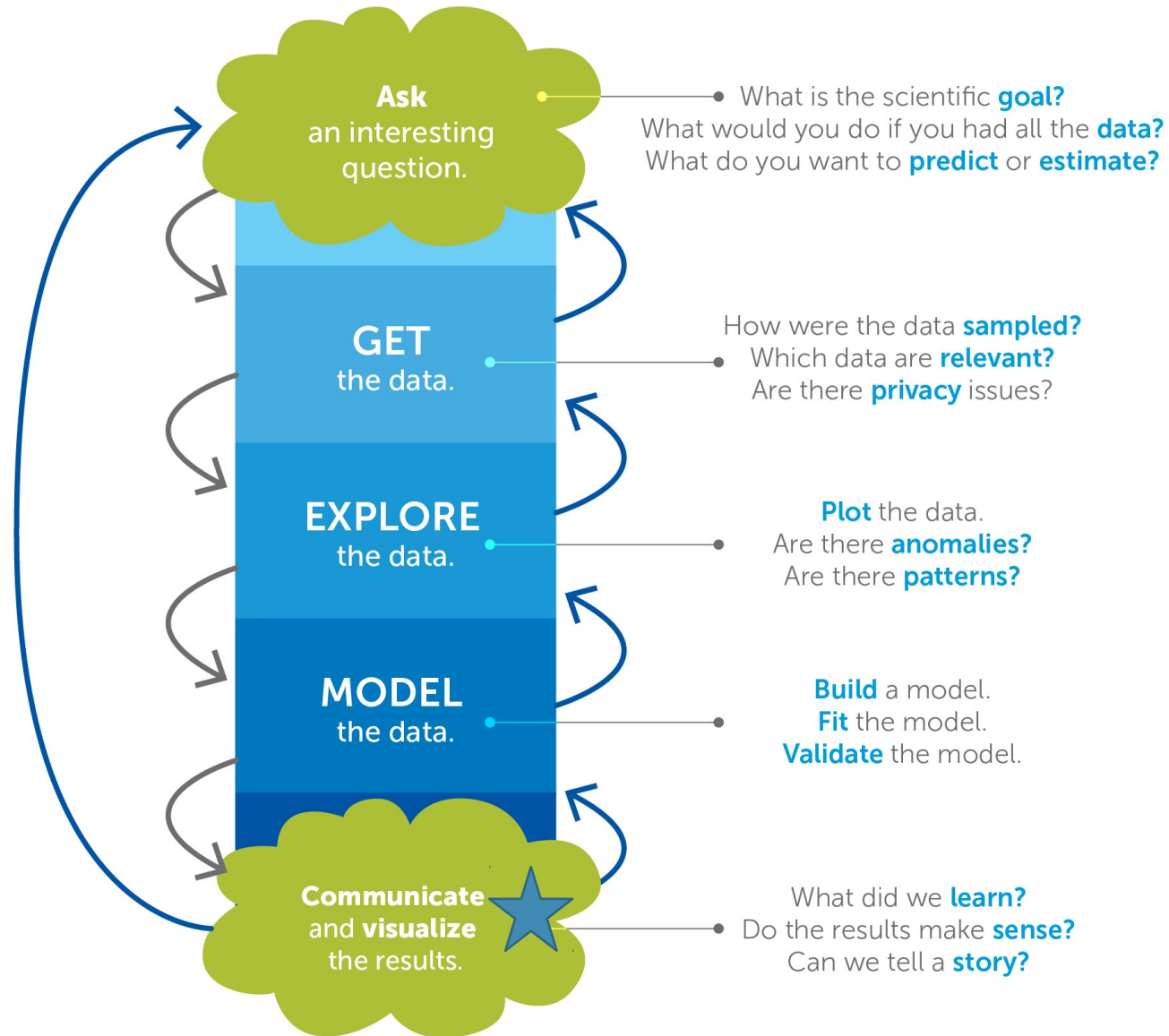


VISUALIZACIÓN DE DATOS EN D3 Y JQPLOT2

ANGELA DEVIA
ING.ANGELA.DEVIA@GMAIL.COM

Data Science Process



VISUALIZACIÓN DE DATOS

Fuente:

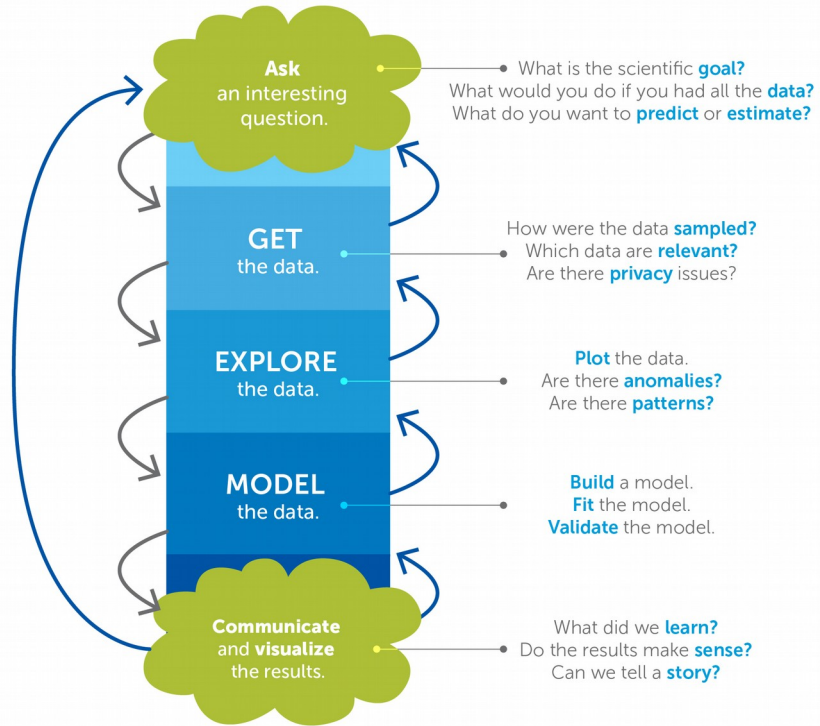
<https://www.class-central.com/report/best-intro-data-science-courses/>


PREGUNTA INTERESANTE

- Ejemplo:

- ¿En qué me he estado gastando el dinero y cómo puedo ahorrarlo?

The Data Science Process



 Derived from the work of Joe Blitzstein and Hanspeter Pfister, originally created for the Harvard data science course <http://cs109.org/>.

VISUALIZACIÓN DE DATOS

1. Facilita el análisis de la información

Fuente:

<https://www.class-central.com/report/best-intro-data-science-courses/>

Sample Data Table

TRANSACTION TYPE	DATE	CATEGORY	AMOUNT
Expenses	12/1/2015	Housing	\$1,700.00
Expenses	12/1/2015	Grocery	\$356.89
Expenses	12/1/2015	Car payment	\$345.00
Expenses	12/1/2015	Insurance	\$122.30
Expenses	12/1/2015	Home phone	\$54.06
Expenses	12/1/2015	Cell phone	\$88.29
Expenses	12/1/2015	Cable TV	\$73.01
Expenses	12/1/2015	Internet	\$48.56
Expenses	12/1/2015	Electricity	\$248.40
Expenses	12/1/2015	Water	\$43.16
Expenses	12/1/2015	Gas	\$57.32
Expenses	12/1/2015	Entertainment	\$139.24
Expenses	12/1/2015	Tuition	\$680.00
Expenses	12/1/2015	Savings	\$224.72
Income	12/1/2015	Income1	\$5,091.39
Income	12/1/2015	Income2	\$286.42
Income	12/1/2015	Other	\$598.72
Expenses	11/1/2015	Housing	\$1,700.00
Expenses	11/1/2015	Grocery	\$370.87
Expenses	11/1/2015	Car payment	\$345.00
Expenses	11/1/2015	Insurance	\$123.12
Expenses	11/1/2015	Home phone	\$51.50
Expenses	11/1/2015	Cell phone	\$67.49
Expenses	11/1/2015	Cable TV	\$62.36

TRY IT

This table includes sample data you can use to practice updating the cashflow chart.

Let's include a row to show that you received a \$1500 bonus in April.

Add a new sample row

OBTENIENDO LOS DATOS

Después de tener los datos...

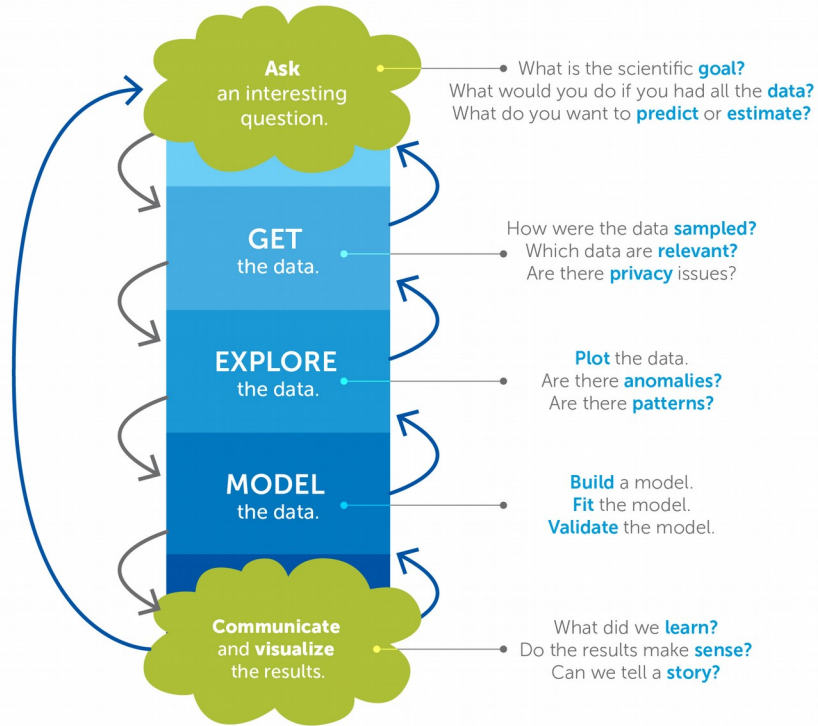
¿Está toda la información necesaria?

¿Cómo los analizamos?

Fuente:

<https://support.office.com/en-us/article/Learn-how-to-use-the-My-Cashflow-template-with-Excel-2016-215e9e2e-5813-41ad-a9ef-a0c0874841bb?ui=en-US&rs=en-001&ad=US>

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VISUALIZACIÓN DE DATOS

1. Facilita el análisis de la información

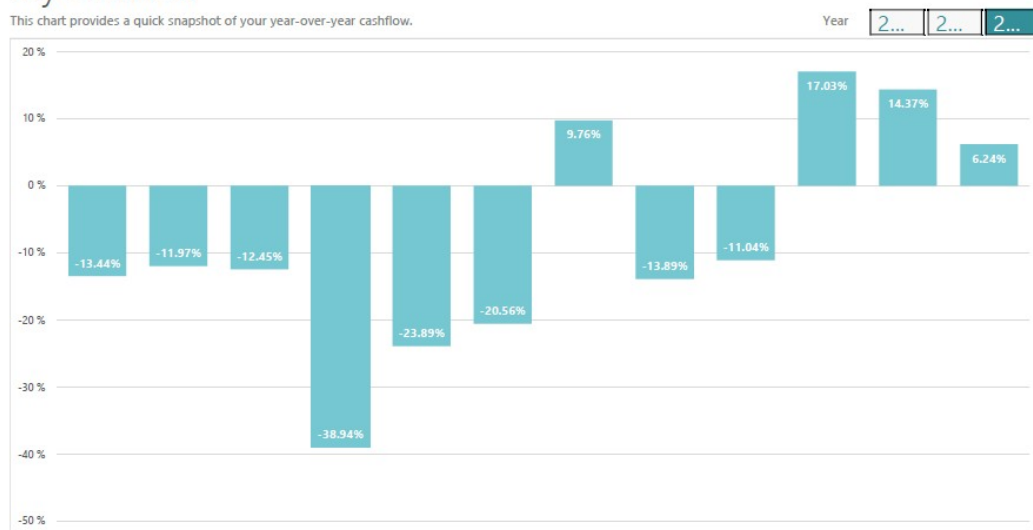
2. Arte + Ciencia

Fuente:

<https://www.class-central.com/report/best-intro-data-science-courses/>

My Cashflow

This chart provides a quick snapshot of your year-over-year cashflow.



VIEW YOUR CASHFLOW BY YEAR

Tap on each year to see your annual cashflow year-over-year.

(Year-over-year compares the results of the selected time period with the same time period as the previous years.)

[Click here to learn more](#)

[Tell us what you think](#)

NEXT, TRY ADDING SAMPLE DATA

[Go >](#)

Values	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Selected Year	\$1,121	\$1,636	\$878	\$853	\$1,194	\$829	\$1,087	\$1,139	\$1,404	\$1,349	\$1,433	\$1,796
Previous Year	\$1,295	\$1,858	\$1,002	\$1,396	\$1,569	\$1,043	\$990	\$1,323	\$1,578	\$1,152	\$1,253	\$1,690
Year-over-year	-13.44 %	-11.97 %	-12.45 %	-38.94 %	-23.89 %	-20.56 %	9.76 %	-13.89 %	-11.04 %	17.03 %	14.37 %	6.24 %

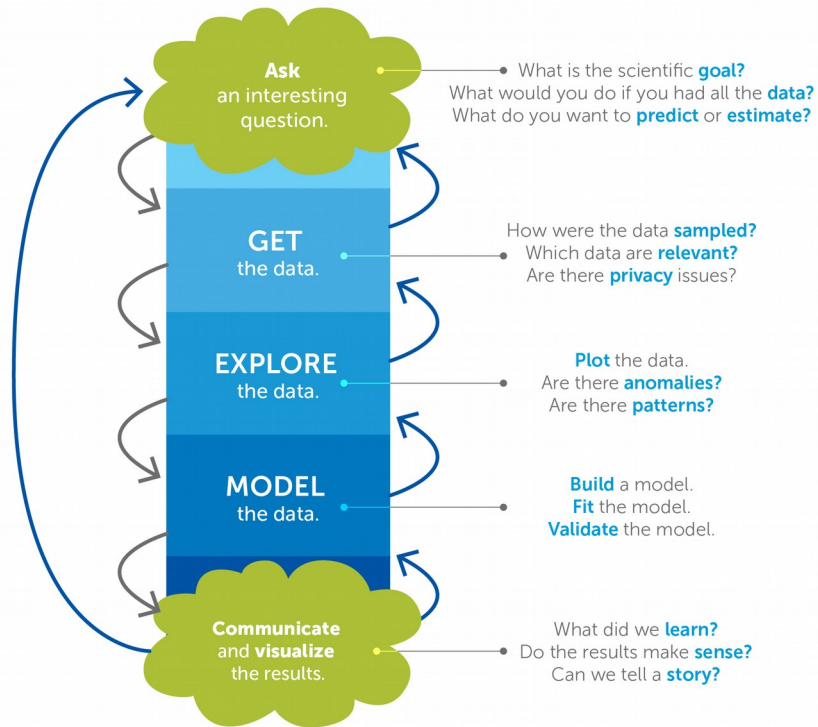
EXPLORANDO LOS DATOS


Y este gráfico, ¿resuelve mi pregunta?

Fuente:

<https://support.office.com/en-us/article/Learn-how-to-use-the-My-Cashflow-template-with-Excel-2016-215e9e2e-5813-41ad-a9ef-a0c0874841bb?ui=en-US&rs=en-001&ad=US>

The Data Science Process



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VISUALIZACIÓN DE DATOS

1. Facilita el análisis de la información
2. Arte + Ciencia
3. Agrega valor e identifica elementos de interés

Fuente:

<https://www.class-central.com/report/best-intro-data-science-courses/>

Table Tools							
Power Pivot for Excel - Cashflow analysis1							
File Home Design Advanced Linked Table							
[CATEGORÍA] Entertainment							
TRANSACTION TYPE	CAT...	AMOUNT	DATE (Year)	DATE (Quarter)	DATE (Mo...)	DATE (Month)	Add Column
1 Expenses	12/... Housing	1700	2015	Qtr4		12 Dec	
2 Expenses	12/... Grocery	356.8878	2015	Qtr4		12 Dec	
3 Expenses	12/... Car pay...	345	2015	Qtr4		12 Dec	
4 Expenses	12/... Insura...	122.304	2015	Qtr4		12 Dec	
5 Expenses	12/... Home ...	54.06	2015	Qtr4		12 Dec	
6 Expenses	12/... Cell ph...	88.29	2015	Qtr4		12 Dec	
7 Expenses	12/... Cable TV	73.008	2015	Qtr4		12 Dec	
8 Expenses	12/... Internet	48.5595	2015	Qtr4		12 Dec	
9 Expenses	12/... Electricity	248.4	2015	Qtr4		12 Dec	
10 Expenses	12/... Water	43.164	2015	Qtr4		12 Dec	
11 Expenses	12/... Gas	57.3248	2015	Qtr4		12 Dec	
12 Expenses	12/... Enterta...	139.2435	2015	Qtr4		12 Dec	
13 Expenses	12/... Tuition	680	2015	Qtr4		12 Dec	
14 Expenses	12/... Savings	224.72	2015	Qtr4		12 Dec	
15 Income	12/... Income1	5091.39	2015	Qtr4		12 Dec	
16 Income	12/... Income2	286.416	2015	Qtr4		12 Dec	
17 Income	12/... Other	598.7185	2015	Qtr4		12 Dec	
18 Expenses	11/... Housing	1700	2015	Qtr4		11 Nov	
19 Expenses	11/... Grocery	370.872	2015	Qtr4		11 Nov	
20 Expenses	11/... Car pay...	345	2015	Qtr4		11 Nov	
Total Cashflow: \$47,148							
TotalExpenses: (\$138,638)							
TotalIncome: \$185,786							
PreviousYearCashflow: \$32,431							
YearOverYear: 45 %							
Sample Calendar							
Record: " 12 of 612 "							

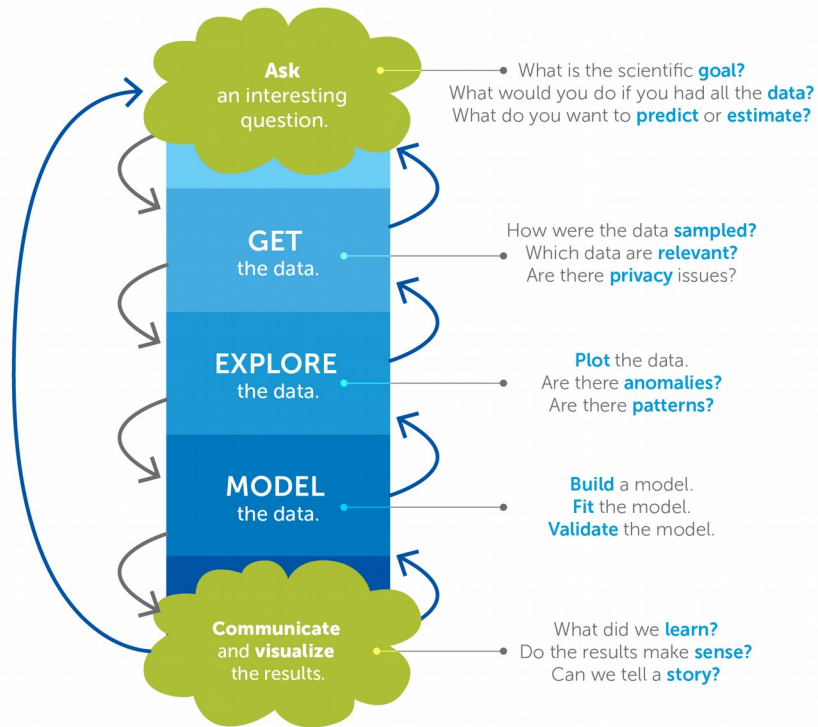
CONSTRUYENDO EL MODELO


¿Qué información puedo obtener de un análisis de mi información mediante un modelo?

Fuente:

<https://support.office.com/en-us/article/Learn-how-to-use-the-My-Cashflow-template-with-Excel-2016-215e9e2e-5813-41ad-a9ef-a0c0874841bb?ui=en-US&rs=en-001&ad=US>

The Data Science Process



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VISUALIZACIÓN DE DATOS

1. Facilita el análisis de la información
2. Arte + Ciencia
3. Agrega valor e identifica elementos de interés
4. Elegir formas de contextualizar y lograr mayor entendimiento de la información (KISS)

Fuente:

<https://www.class-central.com/report/best-intro-data-science-courses/>

Budget Overview

Balance

Projected Balance	(Projected minus expenses)	\$1,585
Actual Balance	(Actual minus expenses)	\$1,740
Difference	(Actual minus projected)	\$155

Income

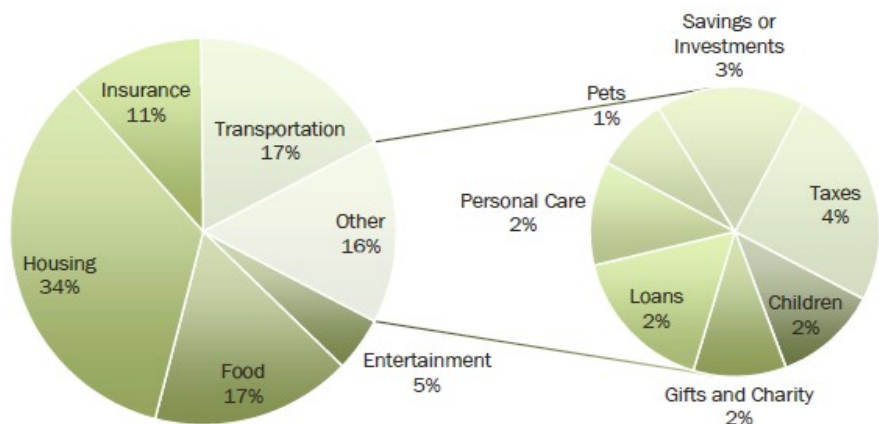
ACTUAL	Income 1	\$5,800
	Income 2	\$2,300
	Extra income	\$1,500
	Total income	\$9,600

PROJECTED	Income 1	\$6,000
	Income 2	\$1,000
	Extra income	\$2,500
	Total income	\$9,500

Expenses

ACTUAL \$7,860

PROJECTED \$7,915



VISUALIZANDO LA INFORMACIÓN

¿El gráfico y el reporte me permiten resolver mi pregunta?

¿Me ayuda a detectar errores / confirmar hipótesis?

¿Qué historia puedo contar a partir de esta visualización?

Fuente:

<https://support.office.com/en-us/article/Learn-how-to-use-the-My-Cashflow-template-with-Excel-2016-215e9e2e-5813-41ad-a9ef-a0c0874841bb?ui=en-US&rs=en-001&ad=US>

A decorative wavy blue line runs vertically along the left side of the slide, starting from the top and extending to the bottom. It has a light blue outline and a darker blue fill.

TIPOS DE GRÁFICOS

¿ESTAS UTILIZANDO UN GRÁFICO QUE
RESUELVA LA PREGUNTA DE INTERÉS?



TIPOS DE GRÁFICOS

Distribución

Relación

Evolución

Comparación

Composición

Geográficos o de geografía

Fuente:

<https://carolinacristanchi.com/>

A decorative wavy blue line runs vertically along the left side of the image, starting from the top and extending to the bottom. It has a light blue outline and a darker blue fill.

D3.js

LIBRERÍA DE JAVASCRIPT

¿Cómo se utiliza D3.js?

- Es una librería que se incluye en el Código Fuente de la página web:

```
<script src="http://d3js.org/  
d3.v3.min.js" charset="utf-  
8"></script>
```

GLOSARIO

CSS - *Cascading Style Sheets*: Describe cómo los elementos HTML son mostrados en pantalla, papel u otro medio.

DOM - *Documentary Object Model*: Interfaz que representa un documento como un árbol.

HTML - *Hypertext Markup Language*: Es el estándar de etiquetas para crear páginas y aplicaciones web.

JS - *JavaScript*: Lenguaje de programación de alto nivel para la web.

PARA COMENZAR

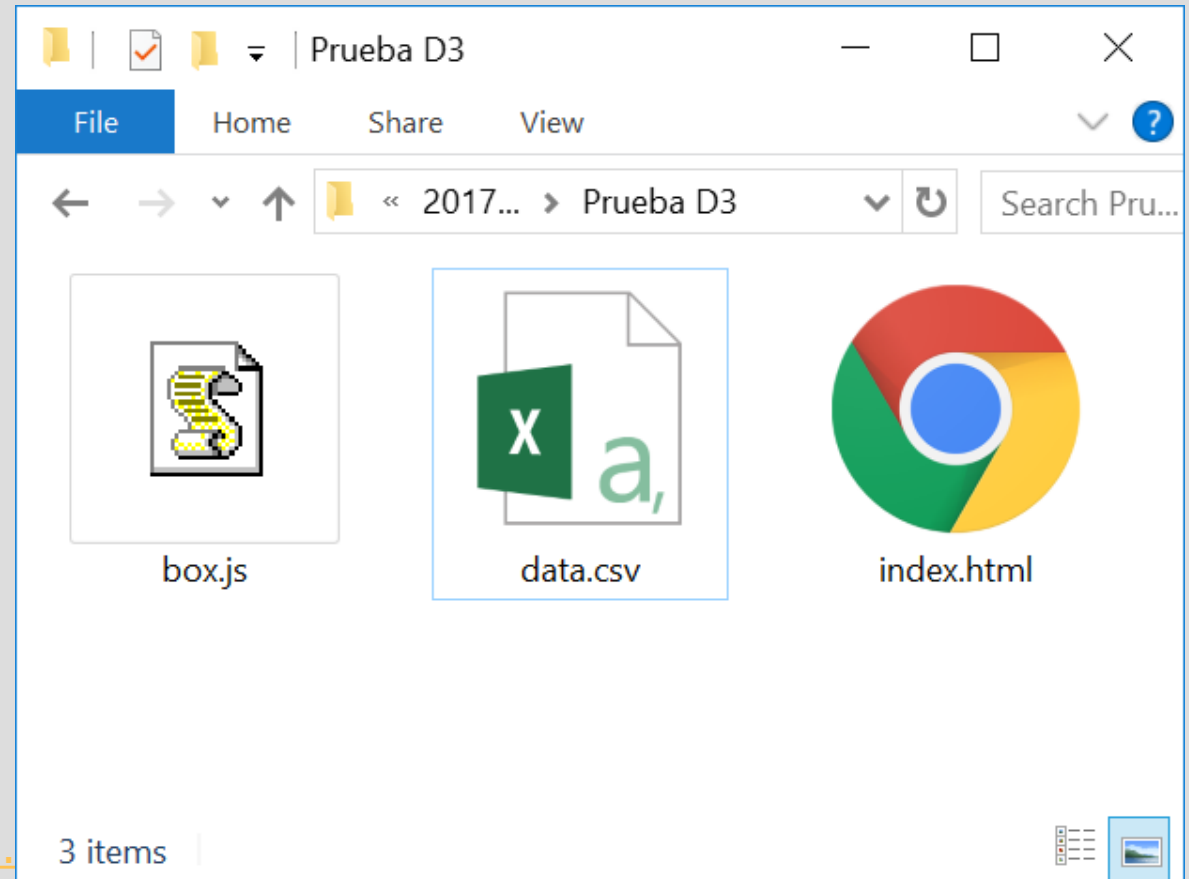
- Editores:

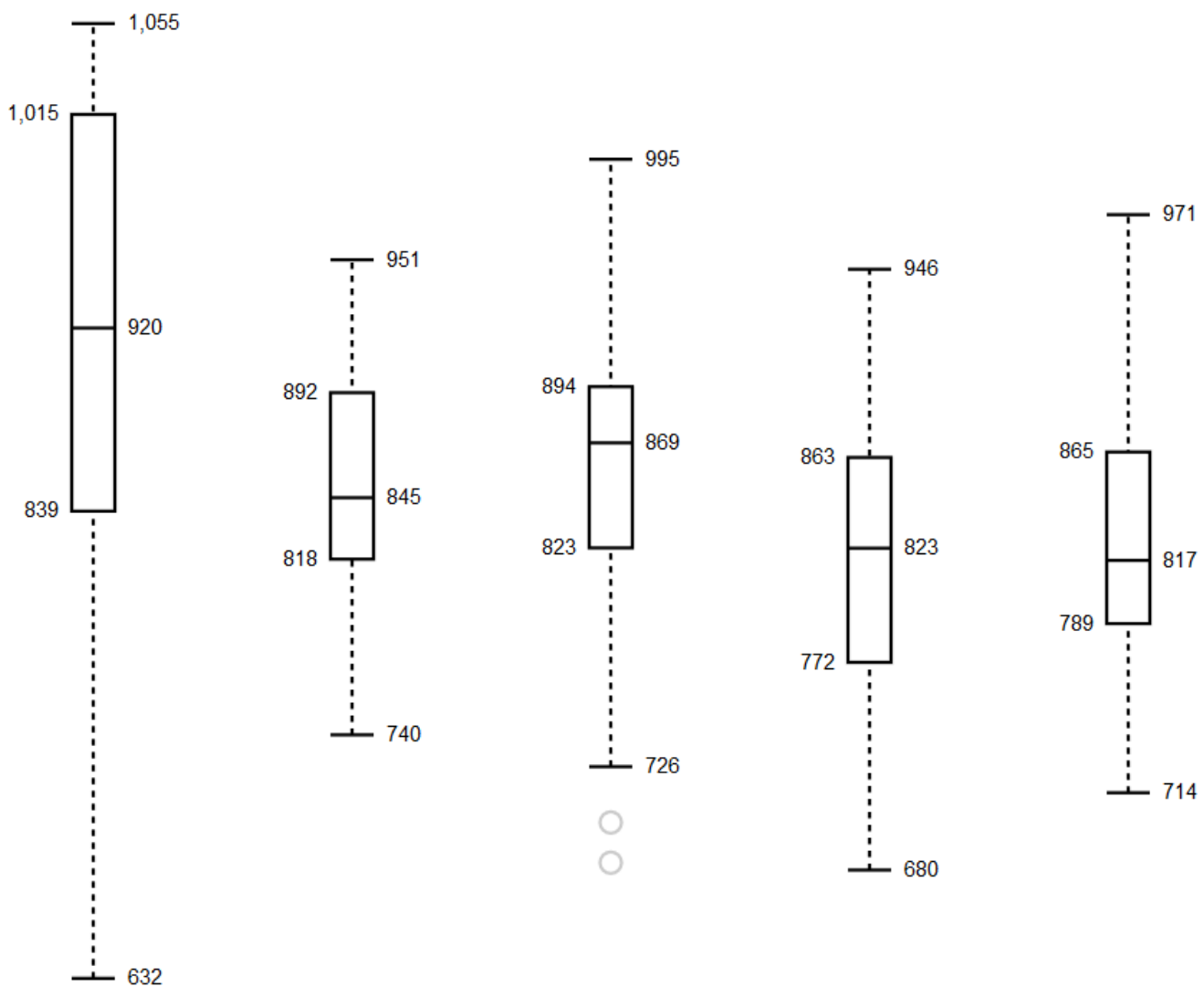
- <https://atom.io>
- <https://notepad-plus-plus.org>
- En internet:
 - <https://js.do>
 - <http://jsbin.com/>
 - <https://jsfiddle.net>

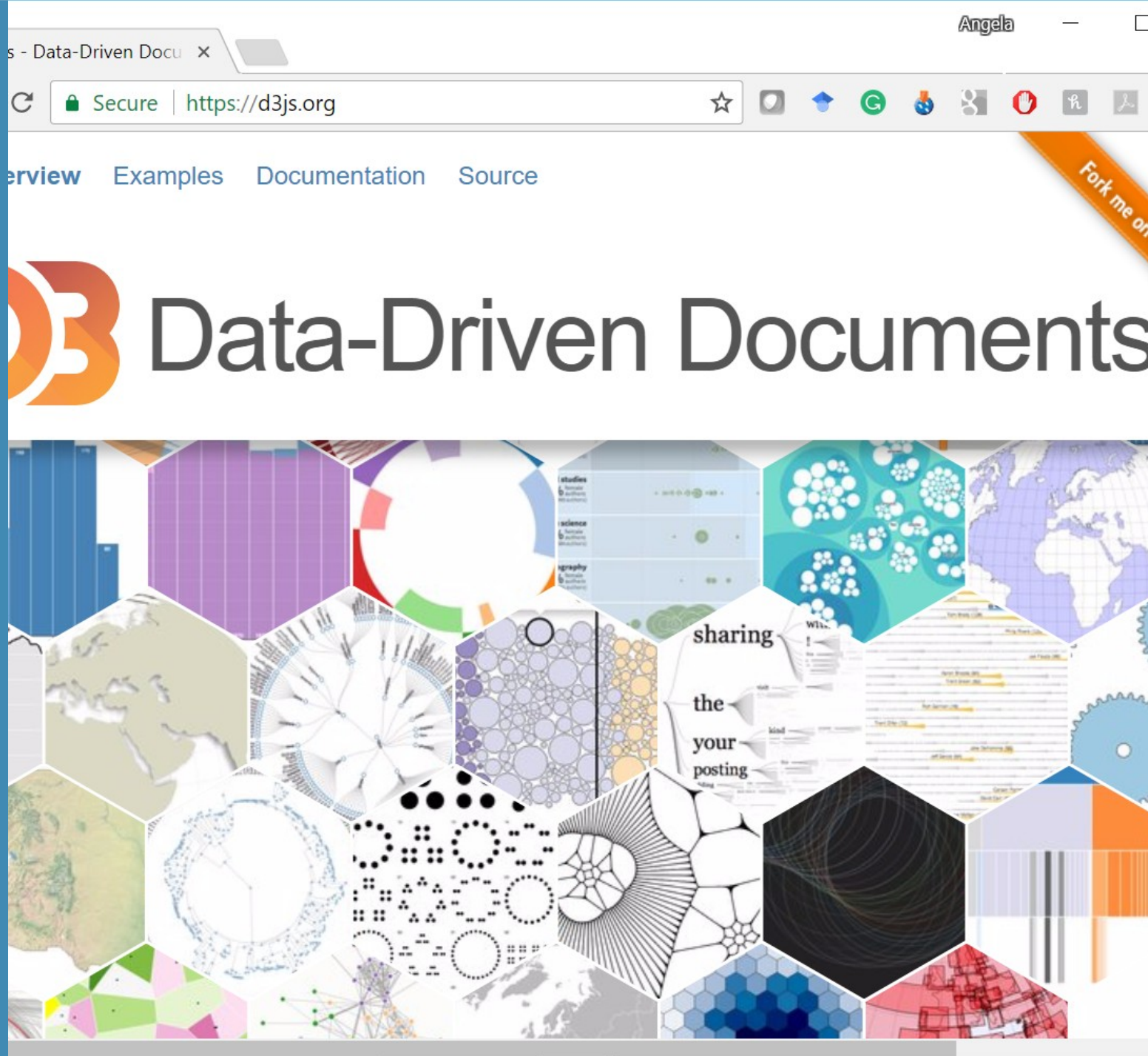
(Muchos más...)

- Manejar archivos en JS:

- http://learnjsdata.com/read_data.html







EXPLORANDO
GRÁFICOS DE
D3.JS

<https://d3js.org>

<https://github.com/d3/d3/wiki/gallery>

<https://github.com/d3/d3/wiki>

A decorative wavy blue line runs vertically along the left side of the image, starting from the top and extending to the bottom. It has a slightly irregular, hand-drawn appearance.

JQPLOT2

LIBRERÍA DE JAVASCRIPT

¿Cómo se utiliza JQPLOT?

- Se incluye el Código Fuente de la página web:

```
<script type="text/javascript" src="
http://ajax.googleapis.com/ajax/libs/jquery
/1.9.1/jquery.min.js"></script>
<script type="text/javascript"
src="../../src/jquery.jqplot.js"></script>
<script type="text/javascript" src="jquery-ui/js/jquery-
ui.min.js"></script>
<script type="text/javascript"
src="../../src/plugins/jqplot.canvasTextRenderer.js"></script>
<script type="text/javascript"
src="../../src/plugins/jqplot.canvasAxisLabelRenderer.js"></sc
ript>
<link rel="stylesheet" type="text/css"
href="../../src/jquery.jqplot.css" />
<link rel="stylesheet" type="text/css" href="
http://ajax.googleapis.com/ajax/libs/jqueryui
/1.10.0/themes/smoothness/jquery-ui.css" />
```

GLOSARIO

AJAX - *Asynchronous JavaScript And XML:*
Técnica para ejecutar aplicaciones en el cliente (navegador web)

jQuery: Biblioteca gráfica multiplataforma de JavaScript

Angela

jqPlot Charts and Graphs

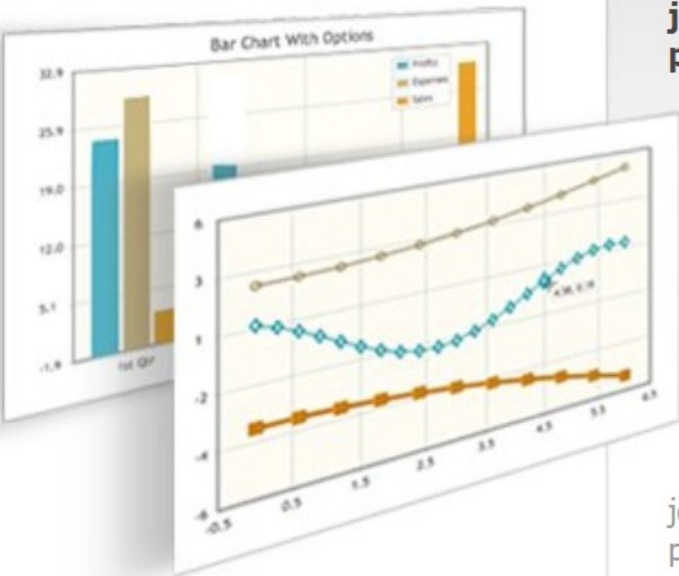
www.jqplot.com

jqPlot

pure javascript plotting

Home Examples Docs Download Info

A Versatile and Expandable jQuery Plotting Plugin!



jqPlot is a plotting and charting plugin for the jQuery Javascript framework. jqPlot produces beautiful line, bar and pie charts with many features:

- Numerous chart style options.
- Date axes with customizable formatting.
- Up to 9 Y axes.
- Rotated axis text.
- Automatic trend line computation.
- Tooltips and data point highlighting.
- Sensible defaults for ease of use.

jqPlot is an open source project by Chris Leonello.

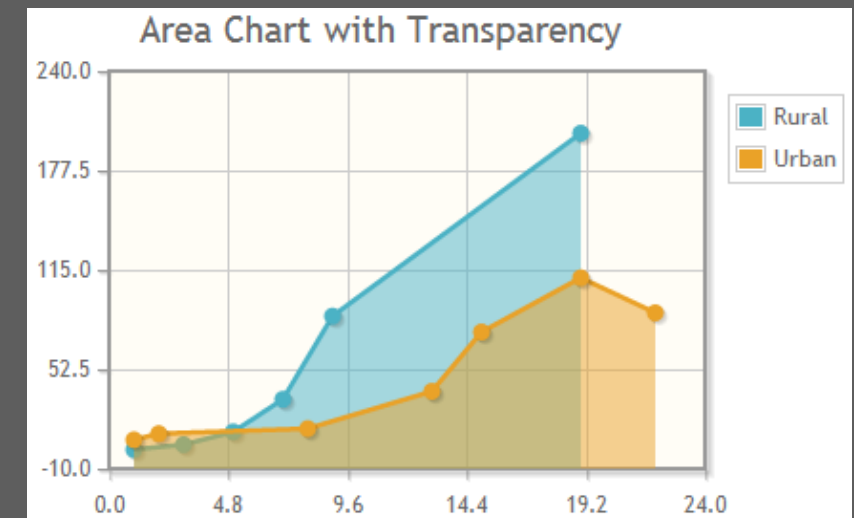
[Download Now!](#)

EXPLORANDO GRÁFICOS DE JQPLOT2

<http://www.jqplot.com/>

<http://www.jqplot.com/examples/>

<https://gist.github.com/perrygeo/3539326>





GRACIAS

Información de
contacto:

ANGELA DEVIA
Ing. de Sistemas
www.angeladevia.com
ing.angela.devia@gmail.com