Workshop Pre-requisites and Preparatory Instructions

Software Prerequisites

It is critical that you ensure the following software is installed and working on your machine that you bring to the workshop. Having this software installed ahead of time will prevent delays in the workshop due to configuration issues.

1. Dyalog APL 16.0 Unicode (http://www.dyalog.com)
2. System Compiler:
    a. (Windows) Visual Studio 2017 (C++ Development Environment)
    b. (Linux) GCC development toolkit
    c. (Mac OS X) Apple Developer Tools with clang + Homebrew
3. ArrayFire 3.5.1+ from https://arrayfire.com/download/
   You can find installation instructions here: http://arrayfire.org/docs/installing.htm
4. CUDA Toolkit (Latest) if you are running on a machine with an NVIDIA card

Special Mac instructions for Special Mac Users (because you're "special", you little snowflakes)

The ArrayFire package relies on Homebrew to install certain package dependencies, including libforge's dependencies, such as libglfw3. Sometimes the installer fails to properly associate the right symlinks with the right libraries, and you can get an error about failing to find dylibs like libforge or libglfw3.

The problem occurs when you have a misconfigured brew setup where the brew packages are unable to create the appropriate symlinks. You should make sure that you have glfw installed through brew, and make sure that brew was able to link the libraries. Here are some commands that might come in handy:

```
$ brew install glfw
$ brew link glfw
$ sudo chown -R $(whoami) /usr/local/lib/pkgconfig
$ brew doctor # All hell has broken loose, release the Kraken!
```

Additionally, if you find that you are missing the libSM library or something like it, please ensure that you have installed XQuartz or another X11 system to provide for the appropriate graphics libraries needed by the libforge dylib.

Preparatory Materials

In order to set the stage for better use of our time in the workshop, please watch the following videos:

1. Game of Life in APL: https://youtu.be/a9xAKttWgP4
2. APL Patterns vs. Anti-patterns: https://www.dyalog.tv/Dyalog17/?v=9xCJ3BCludI