

# Graphics Bundle

## Chapter 1: Installing the Julia Platform

Name	Date modified	Type	Size
bin	7/1/2018 11:14 AM	File folder	
etc	7/1/2018 11:14 AM	File folder	
include	7/1/2018 11:14 AM	File folder	
lib	7/1/2018 11:14 AM	File folder	
share	7/1/2018 11:14 AM	File folder	
julia	7/1/2018 11:14 AM	Shortcut	1 KB
LICENSE.md	6/25/2018 4:08 AM	MD File	6 KB
Uninstall.exe	7/1/2018 11:14 AM	Application	110 KB



```
Documentation: https://docs.julialang.org
Type "?" for help, "]?" for Pkg help.
version 1.0.0 (2018-08-08)
official https://julialang.org/ release
julia>
```



```
julia> 6 * 7
42

julia> ans
42

julia> 8 * 5;

julia> ans
40

julia> ans + 10
50

julia>
```

```
julia> a = 3
3

julia> b
ERROR: UndefVarError: b not defined

julia> b = "Julia"
"Julia"

julia>
```

julia

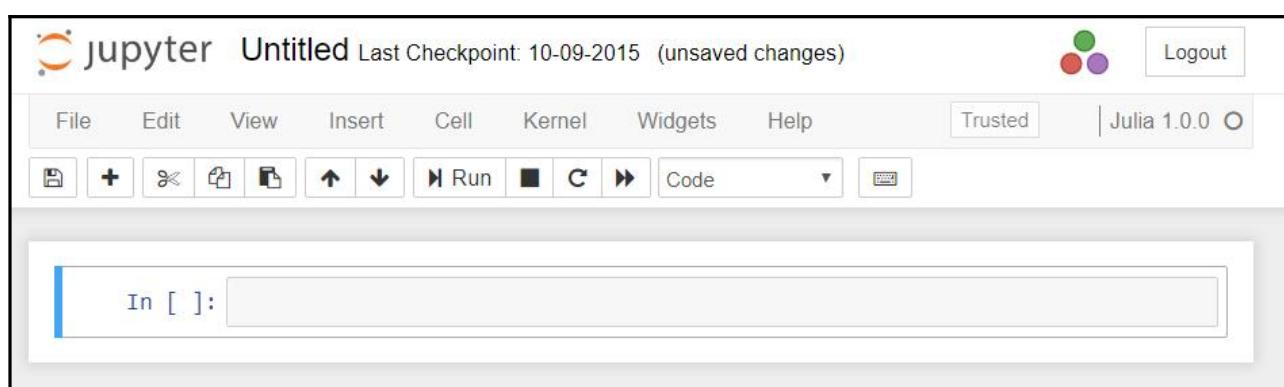
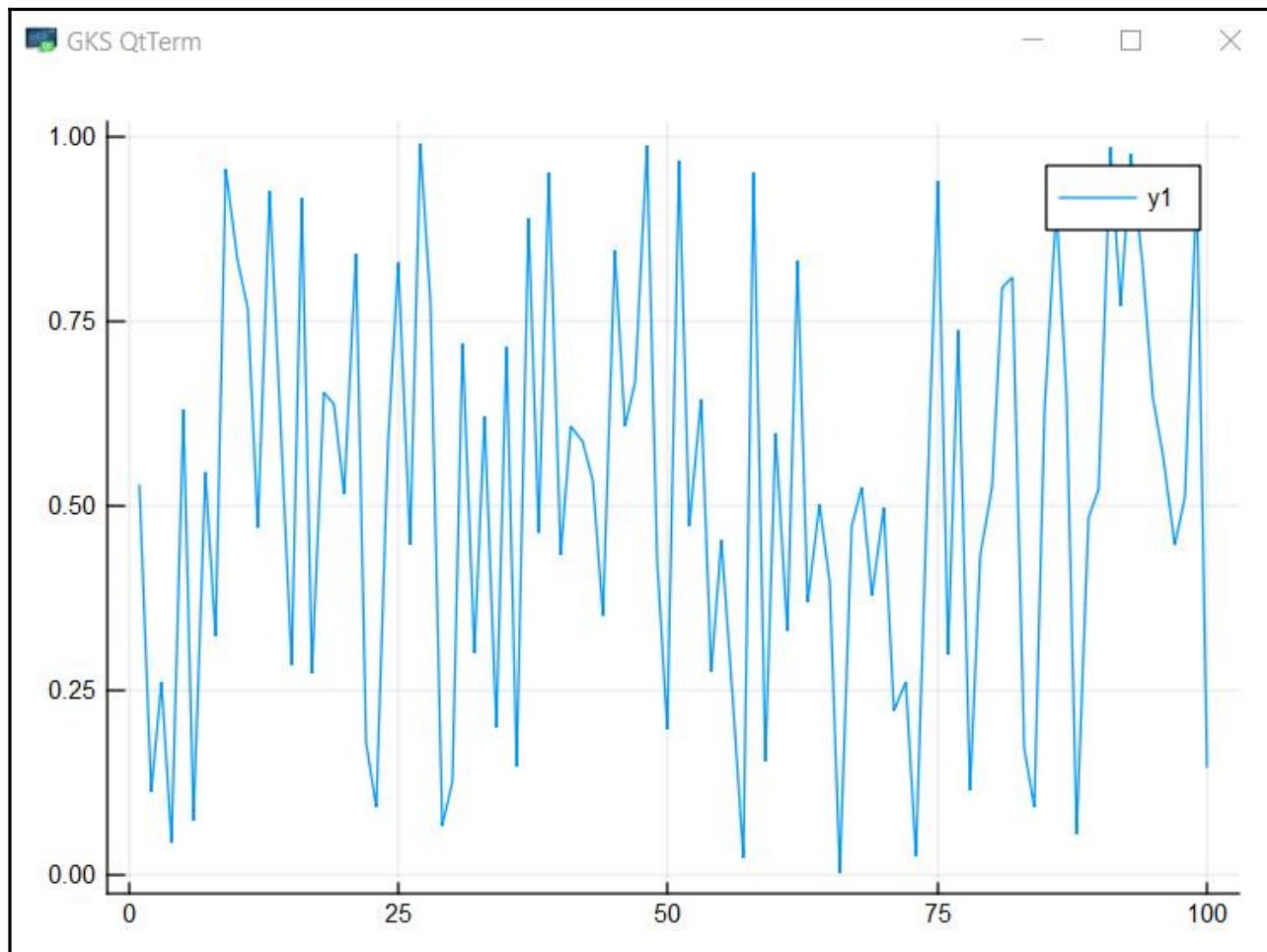
```
julia> a = 1; b = 2; c = 3
3

julia> if 10 > 0
           println("10 is bigger than 0")
       end
10 is bigger than 0

julia>
```

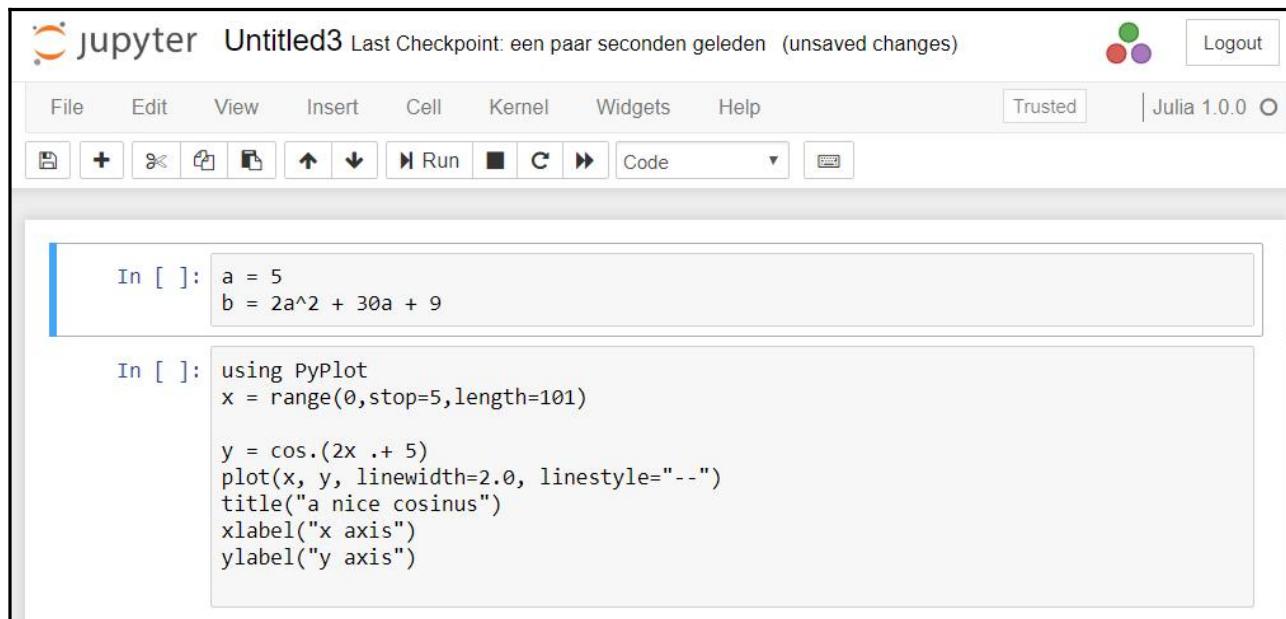
## Graphics Bundle

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## Graphics Bundle

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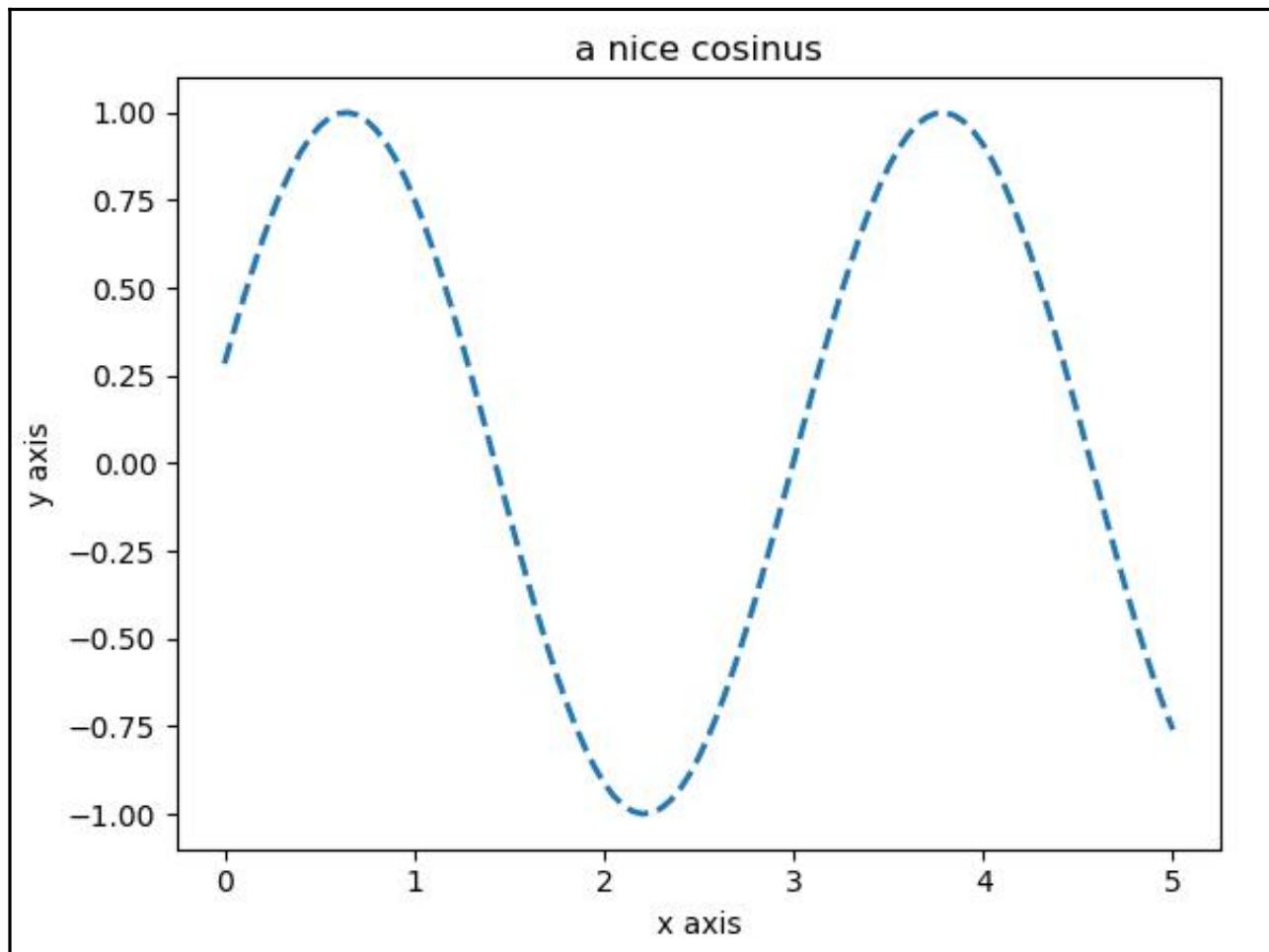


The screenshot shows a Jupyter Notebook interface. At the top, there's a header with the Jupyter logo, the title "Untitled3", a message about the last checkpoint, and user authentication status ("Trusted" and "Julia 1.0.0"). Below the header is a toolbar with various icons for file operations like saving, running cells, and kernel restarts. The main area contains two code cells. The first cell, labeled "In [ ]:", contains the following Julia code:

```
a = 5  
b = 2a^2 + 30a + 9
```

The second cell, also labeled "In [ ]:", contains Python code using PyPlot to generate a plot:

```
using PyPlot  
x = range(0,stop=5,length=101)  
  
y = cos.(2x .+ 5)  
plot(x, y, linewidth=2.0, linestyle="--")  
title("a nice cosinus")  
xlabel("x axis")  
ylabel("y axis")
```

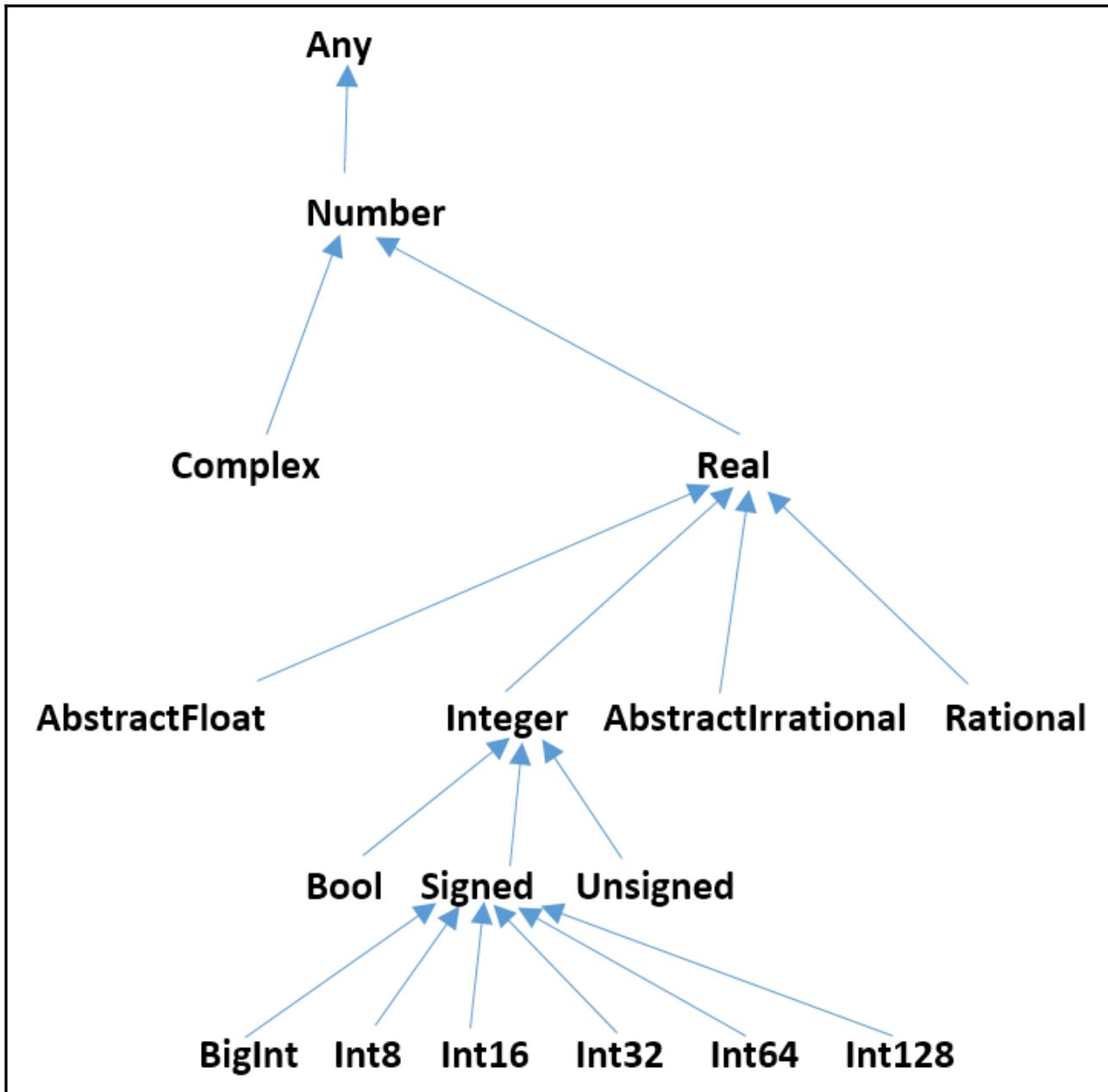


## Chapter 5: Collection Types

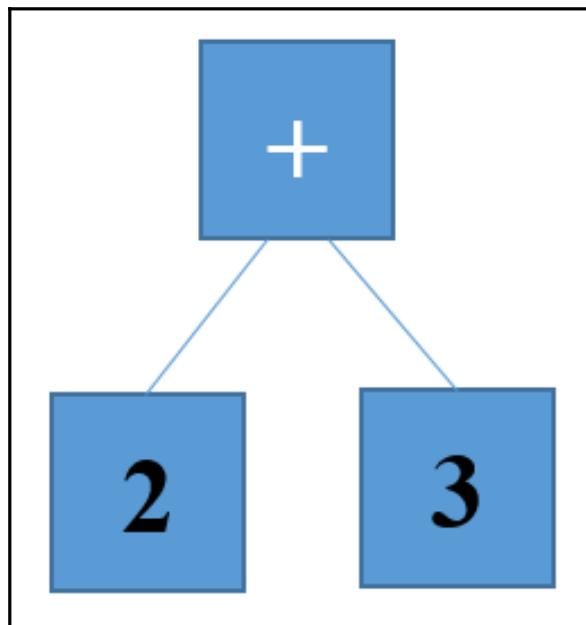
```
julia> [1, 2, 3]
3-element Array{Int64,1}:
 1
 2
 3
```

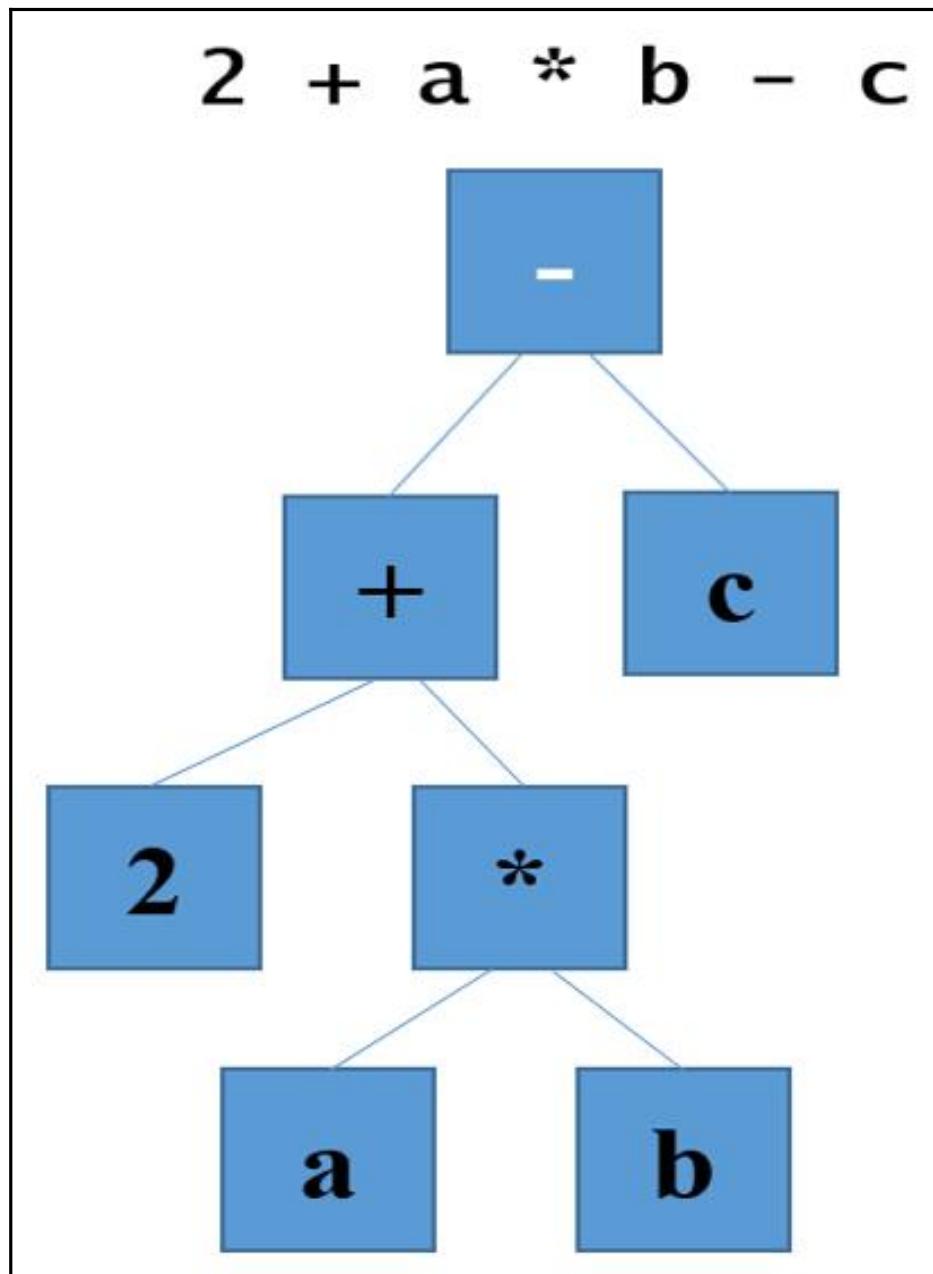
```
julia> a, b, c, d = 1, 22.0, "world", 'x'
(1, 22.0, "world", 'x')
```

## Chapter 6: More on Types, Methods, and Modules



## Chapter 7: Metaprogramming in Julia





julia

```
julia> dump(:((2 + a * b - c)))
Expr
  head: Symbol call
  args: Array{Any}((3,))
    1: Symbol -
    2: Expr
      head: Symbol call
      args: Array{Any}((3,))
        1: Symbol +
        2: Int64 2
        3: Expr
          head: Symbol call
          args: Array{Any}((3,))
            1: Symbol *
            2: Symbol a
            3: Symbol b
    3: Symbol c
```

# Chapter 8: I/O, Networking, and Parallel Computing

fixed acidity	volatile acidity	citric acid	residual sugar	chlorides	free sulfur dioxide	total sulfur dioxide	pH	sulphates	alcohol	quality
7.4	0.7		1.9	0.076	11	34	0.9978	3.51	0.56	9.4
7.8	0.88		2.6	0.098	25	67	0.9968	3.2	0.68	9.8
7.8	0.76	0.04	2.3	0.092	15	54	0.997	3.26	0.65	9.8
11.2	0.28	0.56	1.9	0.075	17	60	0.998	3.16	0.58	9.8
7.4	0.7		1.9	0.076	11	34	0.9978	3.51	0.56	9.4
7.4	0.66		1.8	0.075	13	40	0.9978	3.51	0.56	9.4
7.9	0.6	0.06	1.6	0.069	15	59	0.9964	3.3	0.46	9.4
7.3	0.65		1.2	0.065	15	21	0.9946	3.39	0.47	10
7.8	0.58	0.02		2.073	9	18	0.9968	3.36	0.57	9.5
7.5	0.5	0.36	6.1	0.071	17	102	0.9978	3.35	0.8	10.5
6.7	0.58	0.08	1.8	0.097	15	65	0.9959	3.28	0.54	9.2
7.5	0.5	0.36	6.1	0.071	17	102	0.9978	3.35	0.8	10.5
5.6	0.615		1.6	0.089	16	59	0.9943	3.58	0.52	9.9
7.8	0.61	0.29	1.6	0.114	9	29	0.9974	3.26	1.56	9.1
8.9	0.62	0.18	3.8	0.176	52	145	0.9986	3.16	0.88	9.2
8.9	0.62	0.19	3.9	0.17	51	148	0.9986	3.17	0.93	9.2
8.5	0.28	0.56	1.8	0.092	35	103	0.9969	3.3	0.75	10.5
8.1	0.56	0.28	1.7	0.368	16	56	0.9968	3.11	1.28	9.3
7.4	0.59	0.08	4.4	0.086	6	29	0.9974	3.38	0.5	9
										4

```
show(df)
```

4x3 DataFrame

Row	Col1	Col2	Col3
1	1	2.71828	true
2	2	3.14159	false
3	3	1.41421	true
4	4	42.0	false

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3R8 DataFrame									
Row	variable	mean	min	median	max	nunique	nmissing	eltype	
1	Col1	2.5	1	2.5	4			Int64	
2	Col2	12.3185	1.41421	2.92994	42.0			Float64	
3	Col3	0.5	false	0.5	true			Bool	

1599x12 DataFrame				
Row	fixed_acidity	volatile_acidity	citric_acid	residual_sugar
1	7.4	0.7	0.0	1.9
2	7.8	0.88	0.0	2.6
3	7.8	0.76	0.04	2.3
:				
1596	5.9	0.55	0.1	2.2
1597	6.3	0.51	0.13	2.3
1598	5.9	0.645	0.12	2.0
1599	6.0	0.31	0.47	3.6

```
Documentation: https://docs.julialang.org
Type "?" for help, "]?" for Pkg help.
Version 1.0.0 (2018-08-08)
official https://julialang.org/ release

julia> using Sockets
julia> server = Sockets.listen(8080)
Sockets.TCPServer(Base.Libc.WindowsRawSocket(0x00000000000000358) active)

julia> conn = accept(server)
TCPSocket(Base.Libc.WindowsRawSocket(0x00000000000000364) open, 0 bytes waiting)

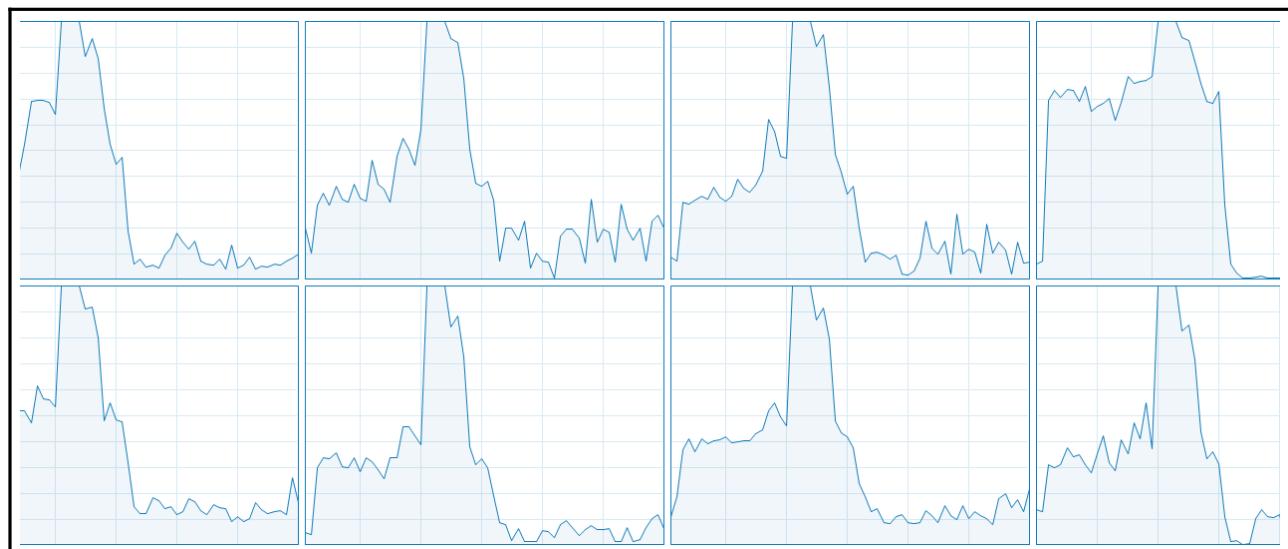
julia>
julia> line = readline(conn)
'hello Julia server!'

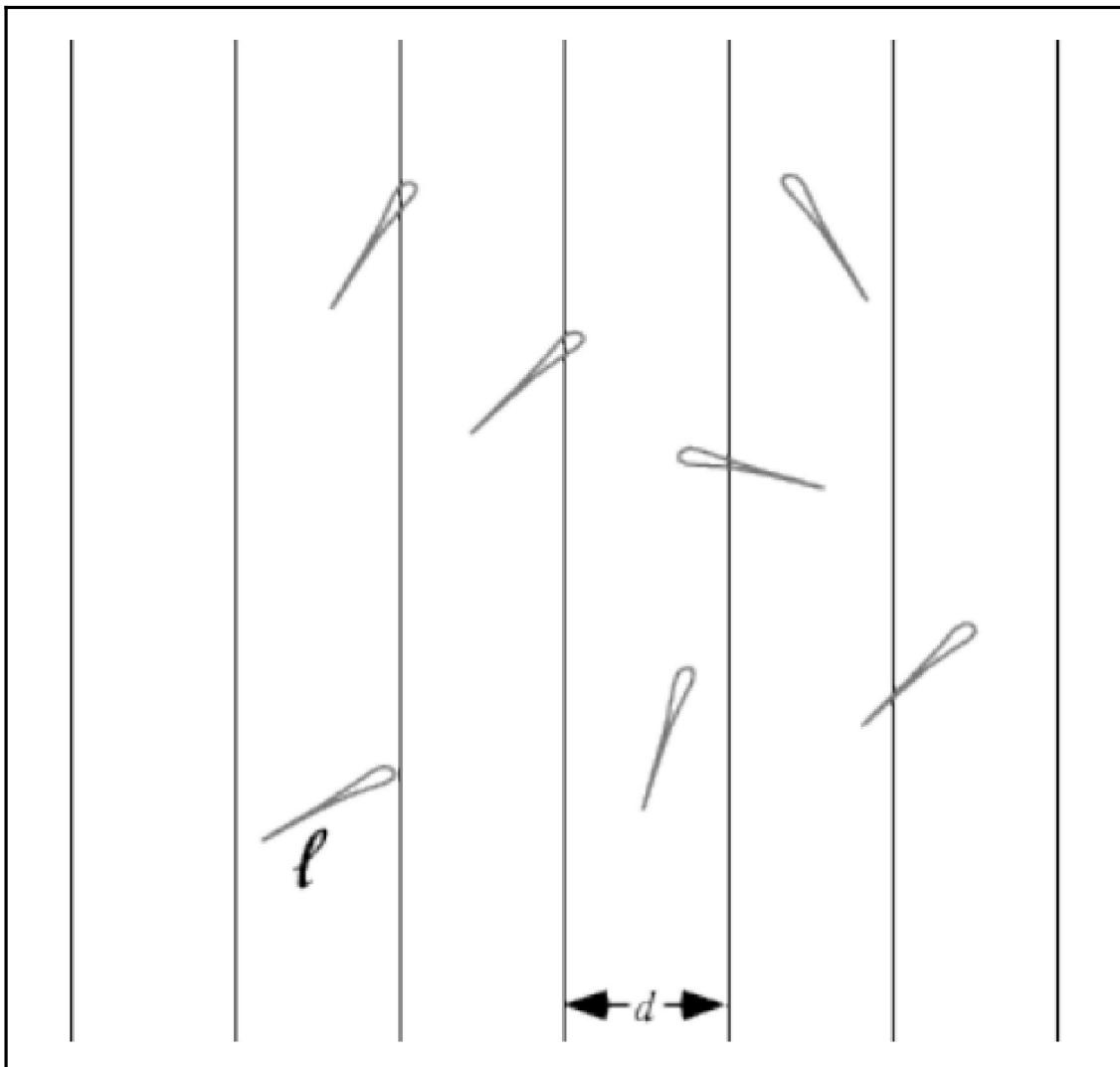
julia> write(conn, "Hello back from server to client, what can I do for you?")
56
Selecteren Opdrachtprompt
e:\Downloads>nc localhost 8080
hello Julia server!
Hello back from server to client, what can I do for you?
e:\Downloads>
```

## Graphics Bundle

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Row	title					
Row	_type	pub_id	price	advance	royalty	ytd_sales
-----						
1	"The Busy Executive's Database Guide"					
2	"Cooking with Computers: Surreptitious Balance Sheets"					
3	"You Can Combat Computer Stress!"					
4	"Straight Talk About Computers"					
5	"Silicon Valley Gastronomic Treats"					
6	"The Gourmet Microwave"					
:						





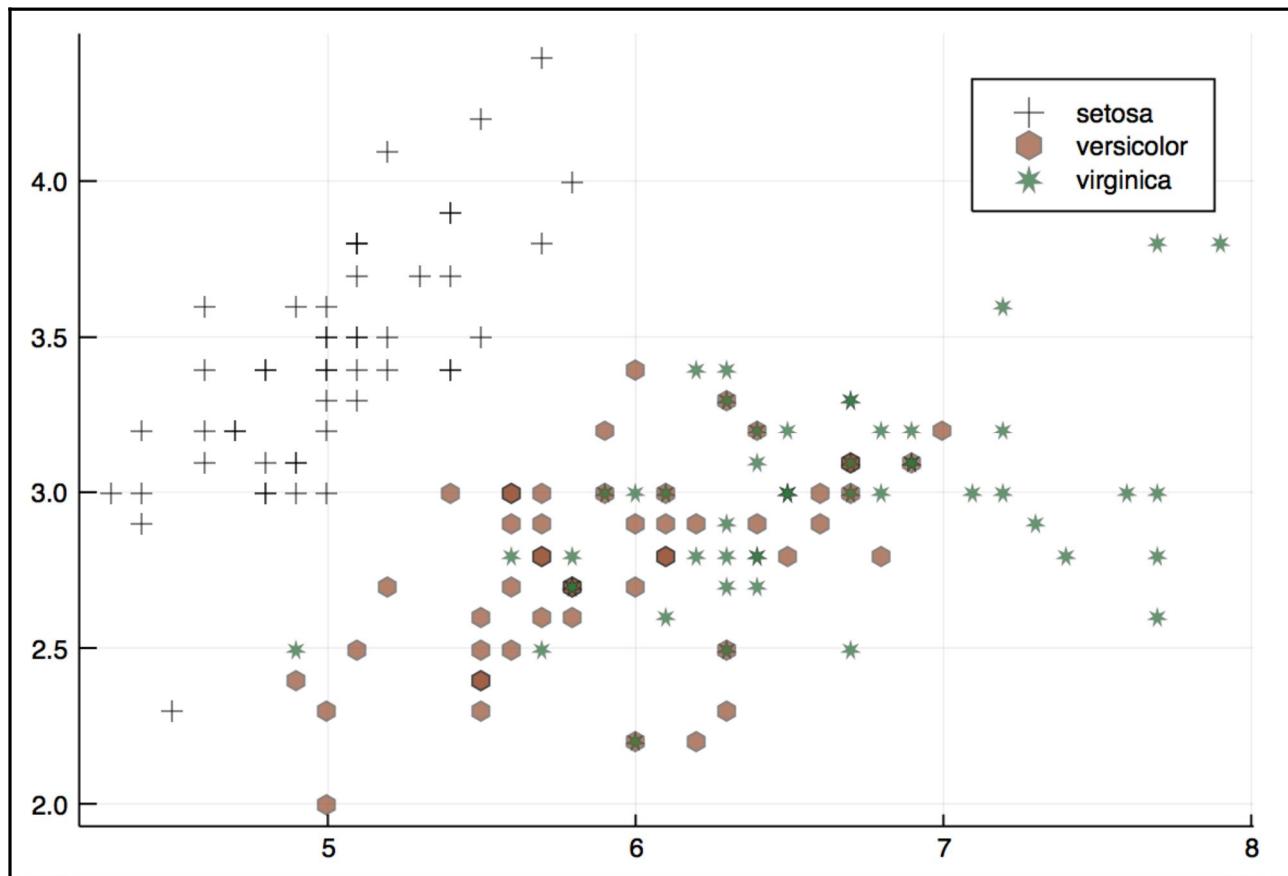
# Chapter 10: The Standard Library and Packages

```
julia> methods(+)
# 167 methods for generic function "+":
[1] +(x::Bool, z::Complex{Bool}) in Base at complex.jl:277
[2] +(x::Bool, y::Bool) in Base at bool.jl:104
[3] +(x::Bool) in Base at bool.jl:101
[4] +(x::Bool, y::T) where T<:AbstractFloat in Base at bool.jl:112
[5] +(x::Bool, z::Complex) in Base at complex.jl:284
[6] +(a::Float16, b::Float16) in Base at float.jl:392
[7] +(x::Float32, y::Float32) in Base at float.jl:394
[8] +(x::Float64, y::Float64) in Base at float.jl:395
[9] +(z::Complex{Bool}, x::Bool) in Base at complex.jl:278
[10] +(z::Complex{Bool}, x::Real) in Base at complex.jl:292
[11] +(::Missing, ::Missing) in Base at missing.jl:92
[12] +(::Missing) in Base at missing.jl:79
[13] +(::Missing, ::Number) in Base at missing.jl:93
[14] +(level::Base.CoreLogging.LogLevel, inc::Integer) in Base.CoreLogging at logging.jl:106
```

```
(v1.0) pkg> status
  Status `C:\Users\CUO\.julia\environments\v1.0\Project.toml`
[336ed68f] CSU v0.3.1
[0fe7c1db] DataArrays v0.7.0
[a93c6f00] DataFrames v0.13.1
[aaf54ef3] DistributedArrays v0.5.1
[f67ccb44] HDF5 v0.10.0
[7073ff75] IJulia v1.10.0
[83e8ac13] IniFile v0.5.0
[682c06a0] JSON v0.19.0
[9c8b4983] LightXML v0.8.0
[d4b2101a] Lint v0.5.2
[e1d29d7a] Missings v0.3.0
[91a5bcdd] Plots v0.20.1
[438e738f] PyCall v1.18.3
[d330b81b] PyPlot v2.6.2
[ce6b1742] RDatasets v0.5.0
[ddb6d928] YAML v0.3.2
```

```
(v1.0) pkg> up
  Updating registry at `C:\Users\CU0\.julia\registries\General`
  Updating git-repo `https://github.com/JuliaRegistries/General.git`
Resolving package versions...
  Updating `C:\Users\CU0\.julia\environments\v1.0\Project.toml`
[no changes]
  Updating `C:\Users\CU0\.julia\environments\v1.0\Manifest.toml`
[no changes]

(v1.0) pkg>
```



## Chapter 11: Creating Our First Julia App



Row	Package	Dataset	Title	Rows	Columns
1	COUNT	affairs	affairs	601	18
2	COUNT	azdrgr112	azdrgr112	1798	4
3	COUNT	azpro	azpro	3589	6
4	COUNT	badhealth	badhealth	1127	3
5	COUNT	fasttrakg	fasttrakg	15	9
6	COUNT	lbw	lbw	189	10
7	COUNT	lbwgrp	lbwgrp	6	7
8	COUNT	loomis	loomis	410	11
9	COUNT	mdvis	mdvis	2227	13
10	COUNT	medpar	medpar	1495	10
11	COUNT	rwm	rwm	27326	4
12	COUNT	rwm5yr	rwm5yr	19609	17
13	COUNT	ships	ships	40	7
14	COUNT	titanic	titanic	1316	4
15	COUNT	titanicgrp	titanicgrp	12	5
16	Ecdat	Accident	Ship Accidents	40	5
17	Ecdat	Airline	Cost for U.S. Airlines	90	6
18	Ecdat	Airq	Air Quality for Californian Metropolitan Areas	30	6
19	Ecdat	Benefits	Unemployment of Blue Collar Workers	4877	18
20	Ecdat	Bids	Bids Received By U.S. Firms	126	12

*Graphics Bundle*

---

150×5 DataFrame

Row	SepalLength	SepalWidth	PetalLength	PetalWidth	Species
1	5.1	3.5	1.4	0.2	setosa
2	4.9	3.0	1.4	0.2	setosa
3	4.7	3.2	1.3	0.2	setosa
4	4.6	3.1	1.5	0.2	setosa
5	5.0	3.6	1.4	0.2	setosa
6	5.4	3.9	1.7	0.4	setosa
7	4.6	3.4	1.4	0.3	setosa
8	5.0	3.4	1.5	0.2	setosa
9	4.4	2.9	1.4	0.2	setosa
10	4.9	3.1	1.5	0.1	setosa

6×5 DataFrame

Row	SepalLength	SepalWidth	PetalLength	PetalWidth	Species
1	5.1	3.5	1.4	0.2	setosa
2	4.9	3.0	1.4	0.2	setosa
3	4.7	3.2	1.3	0.2	setosa
4	4.6	3.1	1.5	0.2	setosa
5	5.0	3.6	1.4	0.2	setosa
6	5.4	3.9	1.7	0.4	setosa

10×5 DataFrame

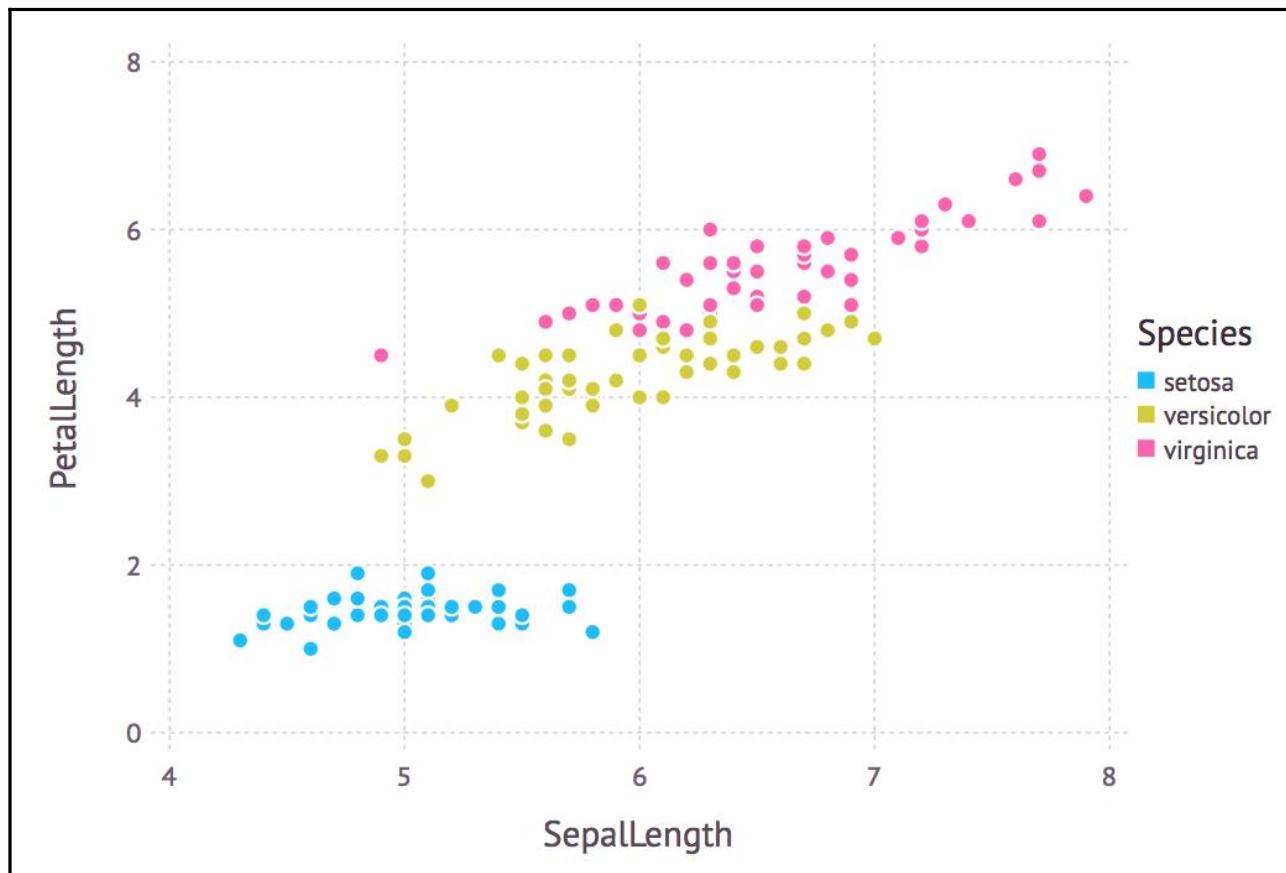
Row	SepalLength	SepalWidth	PetalLength	PetalWidth	Species
1	6.7	3.1	5.6	2.4	virginica
2	6.9	3.1	5.1	2.3	virginica
3	5.8	2.7	5.1	1.9	virginica
4	6.8	3.2	5.9	2.3	virginica
5	6.7	3.3	5.7	2.5	virginica
6	6.7	3.0	5.2	2.3	virginica
7	6.3	2.5	5.0	1.9	virginica
8	6.5	3.0	5.2	2.0	virginica
9	6.2	3.4	5.4	2.3	virginica
10	5.9	3.0	5.1	1.8	virginica

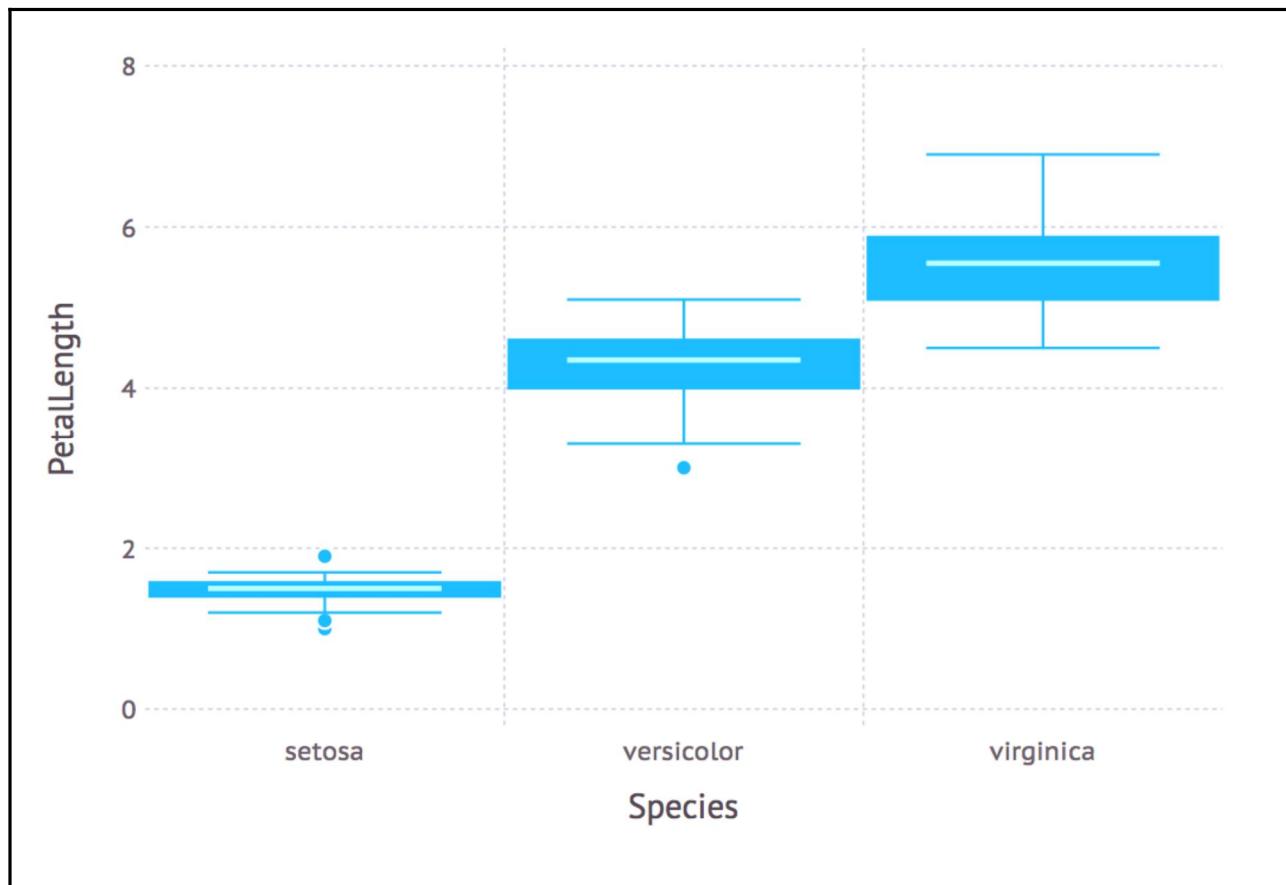
3×2 DataFrame		
Row	Species	x1
1	setosa	50
2	versicolor	50
3	virginica	50

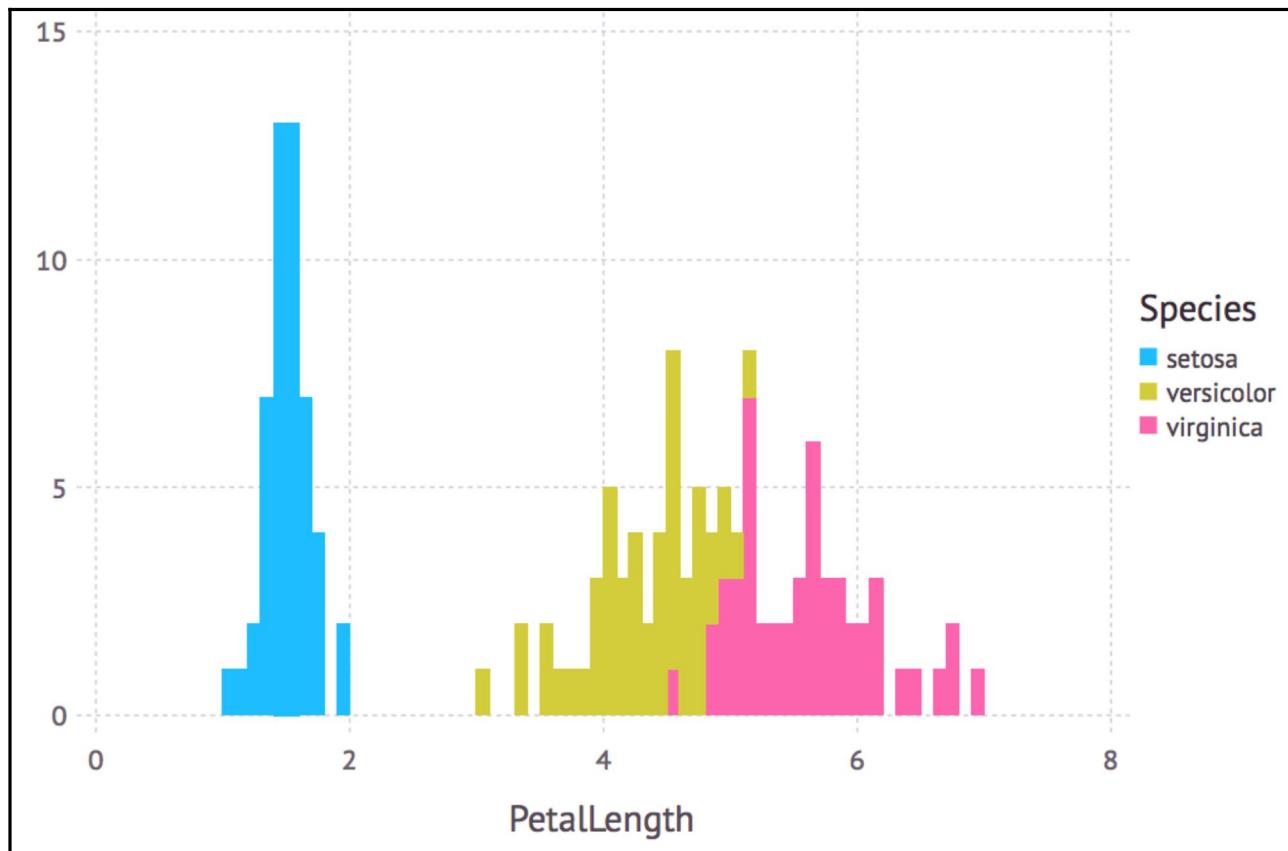
5×8 DataFrame									
Row	variable	mean	min	median	max	nunique	nmissing	eltype	
1	SepalLength	5.84333	4.3	5.8	7.9			Float64	
2	SepalWidth	3.05733	2.0	3.0	4.4			Float64	
3	PetalLength	3.758	1.0	4.35	6.9			Float64	
4	PetalWidth	1.19933	0.1	1.3	2.5			Float64	
5	Species		setosa		virginica	3		CategoricalString{UInt8}	

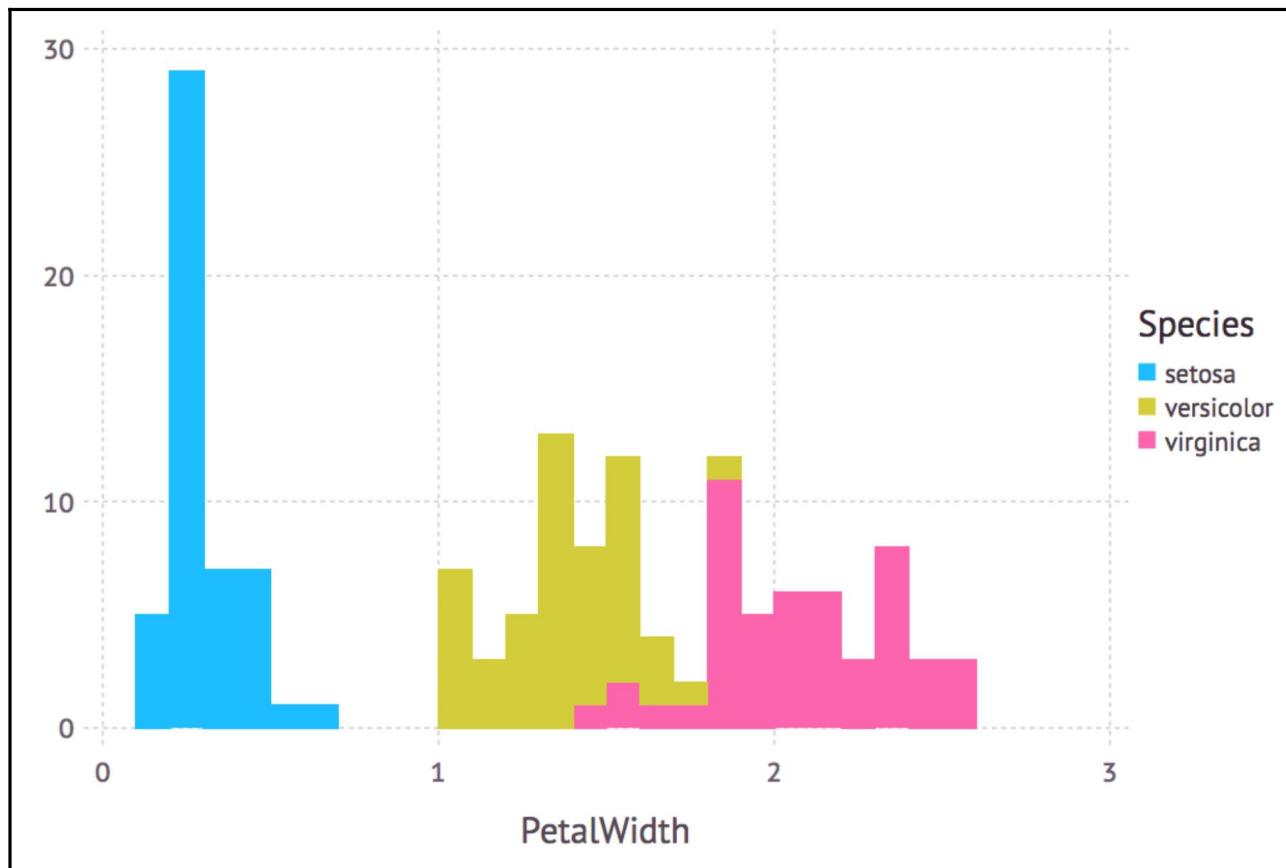
5×5 DataFrame						
Row	variable	q25	q75	first	last	
1	SepalLength	5.1	6.4	5.1	5.9	
2	SepalWidth	2.8	3.3	3.5	3.0	
3	PetalLength	1.6	5.1	1.4	5.1	
4	PetalWidth	0.3	1.8	0.2	1.8	
5	Species			setosa	virginica	

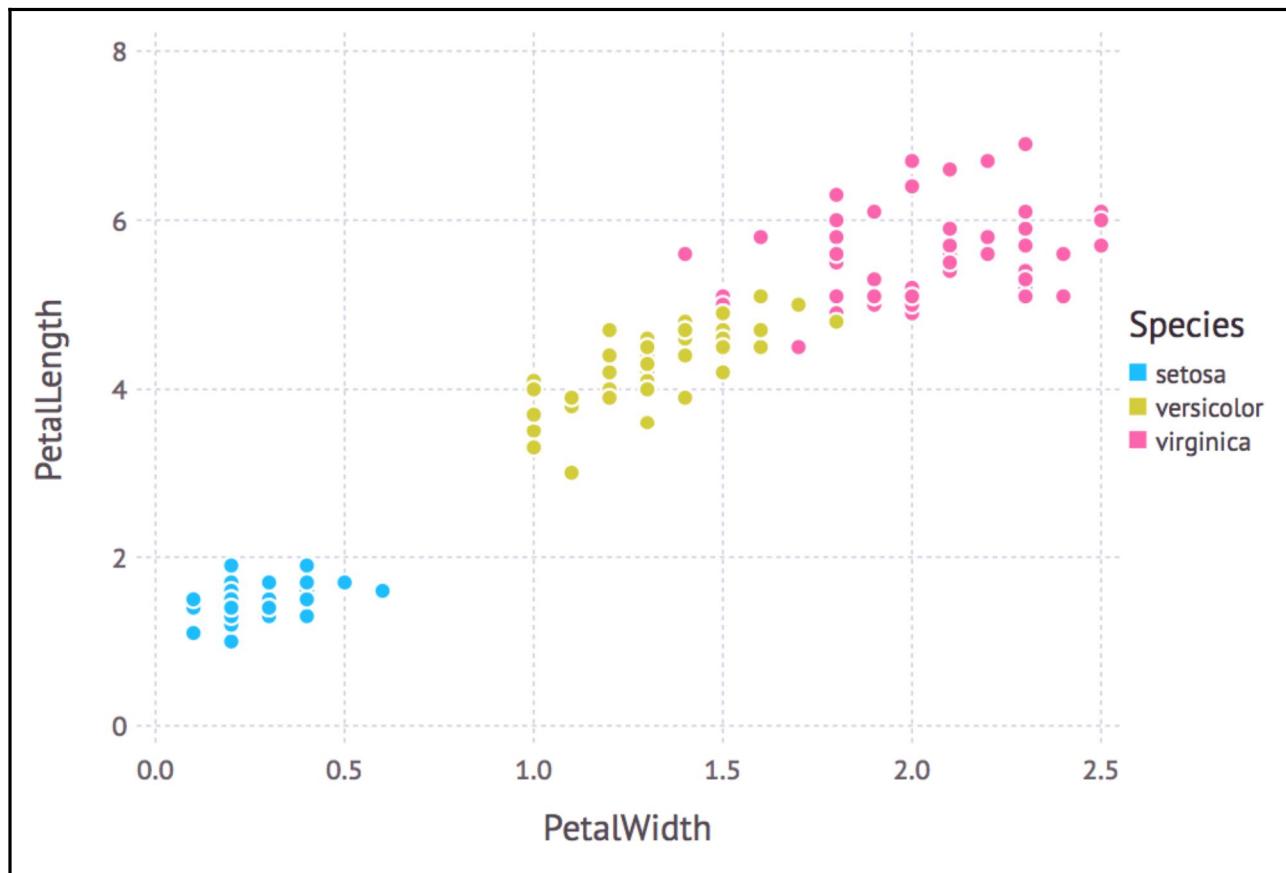
5×13 DataFrame													
Row	variable	mean	std	min	q25	median	q75	max	nunique	nmissing	first	last	eltype
1	Sepallength	5.84333	0.828066	4.3	5.1	5.8	6.4	7.9			5.1	5.9	Float64
2	SepalWidth	3.05733	0.435866	2.0	2.8	3.0	3.3	4.4			3.5	3.0	Float64
3	PetalLength	3.758	1.7653	1.0	1.6	4.35	5.1	6.9			1.4	5.1	Float64
4	PetalWidth	1.19933	0.762238	0.1	0.3	1.3	1.8	2.5			0.2	1.8	Float64
5	Species			setosa				virginica	3		setosa	virginica	CategoricalString{UInt8}











## Chapter 12: Setting Up the Wiki Game

### Julia (programming language)

#### Language features

According to the official website, the main features of the language are:

- Multiple dispatch
- Dynamic type
- Good performance

#### External links [ edit ]

- [Official website](#)
- [The Julia manual](#)
- [Julia Package Listing](#) – a searchable listing of all (currently over 1500 with combined over 30,000 GitHub stars) registered packages

#### Language features [ edit ]

According to the official website, the main features of the language are:

- **Multiple dispatch:** providing ability to define function behavior across many combinations of argument types
- **Dynamic type system:** types for documentation, optimization, and dispatch
- Good performance, approaching that of **statically-typed** languages like C

## Graphics Bundle

---

```
julia> HTTP.get("https://en.wikipedia.org/wiki/Julia_(programming_language)")
HTTP.Messages.Response:
"""
HTTP/1.1 200 OK
Date: Mon, 17 Sep 2018 10:35:38 GMT
Content-Type: text/html; charset=UTF-8
Content-Length: 193324
Connection: keep-alive
Server: mw2174.codfw.wmnet
Vary: Accept-Encoding,Cookie,Authorization
X-Content-Type-Options: nosniff
P3P: CP="This is not a P3P policy! See https://en.wikipedia.org/wiki/Special:CentralAutoLogin/P3P for more info."
X-Powered-By: HHVM/3.18.6-dev
Content-language: en
Last-Modified: Sun, 16 Sep 2018 06:23:32 GMT
Backend-Timing: D=94531 t=1537079074050651
X-Varnish: 343909603 326005351, 885580661 879616280, 1013404048 653558799
Via: 1.1 varnish (Varnish/5.1), 1.1 varnish (Varnish/5.1), 1.1 varnish (Varnish/5.1)
Age: 18448
X-Cache: cp2016 hit/5, cp3030 hit/2, cp3042 hit/26
X-Cache-Status: hit-front
Strict-Transport-Security: max-age=106384710; includeSubDomains; preload
Set-Cookie: WMF-Last-Access=17-Sep-2018;Path=/;HttpOnly;secure;Expires=Fri, 19 Oct 2018 00:00:00 GMT
Set-Cookie: WMF-Last-Access-Global=17-Sep-2018;Path=/;Domain=.wikipedia.org;HttpOnly;secure;Expires=Fri, 19 Oct 2018 0
0:00:00 GMT
X-Analytics: ns=0;page_id=38455554;https=1;nocookies=1
X-Client-IP: 83.51.206.212
Cache-Control: private, s-maxage=0, max-age=0, must-revalidate
Set-Cookie: GeoIP=ES:CT:Sitges:41.24:1.81:v4; Path=/; secure; Domain=.wikipedia.org
Accept-Ranges: bytes

<!DOCTYPE html>
<html class="client-nojs" lang="en" dir="ltr">
<head>
<meta charset="UTF-8"/>
<title>Julia (programming language) - Wikipedia</title>
<script>document.documentElement.className = document.documentElement.className.replace( /(^\s)client-nojs(\s|$)/, "$1client-js$2" );</script>
<script>(window.RLQ>window.RLQ||[]).push(function(){mw.config.set({"wgCanonicalNamespace":"","wgCanonicalSpecialPageName":false,"wgNamespaceNumber":0,"wgPageName":"Julia_(programming_language)","wgTitle":"Julia (programming language)","wgCurRevisionId":859773913,"wgRevisionId":859773913,"wgArticleId":38455554,"wgIsArticle":true,"wgIsRedirect":false,"wgAction":"view","wgUserName":null,"wgUserGroups":["*"],"wgCategories":["CS1 maint: Multiple names: authors list","Use d
my dates from October 2015","Official website different in Wikidata and Wikipedia","2012 software","Array programming languages","Computational notebook","Data mining and machine learning software","Data-centric programming languages"
:
193324-byte body
"""

```

## Graphics Bundle

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```
25-element Array{Pair{SubString{String},SubString{String}}},1]:
    "Date" => "Mon, 17 Sep 2018 11:02:39 GMT"
    "Content-Type" => "text/html; charset=UTF-8"
    "Content-Length" => "193324"
    "Connection" => "keep-alive"
    "Server" => "mw2174.codfw.wmnet"
    "Vary" => "Accept-Encoding,Cookie,Authorization"
    "X-Content-Type-Options" => "nosniff"
    "P3P" => "CP=\"This is not a P3P policy! See https://en.wikipedia.org/wiki/Special:Central"
    "X-Powered-By" => "HHVM/3.18.6-dev"
    "Content-language" => "en"
    "Last-Modified" => "Sun, 16 Sep 2018 06:23:32 GMT"
    "Backend-Timing" => "D=94531 t=1537079074050651"
    "X-Varnish" => "343909603 326005351, 885580661 879616280, 2790139 653558799"
    "Via" => "1.1 varnish (Varnish/5.1), 1.1 varnish (Varnish/5.1), 1.1 varnish (Varnish/5.1)"
    "Age" => "20069"
    "X-Cache" => "cp2016 hit/5, cp3030 hit/2, cp3042 hit/29"
    "X-Cache-Status" => "hit-front"
    "Strict-Transport-Security" => "max-age=106384710; includeSubDomains; preload"
    "Set-Cookie" => "WMF-Last-Access=17-Sep-2018;Path=/;HttpOnly;secure;Expires=Fri, 19 Oct 2018 00:00:00 UTC"
    "Set-Cookie" => "WMF-Last-Access-Global=17-Sep-2018;Path=/;Domain=.wikipedia.org;HttpOnly;secure;Expires=Fri, 19 Oct 2018 00:00:00 UTC"
    "X-Analytics" => "ns=0;page_id=38455554;https=1;nocookies=1"
    "X-Client-IP" => "83.51.206.212"
    "Cache-Control" => "private, s-maxage=0, max-age=0, must-revalidate"
    "Set-Cookie" => "GeoIP=ES:CT:Sitges:41.24:1.81:v4; Path=/; secure; Domain=.wikipedia.org"
    "Accept-Ranges" => "bytes"
```

```
"<!DOCTYPE html>
<html class=\"client-nojs\" lang=\"en\" dir=\"ltr\">
<head>
<meta charset=\"UTF-8\"/>
<title>Julia (programming language) - Wikipedia</title>
<script>document.documentElement.className = document.documentElement.className.replace( /(^\s)client-nojs(\s|$)/, "\$1client-js\$2" );</script>
<script>(window.RLQ>window.RLQ||[]).push(function(){mw.config.set({"wgCanonicalNamespace": "\\", "wgCanonicalSpecialPageName": false, "wgNamespaceNumber": 0, "wgPageName": "Julia_(programming_language)", "wgTitle": "Julia (programming language)"})});</script>
```

```
1 <!DOCTYPE html>
2 <html class="client-nojs" lang="en" dir="ltr">
3 <head>
4 <meta charset="UTF-8" />
5 <title>Julia (programming language) - Wikipedia</title>
6 <script>document.documentElement.className =
document.documentElement.className.replace( /(^\s)client-nojs(\s|$)/,
"\$1client-js\$2" );</script>
7 <script>(window.RLQ>window.RLQ||[]).push(function()
{mw.config.set({ "wgCanonicalNamespace" : "", "wgCanonicalSpecialPageName" :false , "wgNamespaceNumber" :0, "wgPageName" :"Julia_(programming_language)" , "wgTitle" :"Julia (programming language)" })});</script>
```

```
1 <!DOCTYPE html>
2 <html class="client-nojs" lang="en" dir="ltr">
```

```
help?> thermal_comfort
search: thermal_comfort

thermal_comfort(temperature, humidity; <keyword arguments>)

Compute the thermal comfort index based on temperature and humidity. It can optionally take into account the age of the patient. Works for both Celsius and Fahrenheit.

Examples:
=====
julia> thermal_comfort(32, 78)
12

Arguments
=====


- temperature: the current air temperature
- humidity: the current air humidity
- scale: whether :celsius or :fahrenheit, defaults to :celsius
- age: the age of the patient

```

# Chapter 13: Building the Wiki Game Web Crawler

The screenshot shows a Julia REPL window with the following details:

- Project View:** Shows a project structure with a `sixdegrees` folder containing `Manifest.toml`, `Project.toml`, and `six_degrees.jl`. There is also a `Wikipedia.jl` file.
- Code Editor:** Displays the contents of `six_degrees.jl` which includes code to import `Pkg`, activate the package, include `Wikipedia.jl`, use `.Wikipedia`, and fetch random articles.
- REPL Area:** Starts with "Starting Julia...". It then displays the version information: "Version 1.0.0 (2018-08-08) Official https://julialang.org/ release".
- Output:** Shows the result of running the script, which is a 10-element array of strings representing Wikipedia URLs:

```
10-element Array{String,1}:
"/wiki/Main_Page"
"/wiki/Katutura"
"/wiki/Windhoek"
"/wiki/Namibia"
"/wiki/State_school"
"/wiki/Mixed-sex_education"
"/wiki/Geographic_coordinate_system"
"/wiki/Headmaster"
"/wiki/New_Era_(Namibia)"
"/wiki/The_Namibian"
```
- Bottom Status:** Shows the Julia prompt `julia>` and the status bar indicating "Main 0 files".

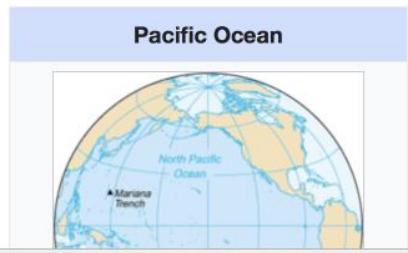
WIKIPEDIA

# Pacific Ocean

North Pacific", "Pacific", and "Pacific region" redirect here. For the region in Colombia, see [Pacific Region, Colombia](#). For other uses, see [North Pacific \(disambiguation\)](#) and [Pacific \(disambiguation\)](#).

The **Pacific Ocean** is the largest and deepest of Earth's oceanic divisions. It extends from the [Arctic Ocean](#) in the north to the [Southern Ocean](#) (or, depending on definition, to [Antarctica](#)) in the south and is bounded by [Asia](#) and [Australia](#) in the west and the [Americas](#) in the east.

At 165,250,000 square kilometers (63,800,000 square miles) in area (as defined with an Antarctic southern border), this largest division of the [World Ocean](#)—and, in turn, the [hydrosphere](#)—covers about 46% of Earth's water surface and about one-third of its total surface area, making it larger than all of Earth's land area combined.<sup>[1]</sup> Both the center of the [Water Hemisphere](#) and the [Western Hemisphere](#) are in the Pacific Ocean. The [equator](#) subdivides it into the **North Pacific Ocean** and **South Pacific Ocean**, with two exceptions: the [Galápagos](#) and [Gilbert Islands](#), while straddling the equator, are deemed wholly within the South Pacific.<sup>[2]</sup> Its mean depth is 4,280 meters (14,040 feet). The



Elements Network Resources Timelines Debugger Storage Console

```
<body>
  <div id="mw-mf-viewport">
    <div id="mw-mf-page-center">
      <div id="content">
        <div class="pre-content heading-holder">
          <h1 id="section_0">Pacific Ocean</h1>
```

## Australia

From Wikipedia, the free encyclopedia

Coordinates: 25°S 133°E

*This article is about the country. For the continent, see Australia (continent). For other uses, see Australia (disambiguation).*

**Australia** (/əˈstreɪliə/ (listen), /ɒ-/; /-ljeɪ/),<sup>[10][11]</sup> officially the **Commonwealth of Australia**,<sup>[12]</sup> is a sovereign country comprising the mainland of the **Australian continent**, the island of **Tasmania** and numerous **smaller islands**. It is the largest country in **Oceania** and the world's **sixth-largest country by total area**. The neighbouring countries are **Papua New Guinea**, **Indonesia** and **East Timor** to the north; the **Solomon Islands** and **Vanuatu** to the north-east; and **New Zealand** to the south-east. Australia's capital is **Canberra**, and its largest urban area is **Sydney**.

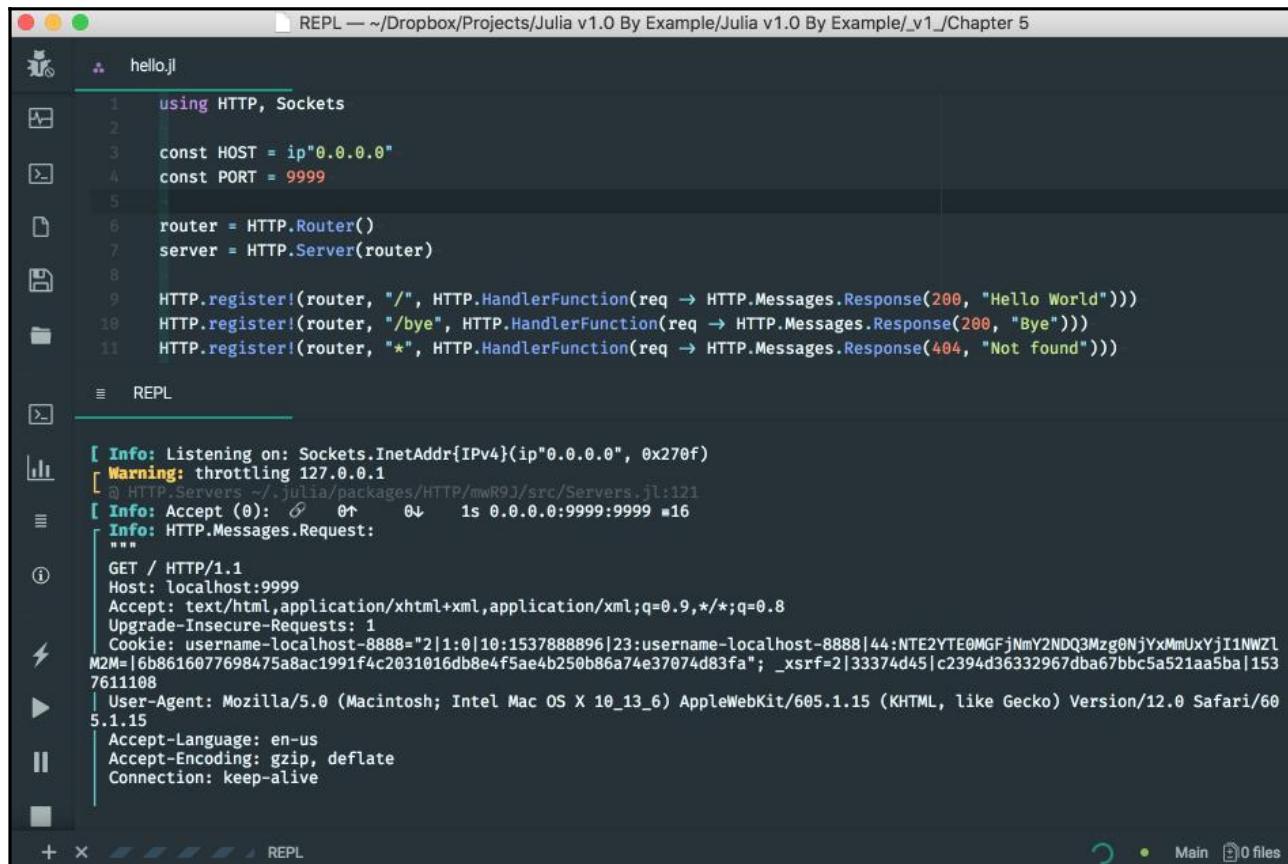
For about 50,000 years<sup>[13]</sup> before the first British settlement in the late 18th century,<sup>[14][15]</sup> Australia was inhabited by **indigenous Australians**,<sup>[16]</sup> who spoke languages classifiable into roughly **250 groups**.<sup>[17][18]</sup> After the European discovery of the continent by Dutch explorers in **1606**, Australia's eastern half was claimed by Great Britain in **1770** and initially settled through **penal transportation** to the colony of **New South Wales** from 26 January **1788**. The population grew steadily in subsequent decades, and by the **1850s** most of the continent had been explored and an additional five self-governing **crown colonies** established. On 1 January **1901**, the six colonies federated, forming the Commonwealth of Australia. Australia has since maintained a stable **liberal democratic political system** that functions as a **federal parliamentary constitutional monarchy** comprising **six states and several territories**.

Australia has the world's **13th-largest economy** and **ninth-highest per capita income** (IMF).<sup>[19]</sup> With the second-highest **human development index** globally, the country **ranks highly** in quality of life, health, education, economic freedom, and civil liberties and political rights.<sup>[20]</sup> Australia is a member of the United Nations, G20, Commonwealth of Nations, ANZUS, Organisation for Economic Co-operation and Development (OECD), World Trade Organization, Asia-Pacific Economic Cooperation, and the Pacific Islands Forum. The population of 25 million<sup>[5]</sup> is highly urbanised and heavily concentrated on the eastern seaboard.<sup>[21]</sup> Australia has the world's **9th largest immigrant population**, with immigrants accounting for 26% of



Objects		articles@six_degrees (lo...)
title		content
I Hillary Maritim		<!DOCTYPE html>
Athletics at the 2000 Summer Olympics – Men's 400 metres hurdle		<!DOCTYPE html>
Zahr-el-Din El-Najem		<!DOCTYPE html>
		SELECT * FROM `six_degrees`.`articles` LIMIT 0,1000

# Chapter 14: Adding a Web UI for the Wiki Game



The screenshot shows a Julia REPL window with the title "REPL — ~/Dropbox/Projects/Julia v1.0 By Example/Julia v1.0 By Example/\_v1./Chapter 5". The left sidebar shows a file tree with "hello.jl" selected. The code in "hello.jl" is:

```
using HTTP, Sockets
const HOST = ip"0.0.0.0"
const PORT = 9999
router = HTTP.Router()
server = HTTP.Server(router)
HTTP.register!(router, "/", HTTP.HandlerFunc(req → HTTP.Messages.Response(200, "Hello World")))
HTTP.register!(router, "/bye", HTTP.HandlerFunc(req → HTTP.Messages.Response(200, "Bye")))
HTTP.register!(router, "*", HTTP.HandlerFunc(req → HTTP.Messages.Response(404, "Not found")))
```

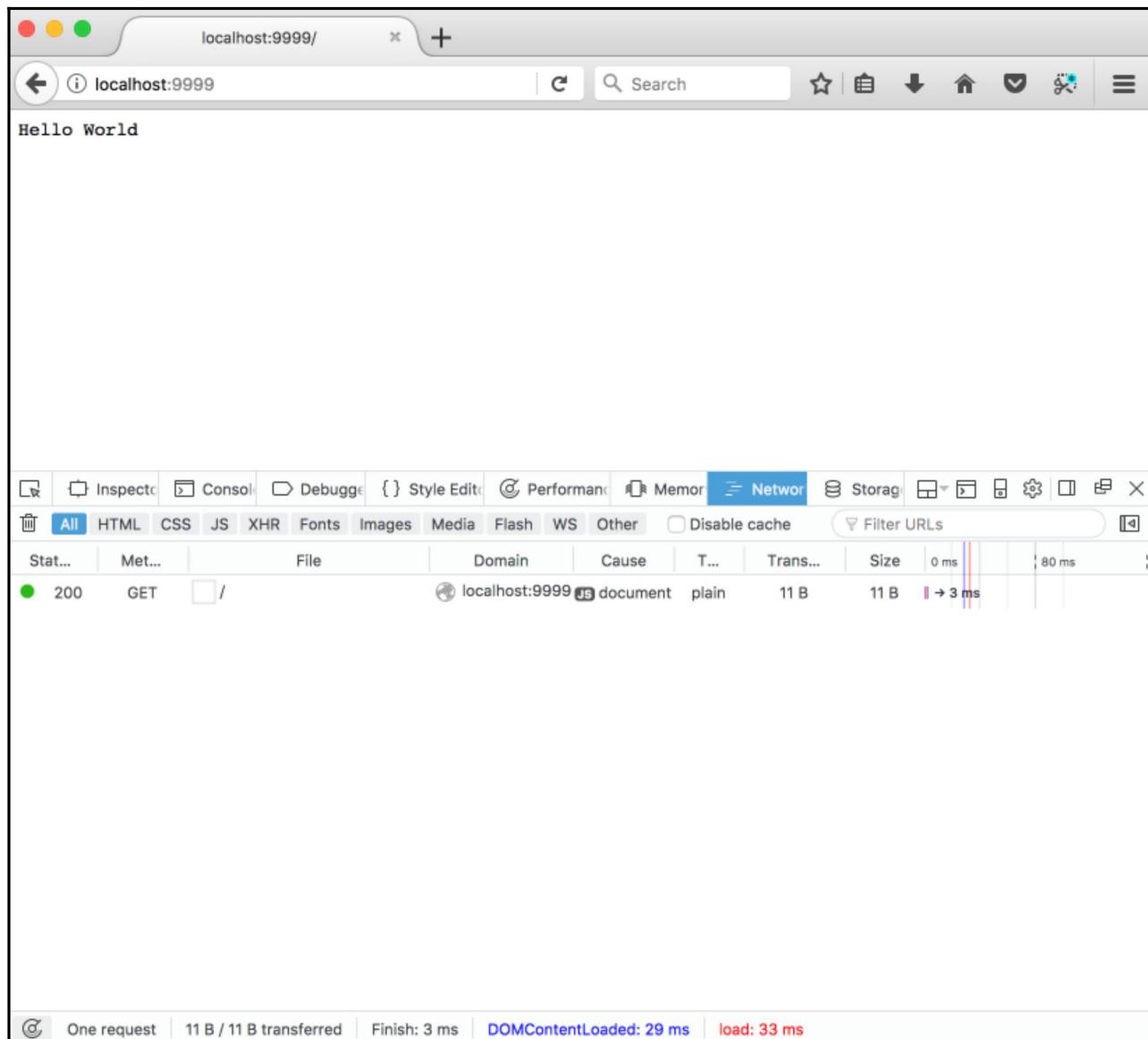
The main area shows the REPL output:

```
[ Info: Listening on: Sockets.InetAddr{IPv4}(ip"0.0.0.0", 0x270f)
[ Warning: throttling 127.0.0.1
@ HTTP.Servers ~/julia/packages/HTTP/mwR9J/src/Servers.jl:121
[ Info: Accept (0): 0 0 0 0:9999:9999 w16
Info: HTTP.Messages.Request:
"""
GET / HTTP/1.1
Host: localhost:9999
Accept: text/html,application/xhtml+xml,application/xml;q=0.9,*/*;q=0.8
Upgrade-Insecure-Requests: 1
Cookie: username-localhost-8888="2|1:0|10:153788896|23:username-localhost-8888|44:NTE2YTE0MGFjNmY2NDQ3Mzg0NjYxMmUxYjI1NWZlM2M=|6b8616077698475a8ac1991f4c2931016db8e4f5ae4b250b86a74e37074d83fa"; _xsrf=2|33374d45|c2394d36332967dba67bbc5a521aa5ba|1537611108
User-Agent: Mozilla/5.0 (Macintosh; Intel Mac OS X 10_13_6) AppleWebKit/605.1.15 (KHTML, like Gecko) Version/12.0 Safari/605.1.15
Accept-Language: en-us
Accept-Encoding: gzip, deflate
Connection: keep-alive
```

The bottom status bar shows "Main 0 files".

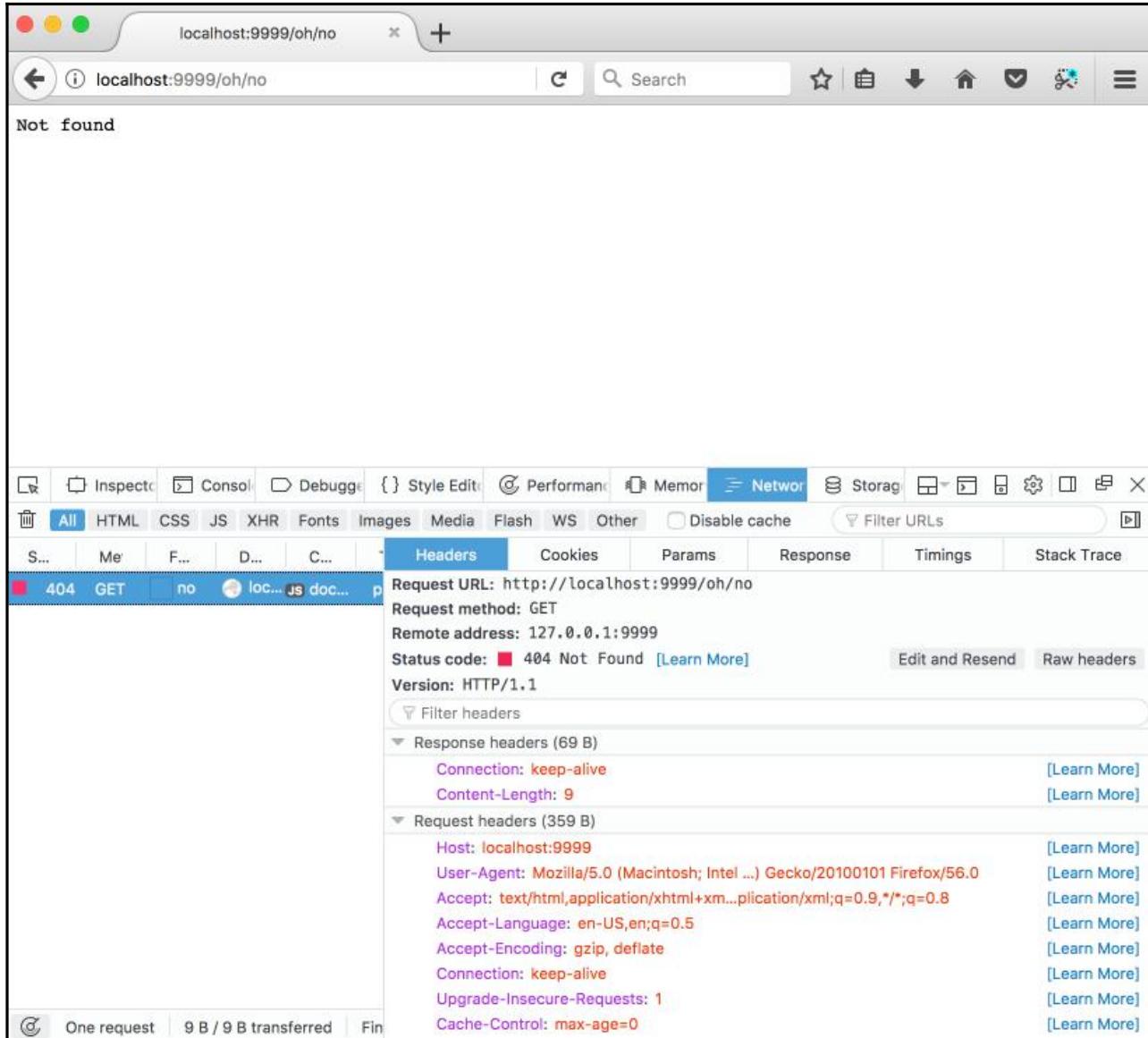
## Graphics Bundle

---



## Graphics Bundle

---



# Six degrees of Wikipedia

The goal of the game is to find the shortest path between two random Wikipedia articles. Depending on the difficulty level you choose, the Wiki pages will be further apart and less related.

If you can't find the solution, you can always go back up the articles chain, but you need to find the solution within the maximum number of steps, otherwise you lose.

If you get stuck, you can always check the solution, but you'll lose.

Good luck and enjoy!

## New game

[Easy \(2 links away\)](#)

| [Medium \(4 links away\)](#)

| [Hard \(6 links away\)](#)

## Saigon (Grey novel)

[Open main menu](#)



Search Wikipedia

Search

- [Edit this page](#)
- 
- 

## Saigon (Grey novel)

This article **does not cite any sources**. Please help [improve this article](#) by [adding citations to reliable sources](#). Unsourced material may be challenged and [removed](#). (January 2011) ([Learn how and when to remove this template message](#))

**Saigon** is a novel by [Anthony Grey](#). *Saigon* follows the lives of three families, one American, one French, and the other Vietnamese, from the [French colonial era](#) in the early 1920s until the last helicopter left [Saigon](#) at the end of the [Vietnam War](#).

Author	<a href="#">Anthony Grey</a>
Subject	<a href="#">Vietnam</a>
Genre	<a href="#">historical novel</a>
Publisher	Weidenfeld & Nicolson, Little, Brown

## Millwall F.C.–West Ham United F.C. rivalry

The rivalry between Millwall and West Ham United is one of the longest-standing and most bitter in English football. The two teams, then known as Millwall Athletic and Thames Ironworks, both originated in the East End of London, and were located under three miles apart. They first played each other in the 1899–1900 FA Cup. The match was historically known as the **Dockers derby**, as both sets of supporters were predominantly dockers at shipyards on either side of the River Thames. Consequently, each set of fans worked for rival firms who were competing for the same business; this intensified the tension between the teams. In 1910, Millwall moved south of the River Thames to New Cross and the teams were no longer East London neighbours. Both sides have relocated since, but remain just under four miles apart. Millwall moved to The Den in Bermondsey in 1993 and West Ham to the London Stadium in Stratford in 2016.



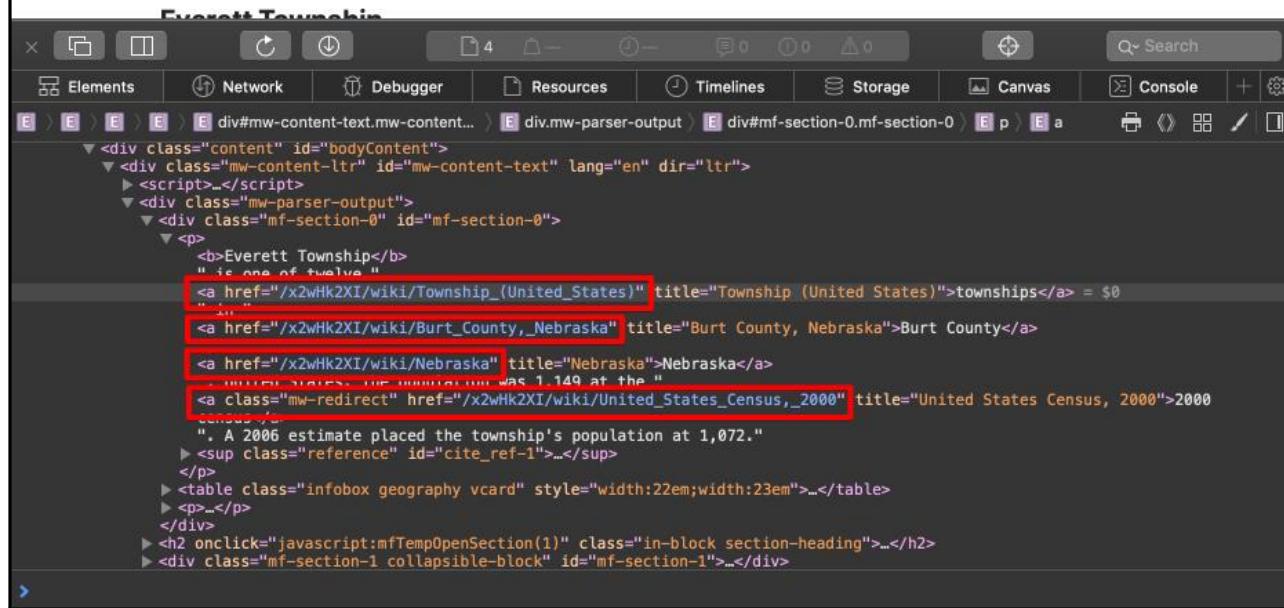
The last derby at Upton Park.

(4 February 2012)

<b>Locale</b>	London ( <a href="#">East</a> and <a href="#">South</a> )
<b>Teams</b>	<a href="#">Millwall</a> and <a href="#">West Ham United</a>

# Everett Township, Burt County, Nebraska

Everett Township is one of twelve [townships](#) in [Burt County, Nebraska](#), United States. The population was 1,149 at the [2000 census](#). A 2006 estimate placed the township's population at 1,072.<sup>[1]</sup>



localhost:8888/12720c4

## Go from *Battle of the Chernaya* to *Planet Simpson*

/wiki/Planet\_Simpson

Progress: 2 out of maximum 2 links in 2 steps

[Solution?](#) | [New game](#)

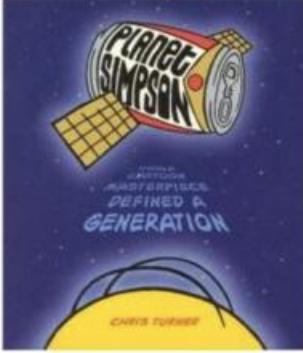
1. [Battle of the Chernaya](#)
2. [Catchphrase](#)
3. [Planet Simpson](#)

---

# You Won!

## Planet Simpson

**Planet Simpson: How a Cartoon Masterpiece Documented an Era and Defined a Generation**, also abbreviated to **Planet Simpson: How a Cartoon Masterpiece Defined a Generation**, is a non-fiction book about *The Simpsons*, written by [Chris Turner](#) and originally published on October 12, 2004 by [Random House](#).<sup>[1]</sup> The book is partly a memoir and an exploration of the impact *The Simpsons* has had on popular culture.



Cover of *Planet Simpson* (1st United States ed.)

**Author** [Chris Turner](#)  
**Country** Canada  
**Language** English

localhost:8888/7697171

## Go from *Colle di Brianza* to *Pyramidal peak* /wiki/Pyramidal\_peak

Progress: 2 out of maximum 2 links in 10 steps

[Solution?](#) | [New game](#)

1. [Colle di Brianza](#)
2. [Summit](#)
3. [Pyramidal peak](#)

---

## You Lost :(

## Pyramidal peak



The [Matterhorn](#), a classic example of a pyramidal peak.



*Coroa do Frade* (center right), a pyramid-shaped peak at the [Serra dos Órgãos National Park](#), in [Rio de Janeiro state](#), [Brazil](#).

A **pyramidal peak**, sometimes in its most extreme form called a **glacial horn**, is an angular, sharply pointed

Go from **Bar Harbor Airlines** to **Naval Air Station Brunswick**

Progress: **2** out of maximum **2** links in **2** steps

Bar Harbor Airlines

Trenton, Maine

Acadia National Park

Solution?

| New game

## Acadia National Park

Acadia National Park is an American [national park](#) located in the state of [Maine](#), southwest of [Bar Harbor](#). The park reserves most of [Mount Desert Island](#) and its associated smaller islands along the [coast of Maine](#). Initially designated [Sieur de Monts](#) National Monument by presidential proclamation in 1916,<sup>[3][4]</sup> the park was renamed and redesignated as [Lafayette](#) National Park in 1919.<sup>[5][6]</sup> The park was renamed Acadia National Park in 1929.<sup>[5]</sup>

# **Chapter 15: Implementing Recommender Systems with Julia**



■■■ movistar 09:12 100 % 🔋

< Games New Games We Love

 Trick Shot 2  
Infinite possibilities  
**\$2.99** In-App Purchases

 Never Stop Sneakin'  
Arcade  
**\$2.99**

 Ghost Pop!  
POP 'Til You Drop!  
**GET** In-App Purchases

 RIVAL: Crimson x Chaos  
Card  
**GET** In-App Purchases

 Blocky Snakes  
Puzzle  
**GET** In-App Purchases

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■■■ movistar 09:09 100 % 🔋

< Games New Games We Love

 **Ava Airborne**  
Defy gravity. With style.

**GET** In-App Purchases

 **CYBER:JUMP**  
Action

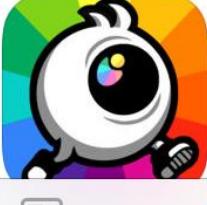
**GET**

 **Trick Shot 2**  
Infinite possibilities

**14,99 lei** In-App Purchases

 **Tetrun**  
Parkour & Freerun Mania

**GET** In-App Purchases

 **Colorblind - An Eye For An E...**  
Action

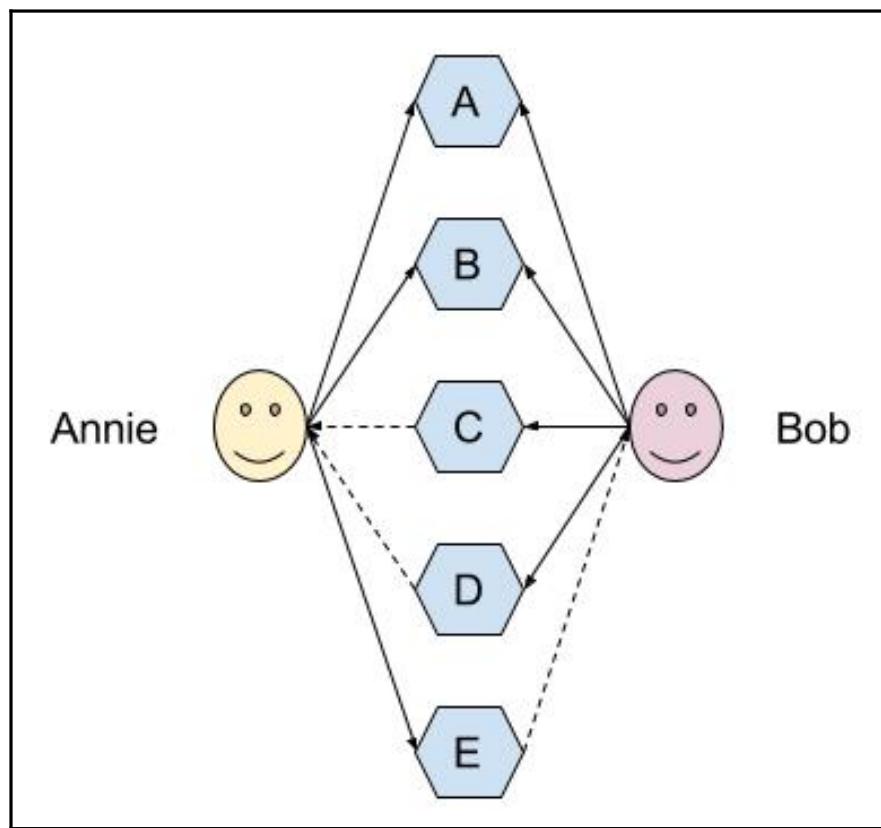
**GET** In-App Purchases

 Today  Games  Apps  Updates  Search

## Graphics Bundle

---

A	B	C	D	E	F	G	H	I
Movie title	Action	Animation	Comedy	Drama	Kids	Mystery	Musical	SF
2 Moonlight (2016)	0	0	0	1	0	0	0	0
3 Zootopia (2016)	1	1	1	0	0	0	0	0
4 Arrival (2016)	0	0	0	1	0	1	0	1
5 Hell or High Water (2016)	0	0	0	1	0	1	0	0
6 La La Land (2016)	0	0	1	1	0	0	1	0
7 The Jungle Book (2016)	1	0	0	0	1	0	0	0
8 Manchester by the Sea (2016)	0	0	0	1	0	0	0	0
9 Finding Dory (2016)	0	1	0	0	0	0	0	0
10 Captain America: Civil War (2016)	1	0	0	0	0	0	0	1
11 Moana (2016)	1	1	0	0	0	0	0	0



## Graphics Bundle

---

Movie title	Acton	Annie	Comey	Dean	Kit	Missie	Musk	Sam
<b>Moonlight (2016)</b>		3		10		9	2	
<b>Zootopia (2016)</b>	9	10	7		10		5	
<b>Arrival (2016)</b>	5		6	10		9		10
<b>Hell or High Water (2016)</b>	3		3	10		8		
<b>La La Land (2016)</b>	6		8	9			10	
<b>The Jungle Book (2016)</b>	8	7			2	9		6
<b>Manchester by the Sea (2016)</b>				2	8			
<b>Finding Dory (2016)</b>	7	8	5	4	10			
<b>Captain America: Civil War (2016)</b>	10		5	6				9
<b>Moana (2016)</b>	8	9			10		7	

11x9 Array{Any,2}:

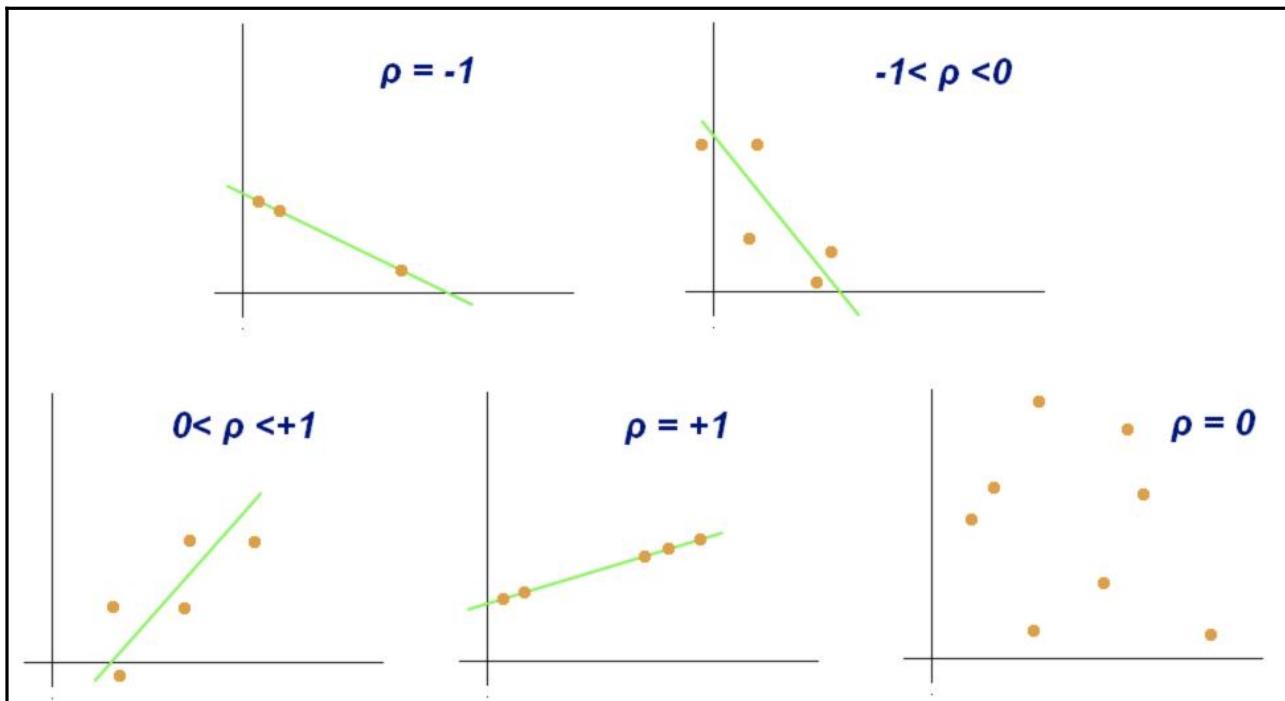
	"Acton"	"Annie"	...	"Dean"	"Kit"	"Missie"	"Musk"	"Sam"
"Movie title"								
"Moonlight (2016)"	""	3		10	""	9	2	""
"Zootopia (2016)"	9	10		""	10	""	5	""
"Arrival (2016)"	5	""		10	""	9	""	10
"Hell or High Water (2016)"	3	""		10	""	8	""	""
"La La Land (2016)"	6	""	...	9	""	""	10	""
"The Jungle Book (2016)"	8	7		2	9	""	6	""
"Manchester by the Sea (2016)"	""	""		8	""	""	""	""
"Finding Dory (2016)"	7	8		4	10	""	""	""
"Captain America: Civil War (2016)"	10	""		6	""	""	""	9
"Moana (2016)"	8	9	...	""	10	""	7	""

10x9 DataFrame									
Row	Movie title Union[Missing, String]	Acton Int64	Annie Int64	Comey Int64	Dean Int64	Kit Int64	Missie Int64	Musk Int64	Sam Int64
1	Moonlight (2016)	missing	3	missing	10	missing	9	2	missing
2	Zootopia (2016)	9	10	7	missing	10	missing	5	missing
3	Arrival (2016)	5	missing	6	10	missing	9	missing	10
4	Hell or High Water (2016)	3	missing	3	10	missing	8	missing	missing
5	La La Land (2016)	6	missing	8	9	missing	missing	10	missing
6	The Jungle Book (2016)	8	7	missing	2	9	missing	6	missing
7	Manchester by the Sea (2016)	missing	missing	2	8	missing	missing	missing	missing
8	Finding Dory (2016)	7	8	5	4	10	missing	missing	missing
9	Captain America: Civil War (2016)	10	missing	5	6	missing	missing	missing	9
10	Moana (2016)	8	9	missing	missing	10	missing	7	missing

## Graphics Bundle

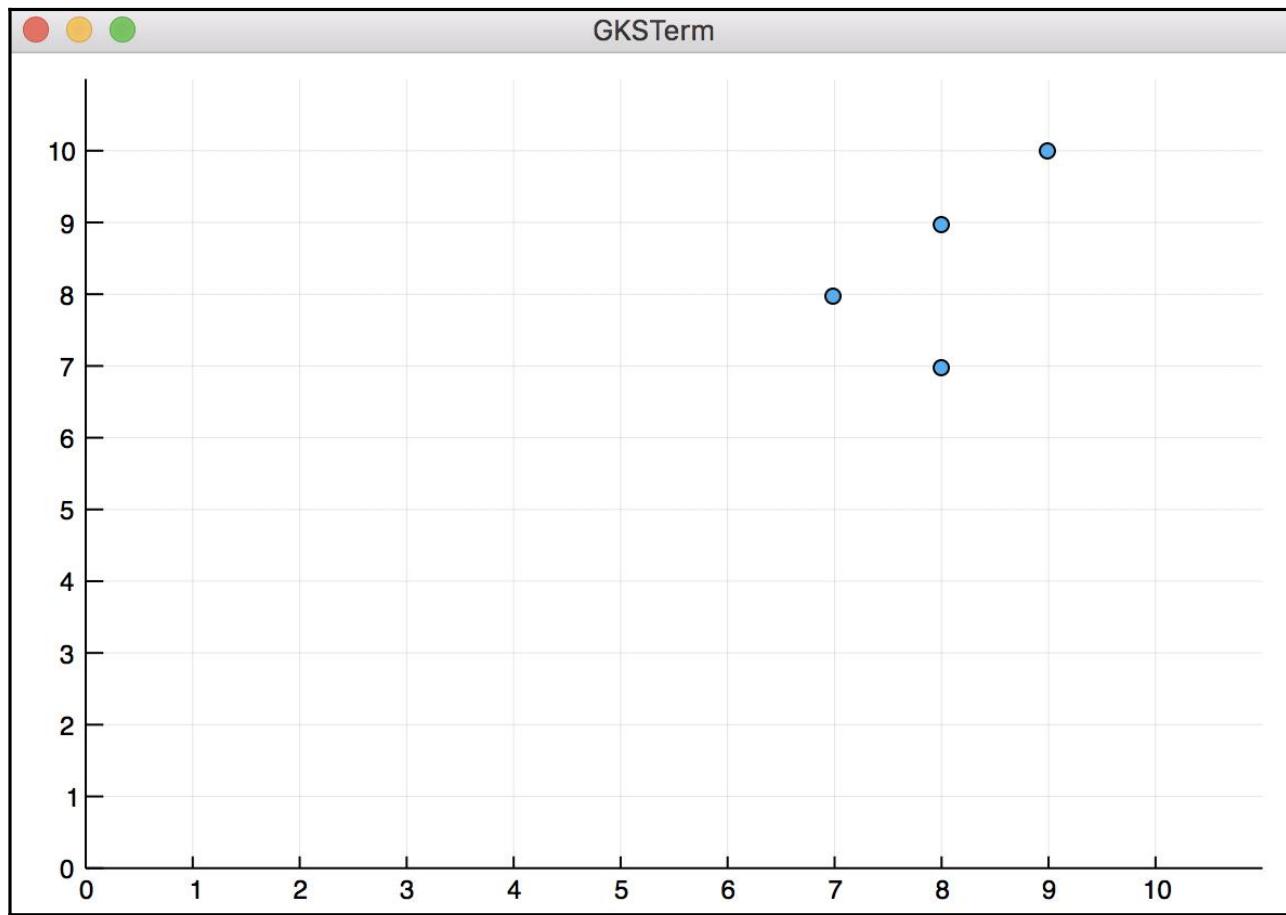
9x8 DataFrame									
Row	variable Symbol	mean Union...	min Any	median Union...	max Any	nunique Union...	nmissing Int64	eltype DataType	
1	Movie title		Arrival (2016)		Zootopia (2016)	10	0	String	
2	Acton	7.0	3	7.5	10		2	Int64	
3	Annie	7.4	3	8.0	10		5	Int64	
4	Comey	5.14286	2	5.0	8		3	Int64	
5	Dean	7.375	2	8.5	10		2	Int64	
6	Kit	9.75	9	10.0	10		6	Int64	
7	Missie	8.66667	8	9.0	9		7	Int64	
8	Musk	6.0	2	6.0	10		5	Int64	
9	Sam	9.5	9	9.5	10		8	Int64	

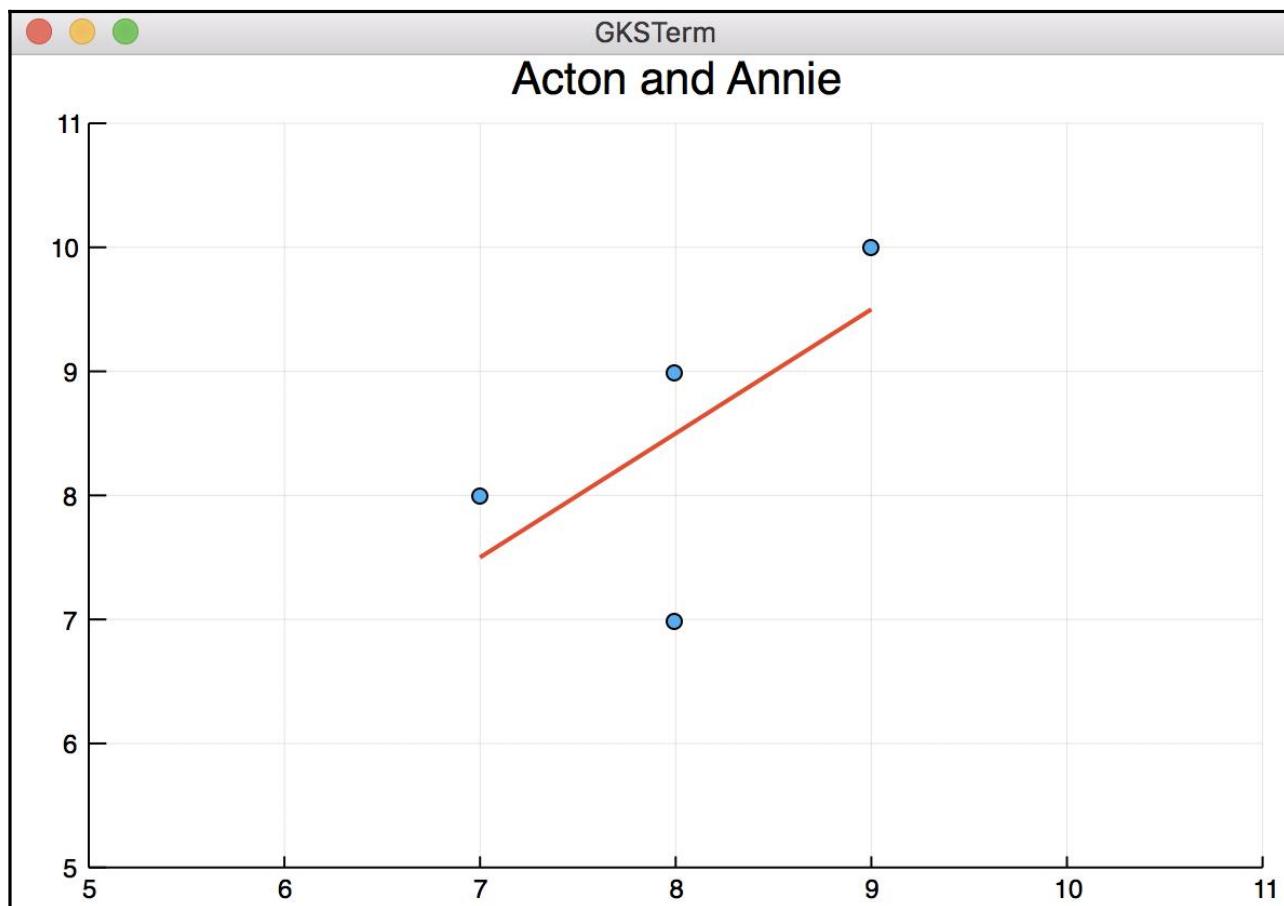
10x9 DataFrame										
Row	Movie title Union{Missing, String}	Acton Int64	Annie Int64	Comey Int64	Dean Int64	Kit Int64	Missie Int64	Musk Int64	Sam Int64	
1	Moonlight (2016)	0	3	0	10	0	9	2	0	
2	Zootopia (2016)	9	10	7	0	10	0	5	0	
3	Arrival (2016)	5	0	6	10	0	9	0	10	
4	Hell or High Water (2016)	3	0	3	10	0	8	0	0	
5	La La Land (2016)	6	0	8	9	0	0	10	0	
6	The Jungle Book (2016)	8	7	0	2	9	0	6	0	
7	Manchester by the Sea (2016)	0	0	2	8	0	0	0	0	
8	Finding Dory (2016)	7	8	5	4	10	0	0	0	
9	Captain America: Civil War (2016)	10	0	5	6	0	0	0	9	
10	Moana (2016)	8	9	0	0	10	0	7	0	



10×3 DataFrame			
Row	Movie title Union{Missing, String}	Action Int64	Annie Int64
1	Moonlight (2016)	0	3
2	Zootopia (2016)	9	10
3	Arrival (2016)	5	0
4	Hell or High Water (2016)	3	0
5	La La Land (2016)	6	0
6	The Jungle Book (2016)	8	7
7	Manchester by the Sea (2016)	0	0
8	Finding Dory (2016)	7	8
9	Captain America: Civil War (2016)	10	0
10	Moana (2016)	8	9

4×3 DataFrame			
Row	Movie title Union{Missing, String}	Action Int64	Annie Int64
1	Zootopia (2016)	9	10
2	The Jungle Book (2016)	8	7
3	Finding Dory (2016)	7	8
4	Moana (2016)	8	9



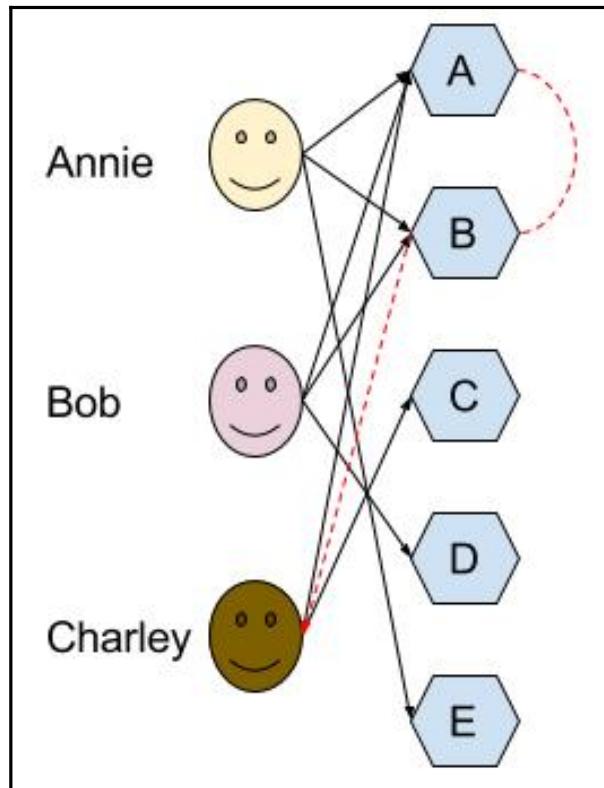


4x3 DataFrame

Row	Movie title Union{Missing, String}	Acton Int64	Annie Int64
1	Arrival (2016)	5	0
2	Hell or High Water (2016)	3	0
3	La La Land (2016)	6	0
4	Captain America: Civil War (2016)	10	0

1x3 DataFrame			
Row	Movie title Union{Missing, String}	Action Int64	Annie Int64
1	Captain America: Civil War (2016)	10	0

10x3 DataFrame			
Row	Movie title Union{Missing, String}	Dean Int64	Kit Int64
1	Moonlight (2016)	10	0
2	Zootopia (2016)	0	10
3	Arrival (2016)	10	0
4	Hell or High Water (2016)	10	0
5	La La Land (2016)	9	0
6	The Jungle Book (2016)	2	9
7	Manchester by the Sea (2016)	8	0
8	Finding Dory (2016)	4	10
9	Captain America: Civil War (2016)	6	0
10	Moana (2016)	0	10



Movie title	"Acton"	"Annie"	"Comey"	"Dean"	"Kit"	"Missie"	"Musk"	"Sam"
"Moonlight (2016)"	0	3	0	10	0	9	2	0
"Zootopia (2016)"	9	10	7	0	10	0	5	0
"Arrival (2016)"	5	0	6	10	0	9	0	10
"Hell or High Water (2016)"	3	0	3	10	0	8	0	0
"La La Land (2016)"	6	0	8	9	0	0	10	0
"The Jungle Book (2016)"	8	7	0	2	9	0	6	0
"Manchester by the Sea (2016)"	0	0	2	8	0	0	0	0
"Finding Dory (2016)"	7	8	5	4	10	0	0	0
"Captain America: Civil War (2016)"	10	0	5	6	0	0	0	9
"Moana (2016)"	8	9	0	0	10	0	7	0

Movie title	"Moonlight (2016)"	"Zootopia (2016)"	"Arrival (2016)"	...	"Moana (2016)"
"Acton"	0	9	5		8
"Annie"	3	10	0		9
"Comey"	0	7	6		0
"Dean"	10	0	10		0
"Kit"	0	10	0	...	10
"Missie"	9	0	9		0
"Musk"	2	5	0		7
"Sam"	0	0	10		0

## Graphics Bundle

---

9x11 DataFrame					
Row	x1 Any	x2 Any	x3 Any	x4 Any	x5 Any
1	Movie title	Moonlight (2016)	Zootopia (2016)	Arrival (2016)	Hell or High Water (2016)
2	Acton	0	9	5	3
3	Annie	3	10	0	0
4	Comey	0	7	6	3
5	Dean	10	0	10	10
6	Kit	0	10	0	0
7	Missie	9	0	9	8
8	Musk	2	5	0	0
9	Sam	0	0	10	0

Row	x6 Any	x7 Any	x8 Any
1	La La Land (2016)	The Jungle Book (2016)	Manchester by the Sea (2016)
2	6	8	0
3	0	7	0
4	8	0	2
5	9	2	8
6	0	9	0
7	0	0	0
8	10	6	0
9	0	0	0

Row	x9 Any	x10 Any	x11 Any
1	Finding Dory (2016)	Captain America: Civil War (2016)	Moana (2016)
2	7	10	8
3	8	0	9
4	5	5	0
5	4	6	0
6	10	0	10
7	0	0	0
8	0	0	7
9	0	9	0

## Graphics Bundle

---

9x11 DataFrame					
Row	Movie title Any	Moonlight (2016) Any	Zootopia (2016) Any	Arrival (2016) Any	Hell or High Water (2016) Any
1	Movie title	Moonlight (2016)	Zootopia (2016)	Arrival (2016)	Hell or High Water (2016)
2	Acton	0	9	5	3
3	Annie	3	10	0	0
4	Comey	0	7	6	3
5	Dean	10	0	10	10
6	Kit	0	10	0	0
7	Missie	9	0	9	8
8	Musk	2	5	0	0
9	Sam	0	0	10	0
Row	La La Land (2016) Any	The Jungle Book (2016) Any	Manchester by the Sea (2016) Any		
1	La La Land (2016)	The Jungle Book (2016)	Manchester by the Sea (2016)		
2	6	8	0		
3	0	7	0		
4	8	0	2		
5	9	2	8		
6	0	9	0		
7	0	0	0		
8	10	6	0		
9	0	0	0		
Row	Finding Dory (2016) Any	Captain America: Civil War (2016) Any	Moana (2016) Any		
1	Finding Dory (2016)	Captain America: Civil War (2016)	Moana (2016)		
2	7	10	8		
3	8	0	9		
4	5	5	0		
5	4	6	0		
6	10	0	10		
7	0	0	0		
8	0	0	7		
9	0	9	0		

## Graphics Bundle

---

8x11 DataFrame					
Row	User Any	Moonlight (2016) Any	Zootopia (2016) Any	Arrival (2016) Any	Hell or High Water (2016) Any
1	Acton	0	9	5	3
2	Annie	3	10	0	0
3	Comey	0	7	6	3
4	Dean	10	0	10	10
5	Kit	0	10	0	0
6	Missie	9	0	9	8
7	Musk	2	5	0	0
8	Sam	0	0	10	0

Row	La La Land (2016) Any	The Jungle Book (2016) Any	Manchester by the Sea (2016) Any
1	6	8	0
2	0	7	0
3	8	0	2
4	9	2	8
5	0	9	0
6	0	0	0
7	10	6	0
8	0	0	0

Row	Finding Dory (2016) Any	Captain America: Civil War (2016) Any	Moana (2016) Any
1	7	10	8
2	8	0	9
3	5	5	0
4	4	6	0
5	10	0	10
6	0	0	0
7	0	0	7
8	0	9	0

# Chapter 16: Machine Learning for Recommender Systems

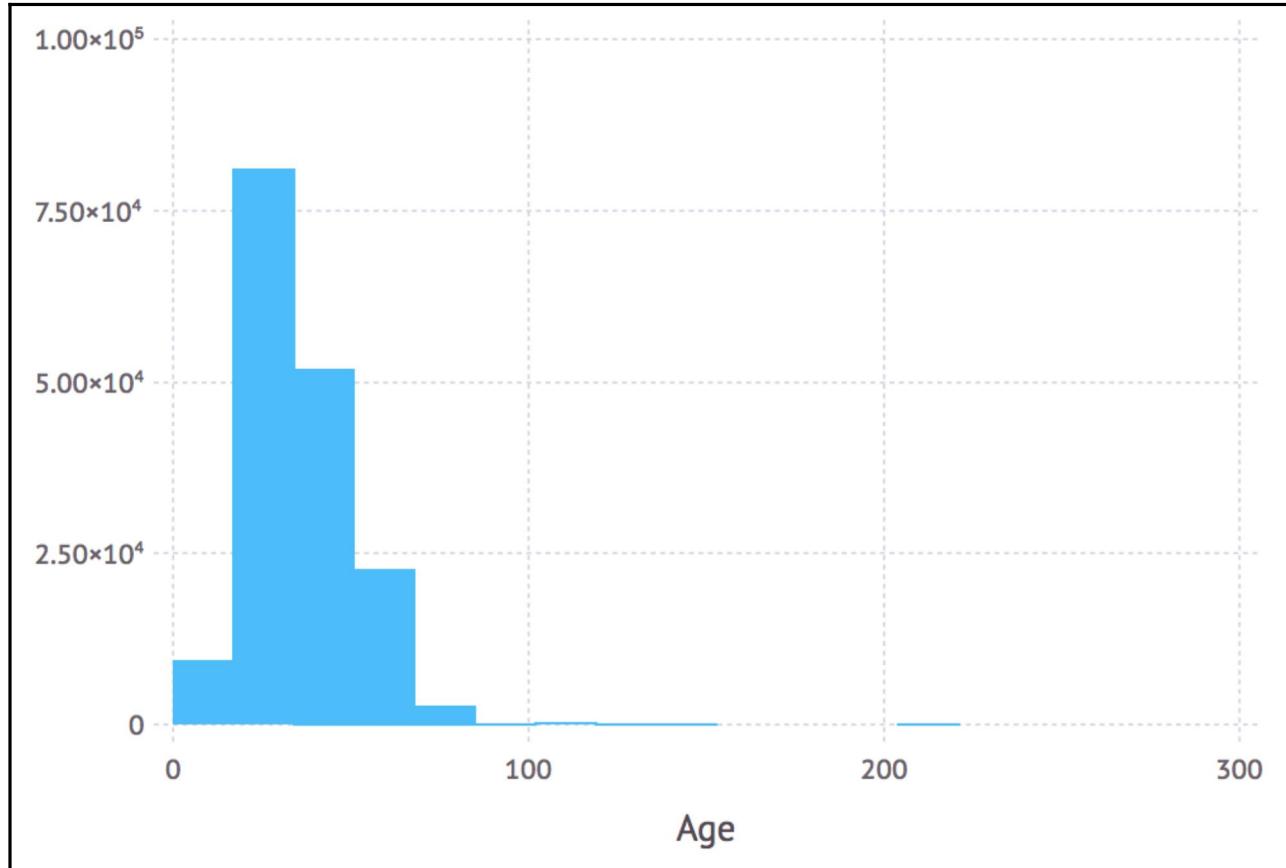
```
"User-ID";"Location";"Age"→
"1";"nyc, new york, usa";NULL→
"2";"stockton, california, usa";"18"→
"3";"moscow, yukon territory, russia";NULL→
"4";"porto, v.n.gaia, portugal";"17"→
"5";"farnborough, hants, united kingdom";NULL→
"6";"santa monica, california, usa";"61"→
```

278858×3 DataFrame			
Row	User-ID	Location	Age
	Int64	Union{Missing, String}	Int64
1	1	nyc, new york, usa	missing
2	2	stockton, california, usa	18
3	3	moscow, yukon territory, russia	missing
4	4	porto, v.n.gaia, portugal	17
5	5	farnborough, hants, united kingdom	missing
6	6	santa monica, california, usa	61

3×6 DataFrame						
Row	variable	min	max	nmissing	nunique	eltype
	Symbol	Any	Any	Int64	Union...	DataType
1	User-ID	1	278858	0	57339	Int64
2	Location	"alexandria"., "alexandria"., egypt	\xfd\fd\fd\fd\fd\fd	0	110762	String
3	Age	0	244	110762	Int64	Int64

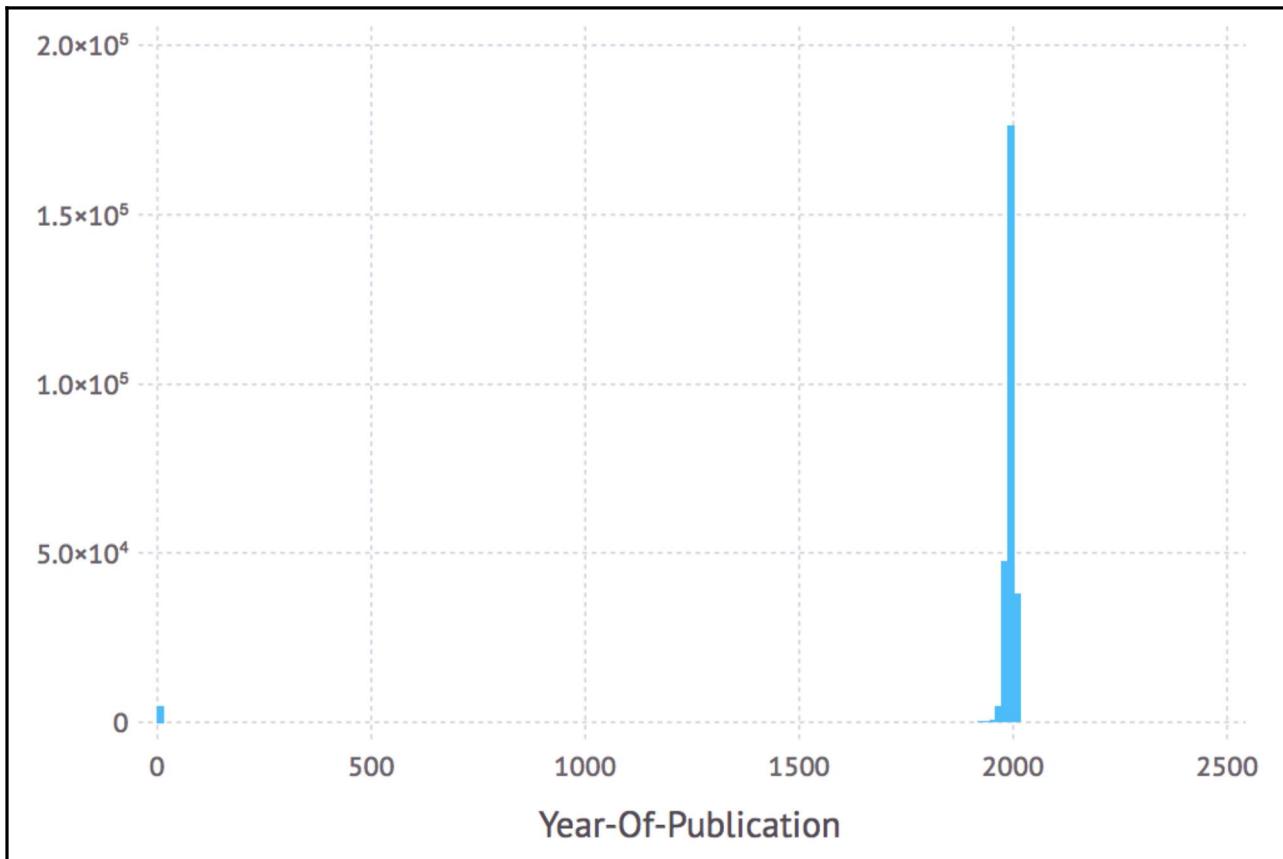
## Graphics Bundle

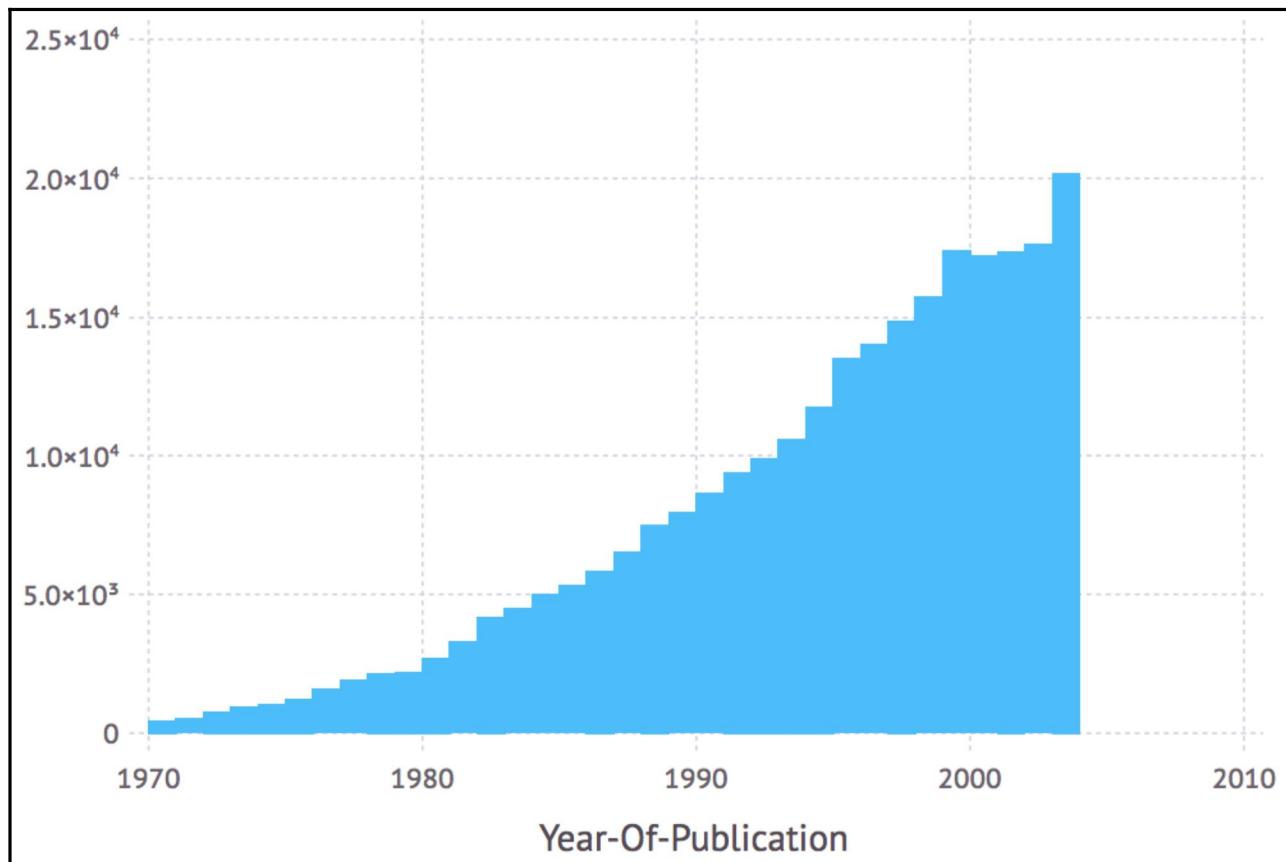
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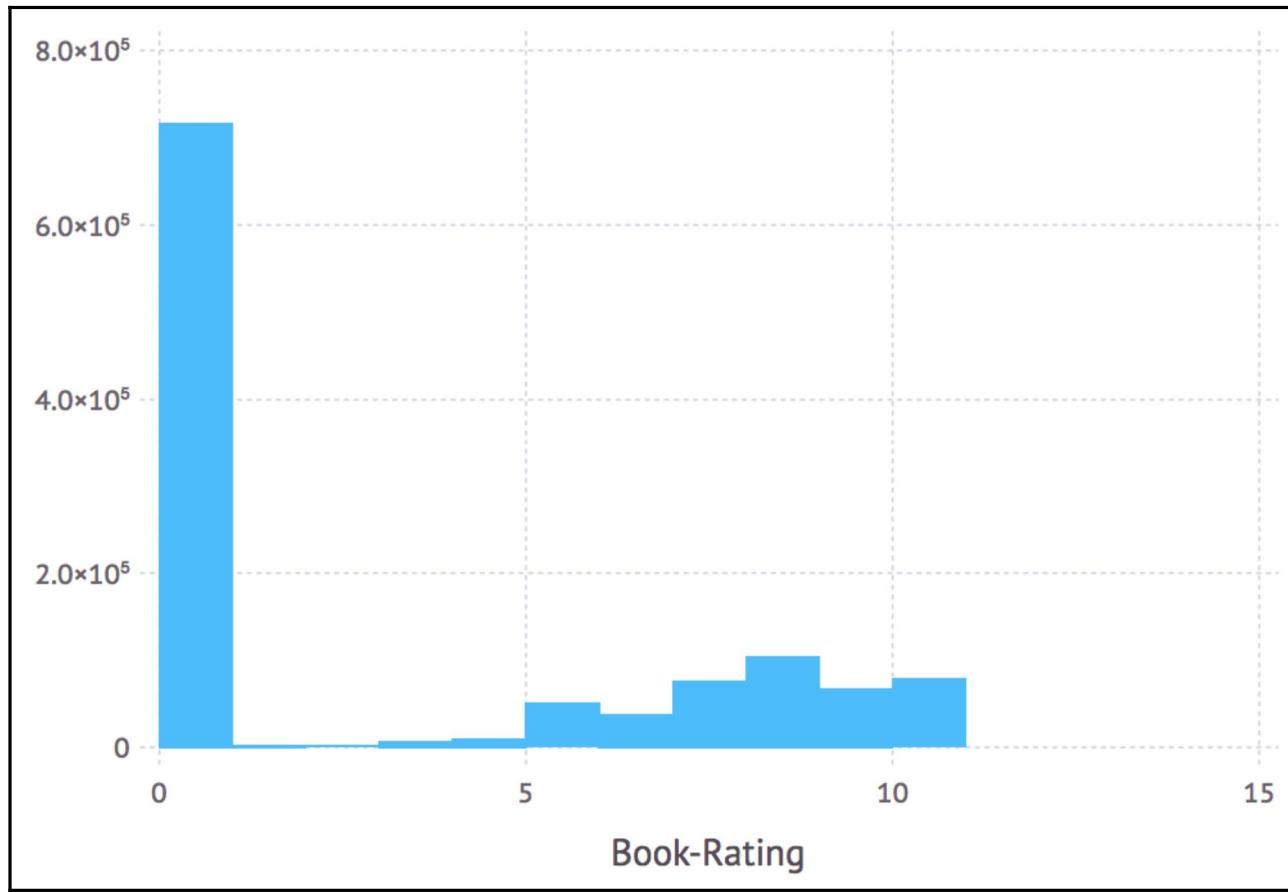


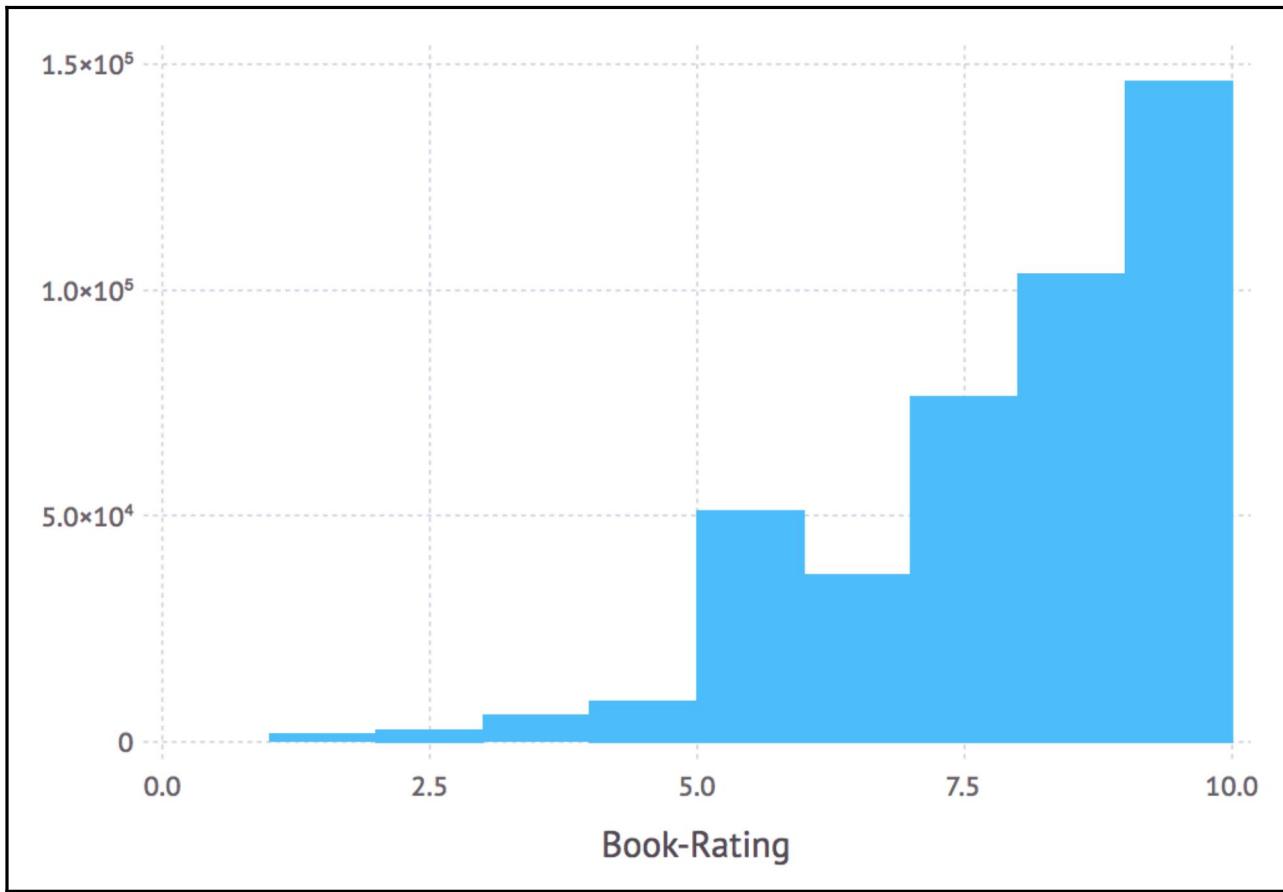
6×3 DataFrame				
Row	User-ID	Location	Age	
	Int64	Union{Missing, String}	Real	
1	1	nyc, new york, usa	34.7514	
2	2	stockton, california, usa	18	
3	3	moscow, yukon territory, russia	34.7514	
4	4	porto, v.n.gaia, portugal	17	
5	5	farnborough, hants, united kingdom	34.7514	
6	6	santa monica, california, usa	61	

8x4 DataFrame				
Row	variable Symbol	nmissing Int64	nunique Union...	eltype DataType
1	ISBN	0	271379	String
2	Book-Title	0	242154	String
3	Book-Author	0	102028	String
4	Year-Of-Publication	0		Int64
5	Publisher	0	16807	String
6	Image-URL-S	0	271063	String
7	Image-URL-M	0	271063	String
8	Image-URL-L	0	271063	String







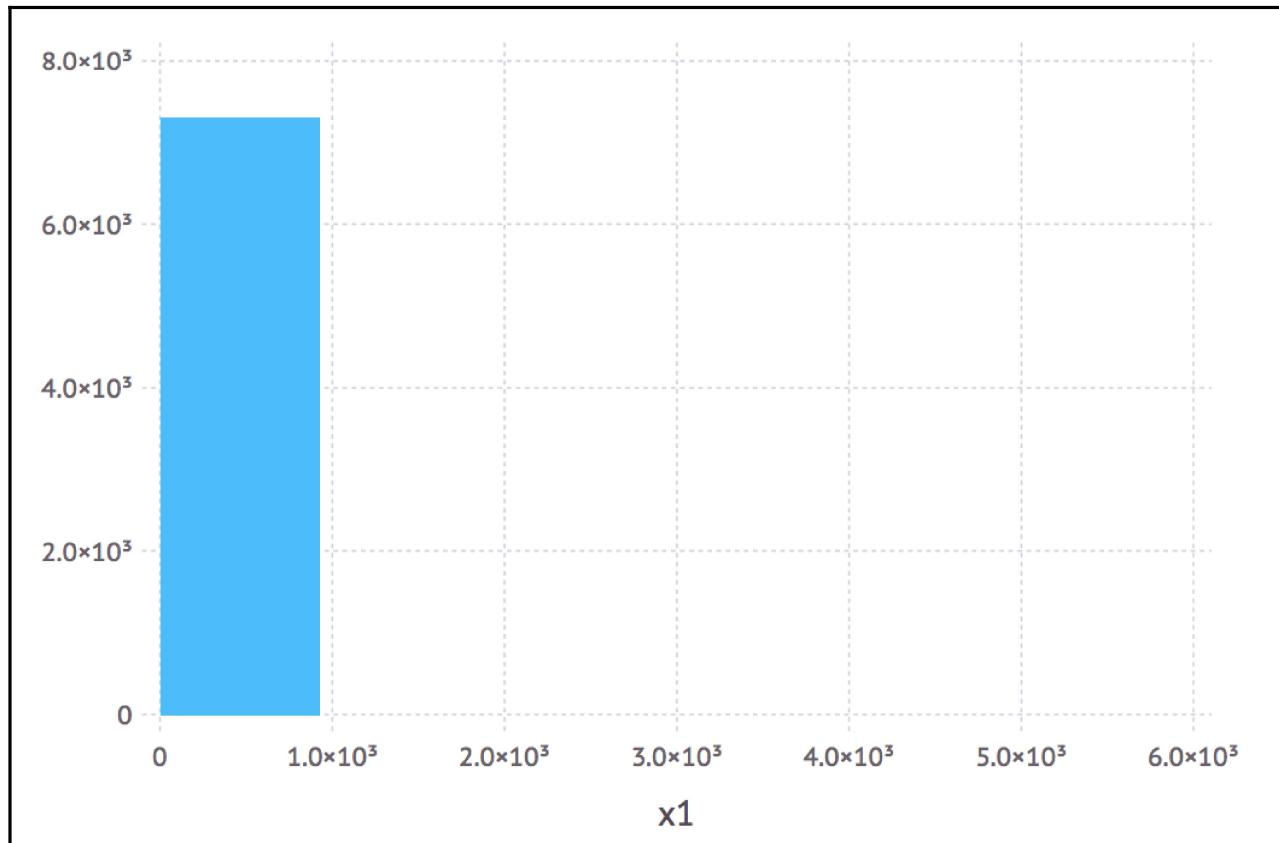


46106×2 DataFrame

Row	UserID Int64	x1 Int64
1	276747	3
2	276751	1
3	276754	1
4	276762	1
5	276772	2
6	276774	1

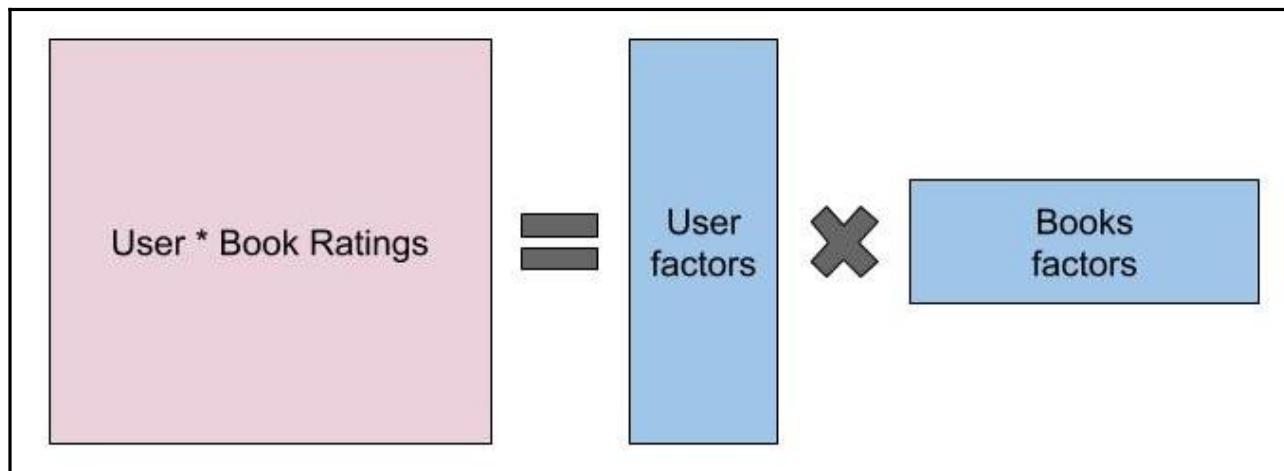
2×8 DataFrame

Row	variable Symbol	mean Float64	min Int64	median Float64	max Int64	nunique Nothing	nmissing Union...	eltype DataType
1	UserID	1.39098e5	12	1.38387e5	278854		0	Int64
2	x1	4.72804	1	1.0	5491			Int64



3x2 DataFrame

Row	UserID	x1
	Int64	Int64
1	11676	3639
2	98391	5491
3	153662	1579



Row	UserID Int64	ISBN String	Rating Int64
1	277427	0060006641	10
2	277427	0441627404	10
3	277427	0446600415	10
4	277427	0671727079	9
5	277427	0671740504	8
6	277427	0671749897	8
7	277427	0836218817	10
8	277427	0842370668	10

```
for img in thumbs[ :, :Thumb ]
    HTML(" """<img src=\"$({img})">""") |> display
end
```

