

JULIA INTRODUCTION



Install Julia

□ <http://julialang.org/downloads/>

Julia (command line version)

Windows Self-Extracting Archive (.exe)	32-bit	64-bit
Mac OS X Package (.dmg)	10.7+ 64-bit	
Ubuntu packages (.deb)	32/64-bit	
Fedora/RHEL/CentOS/SL packages (.rpm)	32/64-bit	
Generic Linux binaries	32-bit	64-bit
Source	Tarball	Github
Old releases (not maintained)	link	

Run Julia

- Adjust your `.bash_profile` or `.bashrc`

```
#run julia
```

```
alias julia="exec '/Applications/Julia-0.3.9.app/  
Contents/Resources/julia/bin/julia'"
```

IJulia Notebook Set-up

- You need to have IPython Notebooks running

```
#open IJulia notebook
```

```
alias ijulia="ipython notebook --profile julia"
```

1st Julia session !

```
ACODOREAN-MAC:~ alex$ julia
```



```
A fresh approach to technical computing  
Documentation: http://docs.julialang.org  
Type "help()" for help.
```

```
Version 0.3.9 (2015-05-30 11:24 UTC)  
Official http://julialang.org/ release  
x86_64-apple-darwin13.4.0
```

```
julia> █
```

Julia editor options

- Juno <http://junolab.org>

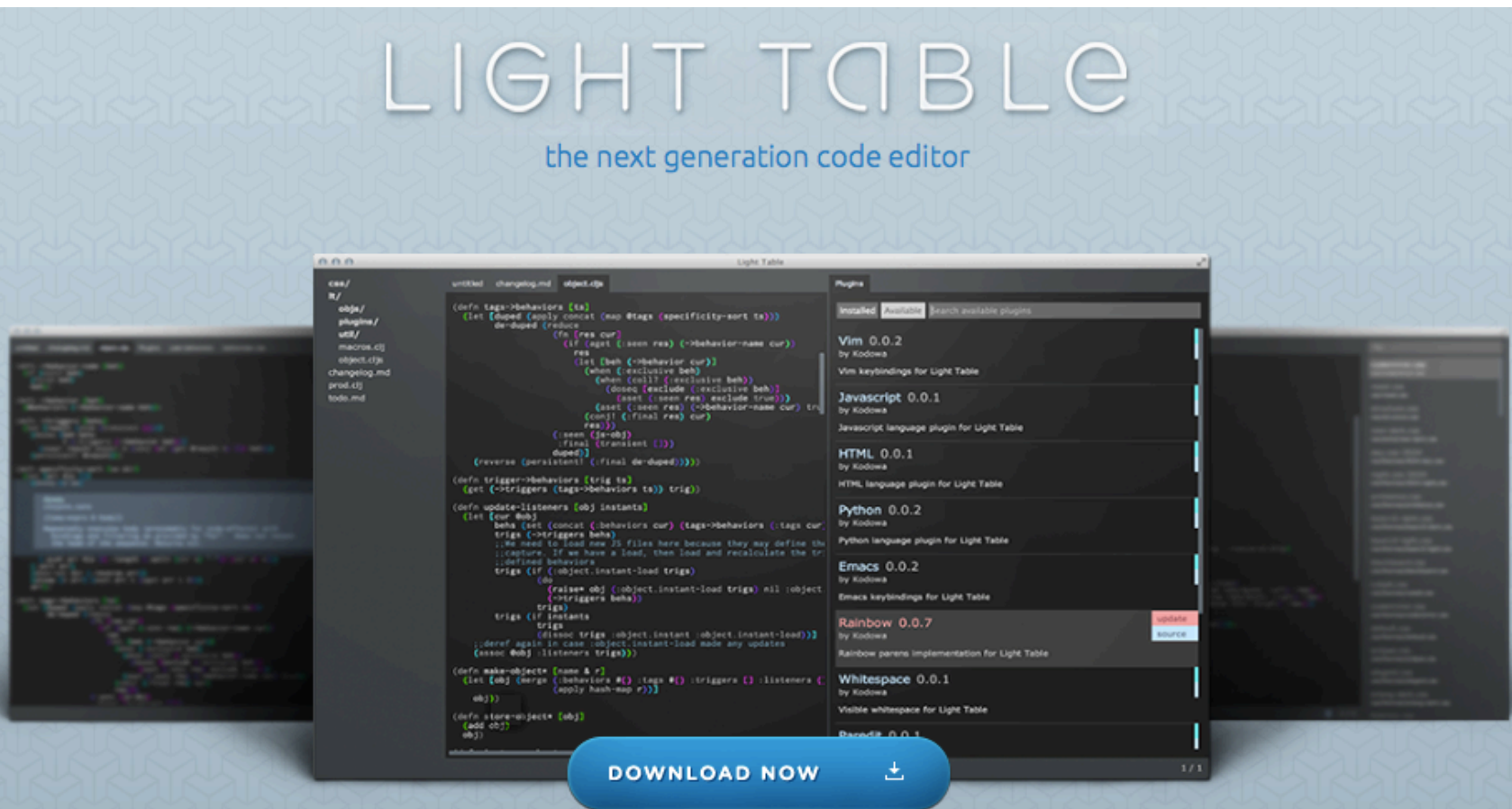
The image shows the word "JUNO" in large, 3D, metallic letters. The letters are white with a pinkish-red gradient and a yellow-gold highlight on the right side. They are set against a black rectangular background. This central image is surrounded by a colorful, abstract, painterly border with shades of green, blue, purple, and orange.

JUNO

Julia editor options

□ LightTable

<http://lighttable.com>



Connect LightTable to Julia

- View -> Commands
- Settings: User Behaviours
- `;;` This is the path to Julia
- `[:app :lt.objs.langs.julia/julia-path "/Applications/Julia-0.3.9.app/Contents/Resources/julia/bin/julia"]`

Add packages to Julia installation

- To see list of packages you have installed:
- `Pkg.installed()`
- This should come out blank

Add packages to Julia installation

- To add a package, simply:
- `Pkg.add("package_name")`
- For this tutorial, add the following packages:

Gadfly

Cairo

ASCIIPLOTS

IJulia



The image cannot be displayed. Your computer may not have enough memory to open the image, or the image may have been corrupted. Restart your computer, and then open the file again. If the red x still appears, you may have to delete the image and then insert it again.

For Loop

```
for i in 0:5  
    println(i)  
end
```

Conditionals

```
for i in 0:5
```

```
    if i < 4 println( i , " is less than 4") end
```

```
    i < 4 $$ println( i , " is less than 4 again") end
```

```
    if i >= 4 println(i, " is greater or equal to 4") end
```

```
end
```

Conditionals

i = 1

while i < 5

println(i)

i=i+1

end

Basic File I/O

- The goal is to open a file and write some output to it

```
output = open("fake_data.txt", "w")
```

```
dataout = rand(2,100)
```

```
writedlm(output, dataout)
```

```
close(output)
```

Basic File I/O

- Now let's read that data back

```
datain = readrlm("fake_data.txt")
```


Now lets plot the data

Using Gadfly

```
plot(x = datain[1, :], y = datain[2, :])
```

```
plot(x = datain[1, :], y = datain[2, :], Geom.point,  
Geom.line)
```

Now let's save this plot

```
myfirstplot = plot(x = datain[1, :], y = datain[2, :],  
Geom.point, Geom.line)
```

```
draw(PDF(myfirstplot, "myfirstplot.pdf", 9inch,  
6inch))
```

Resources

- Julia Wikibook

https://en.wikibooks.org/wiki/Introducing_Julia

- Julia Manual

<http://julia.readthedocs.org/en/latest/manual/getting-started/>

- Julia users Google group

<https://groups.google.com/forum/#!forum/julia-users>

- I've also started a Swinburne Julia Users Slack team

- alex.codoreanu@gmail.com