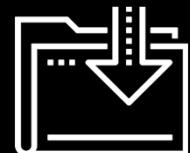


Data Boot Camp  
Lesson 1.1



# WELCOME



# The Rise of Data



Why is **data analytics** such  
a **hot** skill these days?

# Explosive Growth in Digitized Data (Creation)

1



# 2

## Explosive Growth in Analytic Tools (Synthesis)



# Accelerating Search for Actionable Insight (Value)

3

Restaurants   Nightlife   Home Services   Write a Review   Events   Talk   Log In

Best Restaurants in San Francisco, CA

Showing 1-20 of 7848

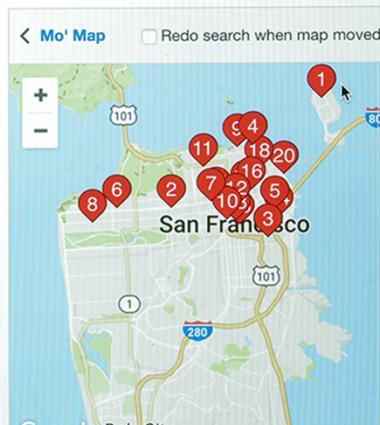
1. Aracely Cafe  
★★★☆☆ 113 reviews  
\$\$ - American (New), Venues & Event  
This restaurant takes reservations  
Get 7% Cash Back when you dine here  
I seriously hope all the hipster jerks from the city don't find this place and ruin it. I hesitate to post this review due to them to the presence of this place. But since it's... [read more](#)

2. Derm Restaurant  
★★★★★ 34 reviews  
\$\$ - Thai  
This restaurant takes reservations  
This restaurant accepts pickup orders

401 13th St  
San Francisco, CA 94130  
(415) 985-7117  
[Find a Table](#)  
[Enroll in Cash Back](#)

Laurel Heights  
3226 Geary Blvd  
San Francisco, CA 94118  
(415) 379-4549  
[Find a Table](#)  
[Start Order](#)

Mo' Map   Redo search when map moved

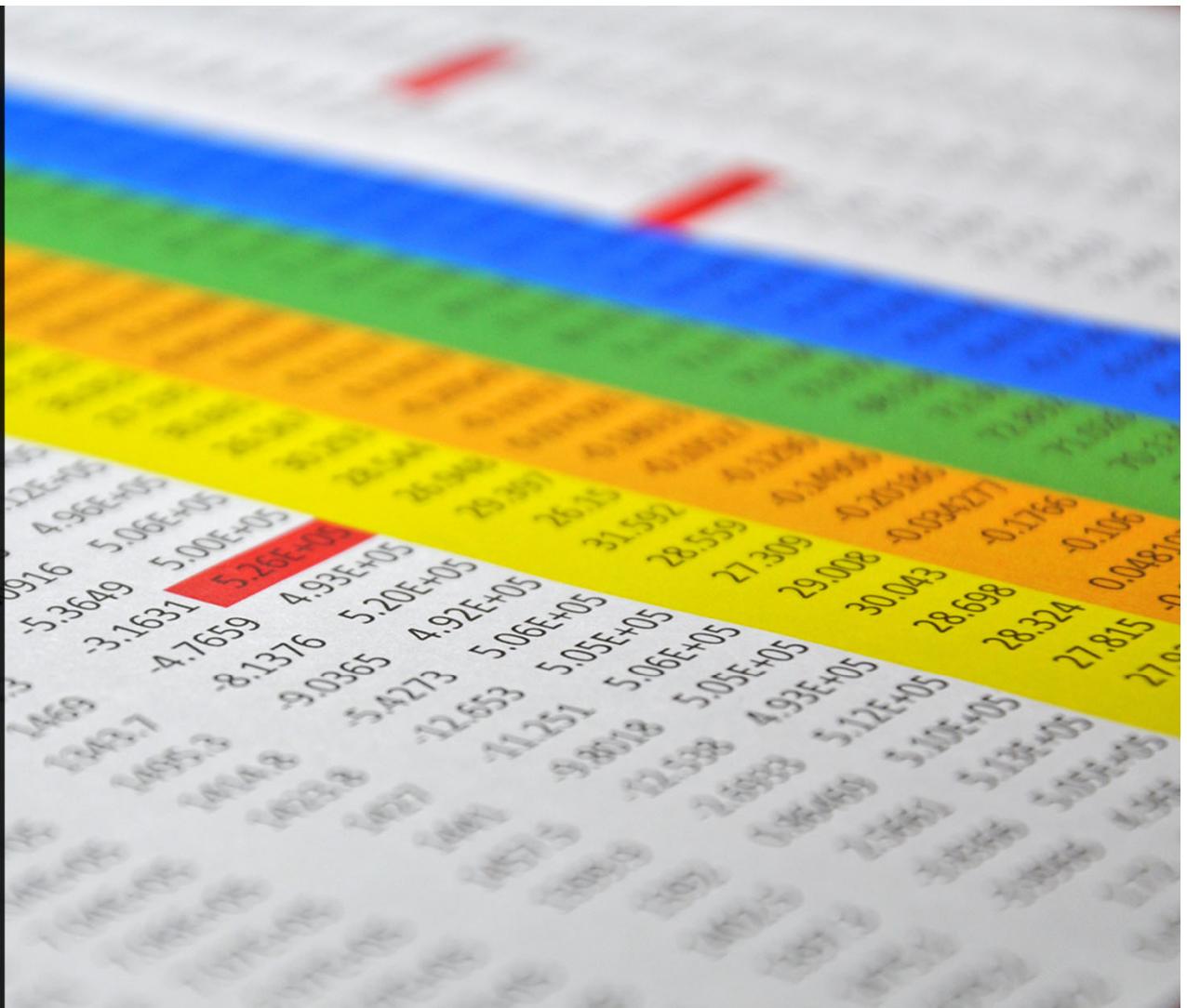


Map data ©2017 Google. [Terms of Use](#) [Report a map error](#)  
Ads by Google  
[salutemarinabay.com](#) ▾  
**Salute E Vita - Italian Food - Waterfront Dining**  
Enjoy authentic Italian dishes with breathtaking views of San Francisco Bay.  
1900 Esplanade Dr, Richmond, CA

What does the term  
**data** mean?

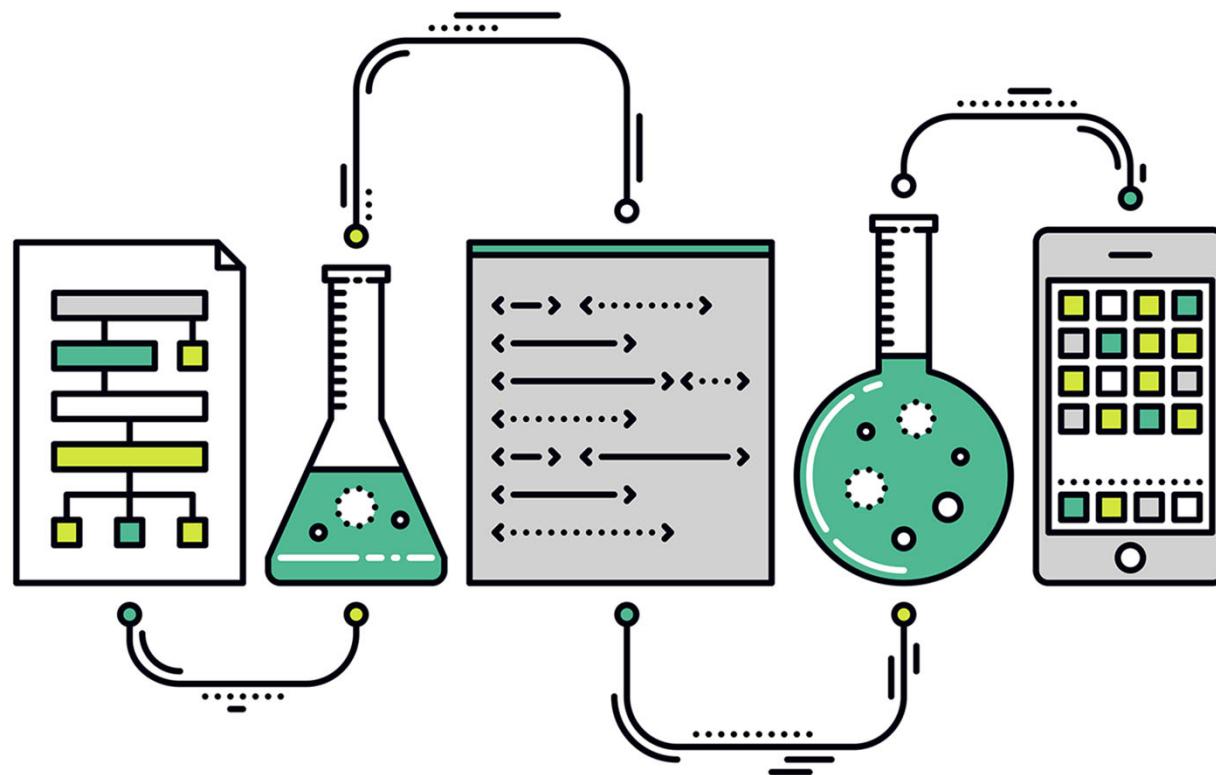


Perhaps you  
are picturing  
an Excel  
spreadsheet.



# Data Science Involves Spreadsheets and Formulas

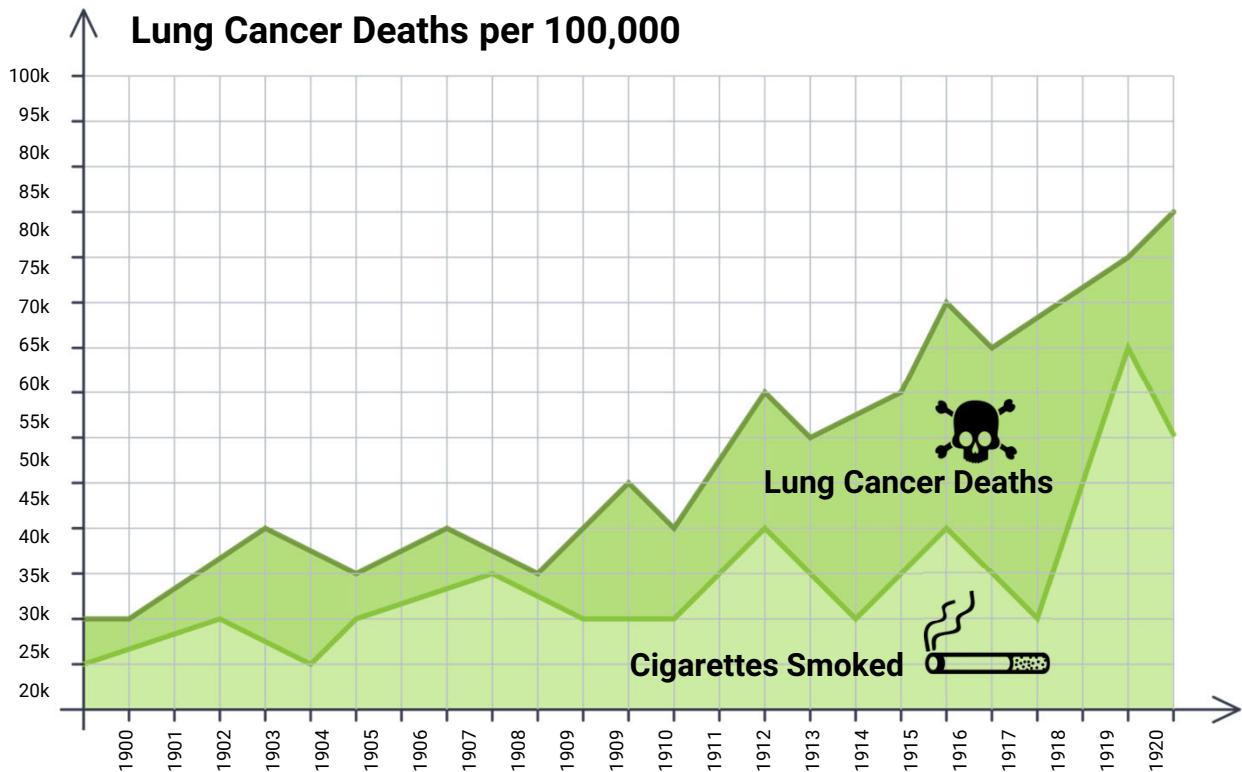
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Fundamentally, data science  
is about **storytelling** and  
**truth-telling**.

# Data as Truth-Telling



Data as Truth-Telling

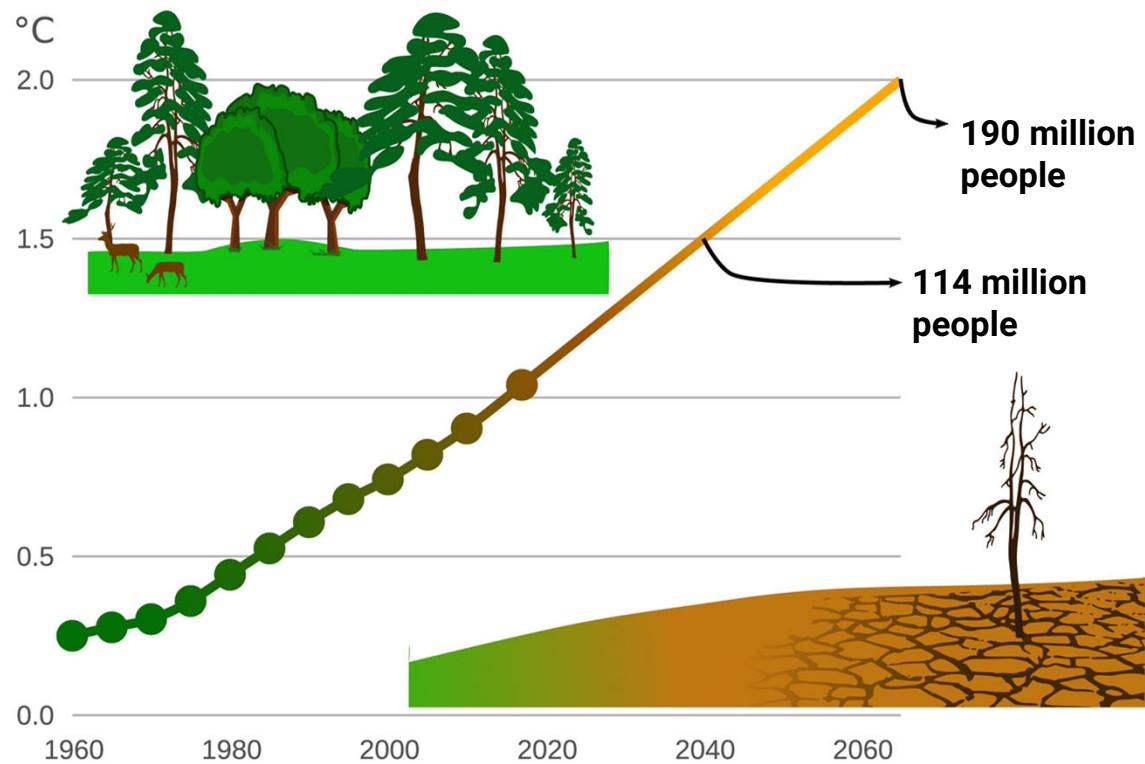
Unearthing Relationships



Data as Truth-Telling

Making Predictions

## Exposure to Extreme Drought Is Increasing



Data as Truth-Telling

Stating Significance

# Data as Storytelling

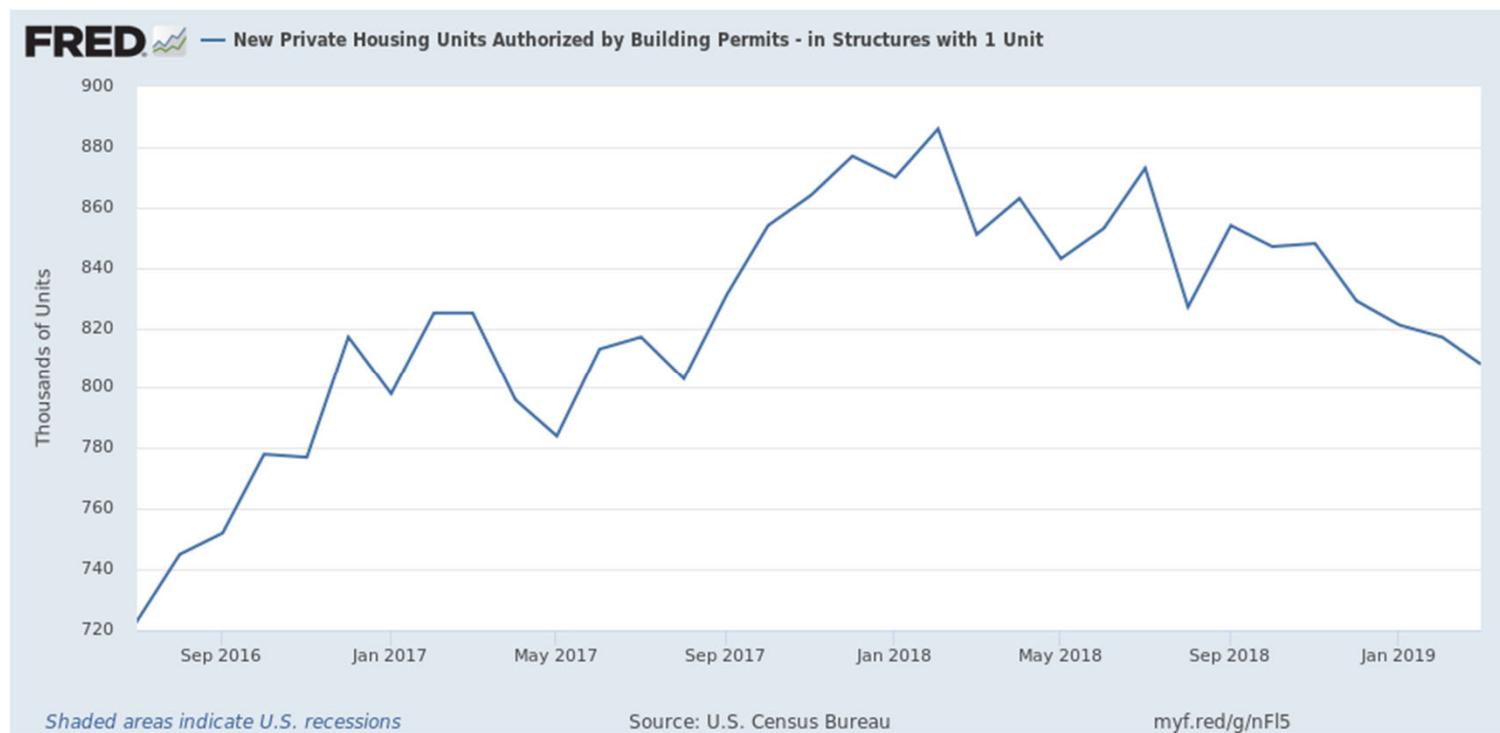
# Data as Storytelling

---

U.S. Debt as Percentage of Gross Domestic Product, 1790–2011							
1790	29.6%	1835	0.0	1880	18.4	1925	21.6
1791	29.2	1836	0.0	1881	16.8	1926	19.0
1792	28.0	1837	0.2	1882	14.3	1927	18.0
1793	24.4	1838	0.6	1883	13.5	1928	17.0
1794	21.8	1839	0.2	1884	13.3	1929	14.9
1795	18.7	1840	0.3	1885	13.2	1930	16.5
1796	16.4	1841	0.8	1886	12.4	1931	22.3
1797	16.5	1842	1.2	1887	11.2	1932	34.5
1798	16.0	1843	1.5	1888	10.2	1933	39.1
1799	15.8	1844	1.0	1889	8.6	1934	44.0
1800	15.1	1845	0.7	1890	7.8	1935	42.9
1801	13.3	1846	1.2	1891	7.0	1936	43.0
1802	13.9	1847	1.7	1892	6.6	1937	40.1
1803	14.1	1848	2.2	1893	6.8	1938	42.8
1804	13.2	1849	2.5	1894	7.9	1939	43.0
1805	10.9	1850	2.3	1895	7.9	1940	42.7
1806	10.0	1851	2.4	1896	8.5	1941	43.3
The Great Depression & World War II							
						1970	28.0
						1971	28.1
						1972	27.4
						1973	26.0
						1974	23.9
						1975	25.3
						1976	27.5
						1977	27.8
						1978	27.4
						1979	25.6
						1980	26.1
						1981	25.8
						1982	28.7
						1983	33.1
						1984	34.0
						1985	26.4
						1986	38.5
Reagan Tax Cuts							

# Data = Drama

New Housing Construction: Making A Bottom, At Close To Recessional Levels



# Course Overview

# Tools for Truths, Skills for Stories:

---

**Our Goals:**



Truth-telling  
Storytelling

**Our Means:**



Microsoft Excel	SQL
Python	MongoDB
pandas	HTML/CSS
Matplotlib/Seaborn	JavaScript
APIs	D3.js
Beautiful Soup	Leaflet.js/Google
Machine Learning	Maps
	Tableau
	Hadoop

# Course Overview

---

Each class will include the following:



Overview of Lesson Topics



Instructor Lecture



Instructor Demonstration



Class Discussions



In-Class Activities



Project Work

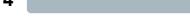
# **Weekly Breakdown by Subject**

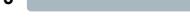
## Weeks 1–2

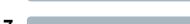
Week 1   
Week 2 

**Intro to Data Analytics & Excel Masters:** Introduction to the high-level concepts of data analytics and real-world data crunching with Excel formulas, pivot tables, and conditional formatting.

Week 3 

Week 4 

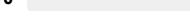
Week 5 

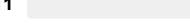
Week 6 

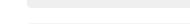
Week 7 

Week 8 

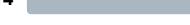
Week 9 

Week 10 

Week 11 

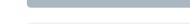
Week 12 

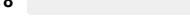
Week 13 

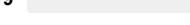
Week 14 

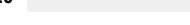
Week 15 

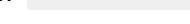
Week 16 

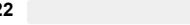
Week 17 

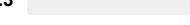
Week 18 

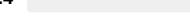
Week 19 

Week 20 

Week 21 

Week 22 

Week 23 

Week 24 

**Python Data Analytics and Visualization:** Thorough crash course on Python programming, followed by multiple weeks of data processing using advanced libraries like NumPy, pandas, Matplotlib, Seaborn, and BeautifulSoup.

**Deep Dive into Databases:** Immersion into introductory and advanced work with SQL (PostgreSQL) and noSQL databases (MongoDB).

**Web-Based Data Visualization:** Introduction to the fundamental tools of web development (HTML, CSS, JavaScript) and advanced libraries that are useful for data visualization (D3.js, Leaflet.js).

**Final Projects & Advanced Topics:** Introduction to Tableau and R as well as advanced topics like Hadoop and Machine Learning. Develop a real-world data visualization project.

## Weeks 3–9

Week 1

Week 2

Week 3

Week 4

Week 5

Week 6

Week 7

Week 8

Week 9

Week 10

Week 11

Week 12

Week 13

Week 14

Week 15

Week 16

Week 17

Week 18

Week 19

Week 20

Week 21

Week 22

Week 23

Week 24

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## Weeks 10–12

Week 1

Week 2

Week 3

Week 4

Week 5

Week 6

Week 7

Week 8

Week 9

Week 10

Week 11

Week 12

Week 13

Week 14

Week 15

Week 16

Week 17

Week 18

Week 19

Week 20

Week 21

Week 22

Week 23

Week 24

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## Weeks 13–17

Week 1

Week 2

Week 3

Week 4

Week 5

Week 6

Week 7

Week 8

Week 9

Week 10

Week 11

Week 12

Week 13

Week 14

Week 15

Week 16

Week 17

Week 18

Week 19

Week 20

Week 21

Week 22

Week 23

Week 24

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## Weeks 18–24

Week 1

Week 2

Week 3

Week 4

Week 5

Week 6

Week 7

Week 8

Week 9

Week 10

Week 11

Week 12

Week 13

Week 14

Week 15

Week 16

Week 17

Week 18

Week 19

Week 20

Week 21

Week 22

Week 23

Week 24

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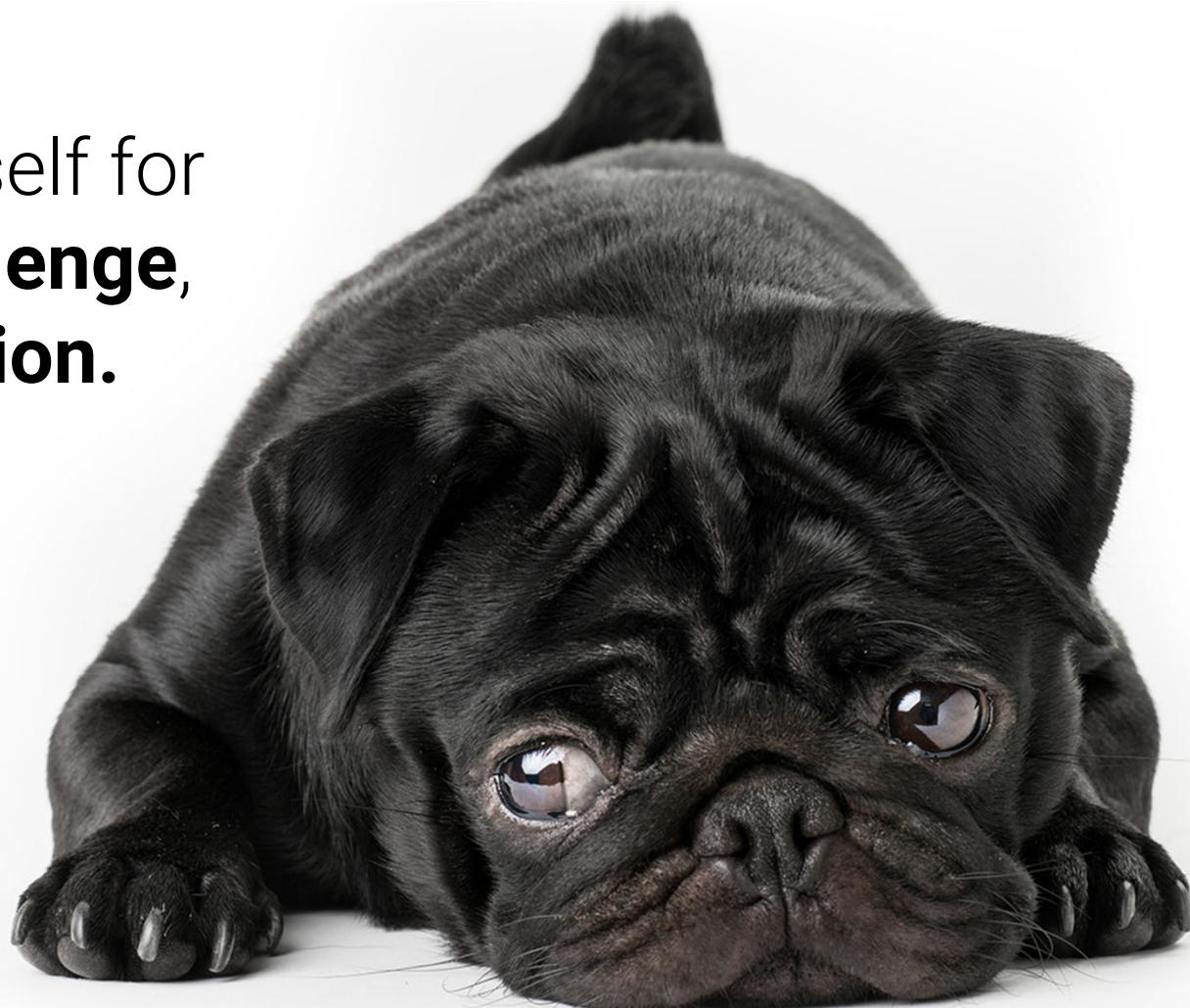
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# Helpful Tips

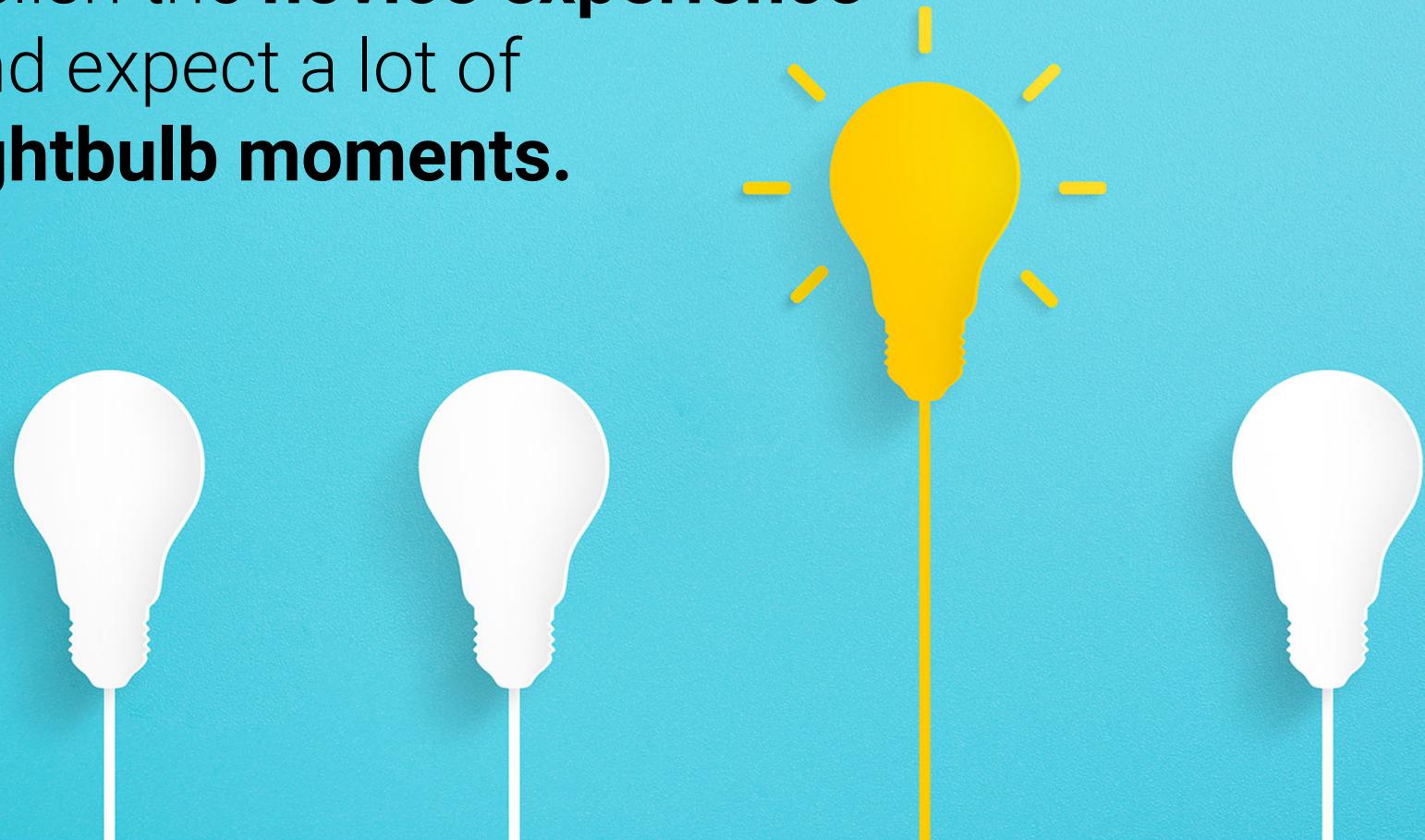


Embrace your  
inner toddler.

Brace yourself for  
**doubt, challenge,**  
and **confusion.**



Relish the **novice experience**  
and expect a lot of  
**lightbulb moments.**



A photograph of three bulldog puppies sitting in a field of green grass. In the foreground, two puppies are facing the camera; one is brown and white, and the other is white with brown spots. A third puppy is visible in the background, slightly out of focus.

Form a community  
with your classmates.

There is no shortcut.  
You've got to **put in the hours!**





**Celebrate your successes!**