

ScopingExperiment

October 24, 2016

1 Scoping Experiment

This experiment is designed to show a peculiarity in Julia's scoping. Julia uses a layered scoping where the scope of the inner function has access to the values of the outer function. For example:

```
In [1]: x=5; y=7; #Defined globally
        function scopeTest(z)
            x += z #Changes global value
            y = Vector{Float64}(1) #Declares a variable, local scope
            y[1] = 2
            return x + y + z
        end
```

```
Out[1]: scopeTest (generic function with 1 method)
```

However, what is happening here, and why?

```
In [37]: addprocs(1)
        function f1()
            @parallel for i = 1:100
                x = 10
                if x < 100
                    x = x + 1
                end
            end
            x = x + 100 + 10
            return x
        end
        f1()
```

```
WARNING: Method definition f1() in module Main at In[36]:3 overwritten at In[37]:3.
```

```
LoadError: UndefVarError: x not defined
while loading In[37], in expression starting on line 12
```

```
in f1() at ./In[37]:3
```

```
in execute_request(::ZMQ.Socket, ::IJulia.Msg) at /home/crackauc/.julia/v0
```

```
in eventloop(::ZMQ.Socket) at /home/crackauc/.julia/v0.5/IJulia/src/eventl
```

```
in (::IJulia.##9#15)() at ./task.jl:360
```

```
In [38]: function f2()
          @parallel for i = 1:100
              x = 10
              if x < 100
                  x = x + 1
              end
          end
          return x
        end
        f2()
```

WARNING: Method definition f2() in module Main at In[35]:2 overwritten at In[38]:2.

```
Out [38]: 5
```