, with the ability to adjust every parameter



Figure 5: sinmove

II. CONCLUSION

finally, Julia is a dynamic, high-level programming language that has gained significant traction in scientific and technical computing communities.