Upgrading from Julia 0.6 to Julia 0.7

Functionality has been deprecated from 0.6 to 0.7. Warnings are issued when this functionality is used in v 0.7. In moving from 0.7 to 1.0, the deprecated functionality has been deleted.

# Changes Required for TZFileReader.jl

1. Workspace() has been eliminated. This function cleared the Main module and associated definitions and was intended only for interactive use. As an alternative, create a new module at the start of the program, via “module NewModule”. This module will not have any of the definitions present in Main.
2. Importall Base has been deprecated. This was included to enable overloading functions defined in Base, e.g., the math functions for numeric types. Instead, use “using Base”.
3. Functions that index into strings that contain Unicode characters return StringIndexError if the index does not fall on an even character boundary. (This can occur, because Unicode characters occupy multiple bytes, and stream index functions, e.g., string[1:n], are parameterized in terms of bytes. Avoid this form of indexing when a string may contain Unicode characters.
4. Global variables need to be explicitly identified as global when being updated within a scope, e.g., when in a for loop, “global x += 1”.
5. Nullables has been removed from the Base package. In order to use null values, need to add the package from a Julia prompt – Pkg.add(“Nullables”), then restart Julia.
6. When an array is initialized with a specified dimension, need to specify whether the initial value is undefined, missing or nothing. For example, instead of Array{T}(m::Int), use Array{T}(undef, m).
7. Tryparse now returns ‘nothing’ instead of ‘null’, if the desired type is found. If we have v = tryparse(Int,…), replace if (isnull(v))… with if (v == nothing).
8. contains(haystack, needle) is deprecated, use `occursin(needle, haystack)
9. Base.Dates has been deprecated. Add ‘using Dates’.
10. replace(s::AbstractString, pat, f)` is deprecated, use `replace(s, pat => f)
11. A[I...] = x` to implicitly broadcast `x` across many locations is deprecated. Use `A[I...] .= x. This occurs in TZFileReader.jl, where we have tzArray[nt,5:8] = “”. Change ‘=’ to ‘.=’.

# Additional Changes Required for UltimateDT.jl

1. Importing Base.Libdl is deprecated. Add using Libdl
2. Importing Base.Test is deprecated. Elim using Base.Test and add using Test
3. Operators to be overloaded must be imported individually. E.g., import Base: ==, !=
4. Base.show must be imported to be overridden
5. All structs and functions to be used outside the module must be exported
6. STDOUT is deprecated. Replace with stdout.
7. searchindex(s::AbstractString, c::Char, i::Integer)` is deprecated, use `something(findnext(isequal(c), s, i), 0)` instead.
8. With the absence of workspace(), need to adopt a new approach for creating and using a module. Creating the module at the top of the file, beginning with a ‘module’ statement. End the module before the tests are run. At the start of the test, add ‘import .moduleName.’ This is better than ‘using .moduleName’, since the latter results in warning for all exported functions.

# Support for Plotting

1. Added simple plotting support for the JuliaCon demonstration via the UnicodePlots package as follows:
   1. From a REPL, using Pkg
   2. Pkg.add(“UnicodePlots”)
   3. using UnicodePlots