A julia engine notebook

Table of contents

```julia
import Pkg
Pkg.add("Plots")
```

```
  Resolving package versions...
    Updating `/private/var/folders/dk/h27sxrrj3mg6myd8ht0ym9300000gn/T/
jl_blLBn0/QuartoSandbox/Project.toml`
  [91a5bcdd] + Plots v1.41.1
    Updating `/private/var/folders/dk/h27sxrrj3mg6myd8ht0ym9300000gn/T/
jl_blLBn0/QuartoSandbox/Manifest.toml`
  [66dad0bd] + AliasTables v1.1.3
  [d1d4a3ce] + BitFlags v0.1.9
  [944b1d66] + CodecZlib v0.7.8
  [35d6a980] + ColorSchemes v3.31.0
  [3da002f7] + ColorTypes v0.12.1
  [c3611d14] + ColorVectorSpace v0.11.0
  [5ae59095] + Colors v0.13.1
  [f0e56b4a] + ConcurrentUtilities v2.5.0
  [d38c429a] + Contour v0.6.3
  [9a962f9c] + DataAPI v1.16.0
  [864edb3b] + DataStructures v0.19.3
  [8bb1440f] + DelimitedFiles v1.9.1
  [ffbed154] + DocStringExtensions v0.9.5
  [460bff9d] + ExceptionUnwrapping v0.1.11
  [c87230d0] + FFMPEG v0.4.5
  [53c48c17] + FixedPointNumbers v0.8.5
  [1fa38f19] + Format v1.3.7
  [28b8d3ca] + GR v0.73.18
  [42e2da0e] + Grisu v1.0.2
  [cd3eb016] + HTTP v1.10.19
  [92d709cd] + IrrationalConstants v0.2.6
  [1019f520] + JLFzf v0.1.11
  [692b3bcd] + JLLWrappers v1.7.1
  [682c06a0] + JSON v1.2.1
  [b964fa9f] + LaTeXStrings v1.4.0
  [23fbe1c1] + Latexify v0.16.10
  [2ab3a3ac] + LogExpFunctions v0.3.29
  [e6f89c97] + LoggingExtras v1.2.0
  [1914dd2f] + MacroTools v0.5.16
  [739be429] + MbedTLS v1.1.9
  [442fdcdd] + Measures v0.3.3
```

```
[e1d29d7a] + Missings v1.2.0
[77ba4419] + NaNMath v1.1.3
[4d8831e6] + OpenSSL v1.6.0
[bac558e1] + OrderedCollections v1.8.1
[69de0a69] + Parsers v2.8.3
[ccf2f8ad] + PlotThemes v3.3.0
[995b91a9] + PlotUtils v1.4.4
[91a5bcdd] + Plots v1.41.1
[aea7be01] + PrecompileTools v1.3.3
[21216c6a] + Preferences v1.5.0
[43287f4e] + PtrArrays v1.3.0
[3cdcf5f2] + RecipesBase v1.3.4
[01d81517] + RecipesPipeline v0.6.12
[189a3867] + Reexport v1.2.2
[05181044] + RelocatableFolders v1.0.1
[ae029012] + Requires v1.3.1
[6c6a2e73] + Scratch v1.3.0
[992d4aef] + Showoff v1.0.3
[777ac1f9] + SimpleBufferStream v1.2.0
[a2af1166] + SortingAlgorithms v1.2.2
[860ef19b] + StableRNGs v1.0.4
[10745b16] + Statistics v1.11.1
[82ae8749] + StatsAPI v1.7.1
[2913bbd2] + StatsBase v0.34.8
[ec057cc2] + StructUtils v2.6.0
[62fd8b95] + TensorCore v0.1.1
[3bb67fe8] + TranscodingStreams v0.11.3
[5c2747f8] + URIs v1.6.1
[1cfade01] + UnicodeFun v0.4.1
[41fe7b60] + Unzip v0.2.0
[6e34b625] + Bzip2_jll v1.0.9+0
[83423d85] + Cairo_jll v1.18.5+0
[ee1fde0b] + Dbus_jll v1.16.2+0
[2702e6a9] + EpollShim_jll v0.0.20230411+1
[2e619515] + Expat_jll v2.7.3+0
[b22a6f82] + FFMPEG_jll v8.0.0+0
[a3f928ae] + Fontconfig_jll v2.17.1+0
[d7e528f0] + FreeType2_jll v2.13.4+0
[559328eb] + FriBidi_jll v1.0.17+0
[0656b61e] + GLFW_jll v3.4.0+2
[d2c73de3] + GR_jll v0.73.18+0
[b0724c58] + GettextRuntime_jll v0.22.4+0
[61579ee1] + Ghostscript_jll v9.55.1+0
[7746bdde] + Glib_jll v2.86.0+0
[3b182d85] + Graphite2_jll v1.3.15+0
[2e76f6c2] + HarfBuzz_jll v8.5.1+0
[aacddb02] + JpegTurbo_jll v3.1.3+0
[c1c5ebd0] + LAME_jll v3.100.3+0
```

```
[88015f11] + LERC_jll v4.0.1+0
[1d63c593] + LLVMOpenMP_jll v18.1.8+0
[dd4b983a] + LZO_jll v2.10.3+0
[e9f186c6] + Libffi_jll v3.4.7+0
[7e76a0d4] + Libglvnd_jll v1.7.1+1
[94ce4f54] + Libiconv_jll v1.18.0+0
[4b2f31a3] + Libmount_jll v2.41.2+0
[89763e89] + Libtiff_jll v4.7.2+0
[38a345b3] + Libuuid_jll v2.41.2+0
[c8ffd9c3] + MbedTLS_jll v2.28.10+0
[e7412a2a] + Ogg_jll v1.3.6+0
[91d4177d] + Opus_jll v1.5.2+0
[36c8627f] + Pango_jll v1.57.0+0
⤿ [30392449] + Pixman_jll v0.44.2+0
[c0090381] + Qt6Base_jll v6.8.2+2
[629bc702] + Qt6Declarative_jll v6.8.2+1
[ce943373] + Qt6ShaderTools_jll v6.8.2+1
[e99dba38] + Qt6Wayland_jll v6.8.2+2
[a44049a8] + Vulkan_Loader_jll v1.3.243+0
[a2964d1f] + Wayland_jll v1.24.0+0
[ffd25f8a] + XZ_jll v5.8.1+0
[f67eecfb] + Xorg_libICE_jll v1.1.2+0
[c834827a] + Xorg_libSM_jll v1.2.6+0
[4f6342f7] + Xorg_libX11_jll v1.8.12+0
[0c0b7dd1] + Xorg_libXau_jll v1.0.13+0
[935fb764] + Xorg_libXcursor_jll v1.2.4+0
[a3789734] + Xorg_libXdmcp_jll v1.1.6+0
[1082639a] + Xorg_libXext_jll v1.3.7+0
[d091e8ba] + Xorg_libXfixes_jll v6.0.2+0
[a51aa0fd] + Xorg_libXi_jll v1.8.3+0
[d1454406] + Xorg_libXinerama_jll v1.1.6+0
[ec84b674] + Xorg_libXrandr_jll v1.5.5+0
[ea2f1a96] + Xorg_libXrender_jll v0.9.12+0
[c7cfdc94] + Xorg_libxcb_jll v1.17.1+0
[cc61e674] + Xorg_libxkbfile_jll v1.1.3+0
[e920d4aa] + Xorg_xcb_util_cursor_jll v0.1.6+0
[12413925] + Xorg_xcb_util_image_jll v0.4.1+0
[2def613f] + Xorg_xcb_util_jll v0.4.1+0
[975044d2] + Xorg_xcb_util_keysyms_jll v0.4.1+0
[0d47668e] + Xorg_xcb_util_renderutil_jll v0.3.10+0
[c22f9ab0] + Xorg_xcb_util_wm_jll v0.4.2+0
[35661453] + Xorg_xkbcomp_jll v1.4.7+0
[33bec58e] + Xorg_xkeyboard_config_jll v2.44.0+0
[c5fb5394] + Xorg_xtrans_jll v1.6.0+0
[3161d3a3] + Zstd_jll v1.5.7+1
[35ca27e7] + eudev_jll v3.2.14+0
[214eeab7] + fzf_jll v0.61.1+0
[a4ae2306] + libaom_jll v3.13.1+0
```

```
[0ac62f75] + libass_jll v0.17.4+0
[1183f4f0] + libdecor_jll v0.2.2+0
[2db6ffa8] + libevdev_jll v1.13.4+0
[f638f0a6] + libfdk_aac_jll v2.0.4+0
[36db933b] + libinput_jll v1.28.1+0
[b53b4c65] + libpng_jll v1.6.50+0
[f27f6e37] + libvorbis_jll v1.3.8+0
[009596ad] + mtdev_jll v1.1.7+0
[1270edf5] + x264_jll v10164.0.1+0
[dfaa095f] + x265_jll v4.1.0+0
[d8fb68d0] + xkbcommon_jll v1.9.2+0
[0dad84c5] + ArgTools v1.1.2
[56f22d72] + Artifacts v1.11.0
[2a0f44e3] + Base64 v1.11.0
[ade2ca70] + Dates v1.11.0
[f43a241f] + Downloads v1.6.0
[7b1f6079] + FileWatching v1.11.0
[b77e0a4c] + InteractiveUtils v1.11.0
[ac6e5ff7] + JuliaSyntaxHighlighting v1.12.0
[b27032c2] + LibCURL v0.6.4
[76f85450] + LibGit2 v1.11.0
[8f399da3] + Libdl v1.11.0
[37e2e46d] + LinearAlgebra v1.12.0
[56ddb016] + Logging v1.11.0
[d6f4376e] + Markdown v1.11.0
[a63ad114] + Mmap v1.11.0
[ca575930] + NetworkOptions v1.3.0
[44cfe95a] + Pkg v1.12.0
[de0858da] + Printf v1.11.0
[3fa0cd96] + REPL v1.11.0
[9a3f8284] + Random v1.11.0
[ea8e919c] + SHA v0.7.0
[9e88b42a] + Serialization v1.11.0
[6462fe0b] + Sockets v1.11.0
[2f01184e] + SparseArrays v1.12.0
[f489334b] + StyledStrings v1.11.0
[fa267f1f] + TOML v1.0.3
[a4e569a6] + Tar v1.10.0
[8dfed614] + Test v1.11.0
[cf7118a7] + UUIDs v1.11.0
[4ec0a83e] + Unicode v1.11.0
[e66e0078] + CompilerSupportLibraries_jll v1.3.0+1
[deac9b47] + LibCURL_jll v8.11.1+1
[e37daf67] + LibGit2_jll v1.9.0+0
[29816b5a] + LibSSH2_jll v1.11.3+1
[14a3606d] + MozillaCACerts_jll v2025.5.20
[4536629a] + OpenBLAS_jll v0.3.29+0
[05823500] + OpenLibm_jll v0.8.7+0
```

```
   [458c3c95] + OpenSSL_jll v3.5.1+0
   [efcefdf7] + PCRE2_jll v10.44.0+1
   [bea87d4a] + SuiteSparse_jll v7.8.3+2
   [83775a58] + Zlib_jll v1.3.1+2
   [8e850b90] + libblastrampoline_jll v5.15.0+0
   [8e850ede] + nghttp2_jll v1.64.0+1
   [3f19e933] + p7zip_jll v17.5.0+2
        Info Packages marked with ⌐ have new versions available but
compatibility constraints restrict them from upgrading. To see why use `status
--outdated -m`
```

```julia
using Plots
```

```
Precompiling packages...
    694.2 ms  ✓ QuartoNotebookWorkerJSONExt (serial)
  1 dependency successfully precompiled in 1 seconds
Precompiling packages...
   1811.8 ms  ✓ QuartoNotebookWorkerPlotsExt (serial)
  1 dependency successfully precompiled in 2 seconds
```

```julia
1 + 2
```

```
3
```

Now let us try some plotting:

```julia
x = 0:0.01:4pi
y = sin.(x)
plot(x,y)
xlabel!("time (s)")
ylabel!("amplitude")
```