



# Big Data and Its Implementation

# Hello...

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# Agenda

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- Introduction to Big Data
- Crawling Data from Twitter
- Data Preparation
- EDA
- Machine Learning



# Introduction To Big Data



# What Is Big Data ?



Is this big enough?

OR



It should be like this?

The most  
people say  
that ....



**Big Data is a big  
amount of data  
being collected**



**Hmmm.... What do you  
think about it ?**

But the fact is **not** just about **size or volume**.

**Big Data** refers to the **large amounts** of data that is pouring in **from various data sources and has different formats**, which is difficult to store and process using available database management tools or traditional data processing applications.







# Talk About Format

**Big Data**

Structured

Semi-Structured

Unstructured

**Any Idea?**



# Structured Data

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
1	hotel	is_canceled	lead_time	arrival_date_year	arrival_date_month	arrival_date_week_number	arrival_date_day_of_month	stays_in_weekend_nights	stays_in_week_nights	adults	children	babies	meal	country	market_segment
2	Resort Hotel	0	342	2015	July	27	1	0	0	2	0	0	BB	PRT	Direct
3	Resort Hotel	0	737	2015	July	27	1	0	0	2	0	0	BB	PRT	Direct
4	Resort Hotel	0	7	2015	July	27	1	0	1	1	0	0	BB	GBR	Direct
5	Resort Hotel	0	13	2015	July	27	1	0	1	1	0	0	BB	GBR	Corporate
6	Resort Hotel	0	14	2015	July	27	1	0	2	2	0	0	BB	GBR	Online TA
7	Resort Hotel	0	14	2015	July	27	1	0	2	2	0	0	BB	GBR	Online TA
8	Resort Hotel	0	0	2015	July	27	1	0	2	2	0	0	BB	PRT	Direct
9	Resort Hotel	0	9	2015	July	27	1	0	2	2	0	0	FB	PRT	Direct
10	Resort Hotel	1	85	2015	July	27	1	0	3	2	0	0	BB	PRT	Online TA
11	Resort Hotel	1	75	2015	July	27	1	0	3	2	0	0	HB	PRT	Offline TA/TO
12	Resort Hotel	1	23	2015	July	27	1	0	4	2	0	0	BB	PRT	Online TA
13	Resort Hotel	0	35	2015	July	27	1	0	4	2	0	0	HB	PRT	Online TA
14	Resort Hotel	0	68	2015	July	27	1	0	4	2	0	0	BB	USA	Online TA
15	Resort Hotel	0	18	2015	July	27	1	0	4	2	1	0	HB	ESP	Online TA
16	Resort Hotel	0	37	2015	July	27	1	0	4	2	0	0	BB	PRT	Online TA
17	Resort Hotel	0	68	2015	July	27	1	0	4	2	0	0	BB	IRL	Online TA
18	Resort Hotel	0	37	2015	July	27	1	0	4	2	0	0	BB	PRT	Offline TA/TO
19	Resort Hotel	0	12	2015	July	27	1	0	1	2	0	0	BB	IRL	Online TA
20	Resort Hotel	0	0	2015	July	27	1	0	1	2	0	0	BB	FRA	Corporate
21	Resort Hotel	0	7	2015	July	27	1	0	4	2	0	0	BB	GBR	Direct
22	Resort Hotel	0	37	2015	July	27	1	1	4	1	0	0	BB	GBR	Online TA
23	Resort Hotel	0	72	2015	July	27	1	2	4	2	0	0	BB	PRT	Direct
24	Resort Hotel	0	72	2015	July	27	1	2	4	2	0	0	BB	PRT	Direct
25	Resort Hotel	0	72	2015	July	27	1	2	4	2	0	0	BB	PRT	Direct
26	Resort Hotel	0	127	2015	July	27	1	2	5	2	0	0	HB	GBR	Offline TA/TO
27	Resort Hotel	0	78	2015	July	27	1	2	5	2	0	0	BB	PRT	Offline TA/TO
28	Resort Hotel	0	48	2015	July	27	1	2	5	2	0	0	BB	IRL	Offline TA/TO
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30	Resort Hotel	0	77	2015	July	27	1	2	5	2	0	0	BB	PRT	Online TA
31	Resort Hotel	0	99	2015	July	27	1	2	5	2	0	0	BB	PRT	Online TA
32	Resort Hotel	0	118	2015	July	27	1	4	10	1	0	0	BB	NULL	Direct
33	Resort Hotel	0	95	2015	July	27	1	4	11	2	0	0	BB	GBR	Offline TA/TO
34	Resort Hotel	1	96	2015	July	27	1	2	8	2	0	0	BB	PRT	Direct
35	Resort Hotel	0	69	2015	July	27	2	2	4	2	0	0	BB	IRL	Offline TA/TO
36	Resort Hotel	1	45	2015	July	27	2	1	3	3	0	0	BB	PRT	Online TA
37	Resort Hotel	1	40	2015	July	27	2	1	3	3	0	0	BB	PRT	Online TA
38	Resort Hotel	0	15	2015	July	27	2	1	3	2	0	0	BB	ESP	Online TA
39	Resort Hotel	0	36	2015	July	27	2	1	3	3	0	0	BB	PRT	Online TA
40	Resort Hotel	1	43	2015	July	27	2	1	3	3	0	0	BB	PRT	Online TA



# Semi-Structured data

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4
5 {"created_at": "Sat May 26 13:18:31 +0000 2018", "id": 1000365564320247808, "id_str": "1000365564320247808", "text": "RT @madridismoreaI_: HA LLEGADO EL D\\u00cdA \\u26bd\\ufe0f\\n\\nHACERLO REAL @realmadrid \\ud83d\\ude4f\\ud83c\\udff6\\n\\n
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7 {"created_at": "Sat May 26 13:18:31 +0000 2018", "id": 1000365564357832705, "id_str": "1000365564357832705", "text": "RT @madridismoreaI_: Mi XI para ma\\u00flana: Navas, Carvajal, Nacho, Ramos, Marcelo, Modric, Kroos, Casemiro, Isco
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9 {"created_at": "Sat May 26 13:18:31 +0000 2018", "id": 1000365564517388288, "id_str": "1000365564517388288", "text": "RT @ECG_Unofficial: We will like to categorically state our sincere commitment to ensure you all watch today's #UCL
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11 {"created_at": "Sat May 26 13:18:31 +0000 2018", "id": 1000365564781580289, "id_str": "1000365564781580289", "text": "Real Madrid.... LETS GO!!!!!!!!!!!!!!!!!!!!!! I am not gonna be too arrogant predicting we gonna win by 5-0, so I
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13 {"created_at": "Sat May 26 13:18:31 +0000 2018", "id": 1000365565125513217, "id_str": "1000365565125513217", "text": "RT @ChampionsLeague: Klopp \\ud83e\\udd23\\ud83e\\udd23\\ud83e\\udd23\\n\\n#UCLfinal https://t.co/Ve5eyfalwV", "source": "
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30
31 {"created_at": "Sat May 26 13:18:32 +0000 2018", "id": 1000365568250146817, "id_str": "1000365568250146817", "text": "RT @LFC: When you turn around and spot @Alex_OxChambo at the airport! \\ud83d\\ude4c\\ud83d\\udd34\\n\\n#UCLfinal Story:
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38
39 {"created_at": "Sat May 26 13:18:32 +0000 2018", "id": 1000365568875290624, "id_str": "1000365568875290624", "text": "@drremish_ @AaronStoneRocks @mantarlsingh @Dybalancex https://t.co/Y28DrJYNFA\\nI agree with you!", "display_text_
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41 {"created_at": "Sat May 26 13:18:32 +0000 2018", "id": 1000365569940574209, "id_str": "1000365569940574209", "text": "RT @marca: Zidane avisa: \\\"Est\\u00e9 avisados\\\" https://t.co/vSt9QVHjZJ #UCL https://t.co/ogthD6ux5P", "sour
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43 {"created_at": "Sat May 26 13:18:32 +0000 2018", "id": 1000365570297073665, "id_str": "1000365570297073665", "text": "RT @LFCFrance: \\ud83c\\udfb6 ALLEZ ALLEZ ALLEZ \\ud83c\\udfb6 \\n\\n#Believers #UCLfinal https://t.co/ZalodBlaWg", "so
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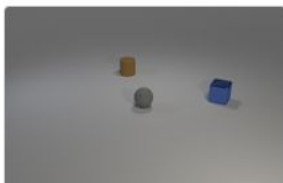
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1	Search interest in Ebola and <u>MERS</u> by month globally, indexed by 100		
2	month	Search interest in Ebola	Search interest in <u>MERS</u>
3	January 2014	0	1.64
4	February 2014	0.08	1.54
5	March 2014	0.51	1.68
6	April 2014	1.05	19.53
7	May 2014	0.34	41.34
8	June 2014	0.42	6.28
9	July 2014	1.64	3.36
10	August 2014	13.65	2.76
11	September 2014	3.26	2.77
12	October 2014	13.28	4.73
13	November 2014	2.37	2.64
14	December 2014	1.06	1.77
15	January 2015	0.69	1.53
16	February 2015	0.53	4.08
17	March 2015	0.51	3.51
18	April 2015	0.31	1.81
19	May 2015	0.25	4.87
20	June 2015	0.29	100
21			

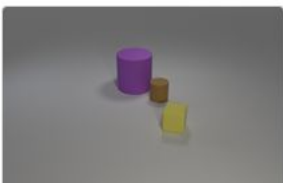
1	Search interest in Jeb Bush by city, following his 6/15 announcement	
2	city	Search Interest
3	Kendall (Florida United States)	100
4	Town and Country (Missouri United States)	94.03
5	<u>Bala Cynwyd</u> (Pennsylvania United States)	69.2
6	<u>Coral Gables</u> (Florida United States)	62.99
7	<u>The Hammocks</u> (Florida United States)	53.17
8	<u>Fountainbleau</u> (Florida United States)	48.08
9	<u>Cape Coral</u> (Florida United States)	43.4
10	<u>Palm Coast</u> (Florida United States)	42.74
11	<u>Weston</u> (Florida United States)	40.71
12	<u>Port St. Lucie</u> (Florida United States)	36.24
13	<u>Greenwich</u> (Connecticut United States)	35.94
14	<u>Palm Beach Gardens</u> (Florida United States)	33.55
15	<u>Hyattsville</u> (Maryland United States)	33.45
16	<u>Tallahassee</u> (Florida United States)	33.41
17	<u>Miami</u> (Florida United States)	33.37
18	<u>Davie</u> (Florida United States)	32.06
19	<u>Burke</u> (Virginia United States)	30.49
20	<u>Alexandria</u> (Virginia United States)	29.02
21	<u>Bradenton</u> (Florida United States)	28.87
22	<u>Williamsburg</u> (Virginia United States)	28.68
23	<u>West Palm Beach</u> (Florida United States)	28.34
24	<u>Yonkers</u> (New York United States)	27.42
25	<u>Lone Tree</u> (Colorado United States)	25.97
26	<u>Fort Lauderdale</u> (Florida United States)	25.76
27	<u>Doral</u> (Florida United States)	25.58
28	<u>Boca Raton</u> (Florida United States)	24.86



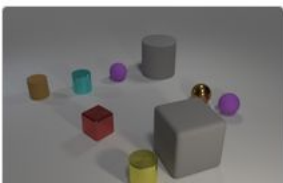
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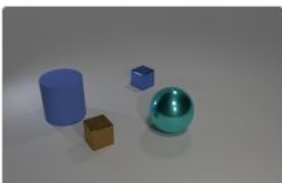
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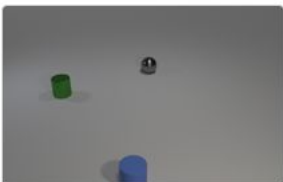
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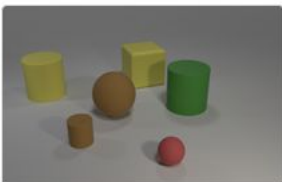
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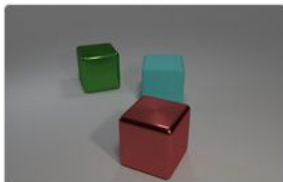
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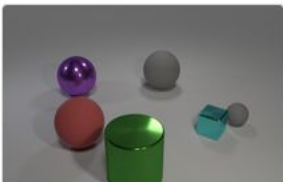
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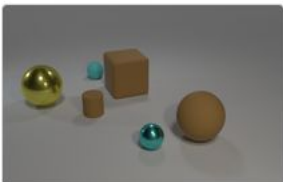
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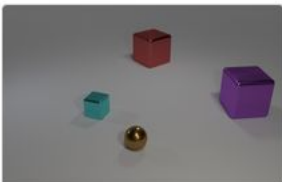
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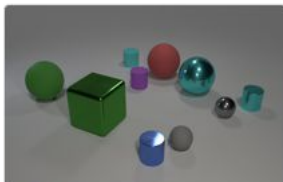
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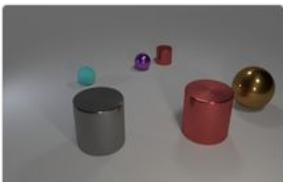
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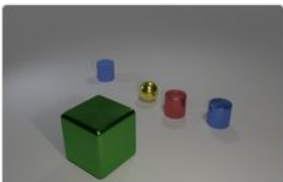
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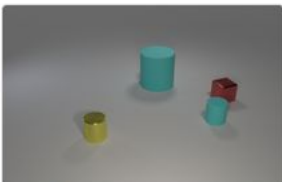
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CLEVR\_test\_000013.png  
Size 182.73 KB



CLEVR\_test\_000014.png  
Size 180.34 KB



CLEVR\_test\_000015.png  
Size 175.42 KB

[illegible]

But why we should know about that?  
It is just a format right?



Define the tools that you need

Every format need a different way to analyze

Need a different method

Need different ways to be solved



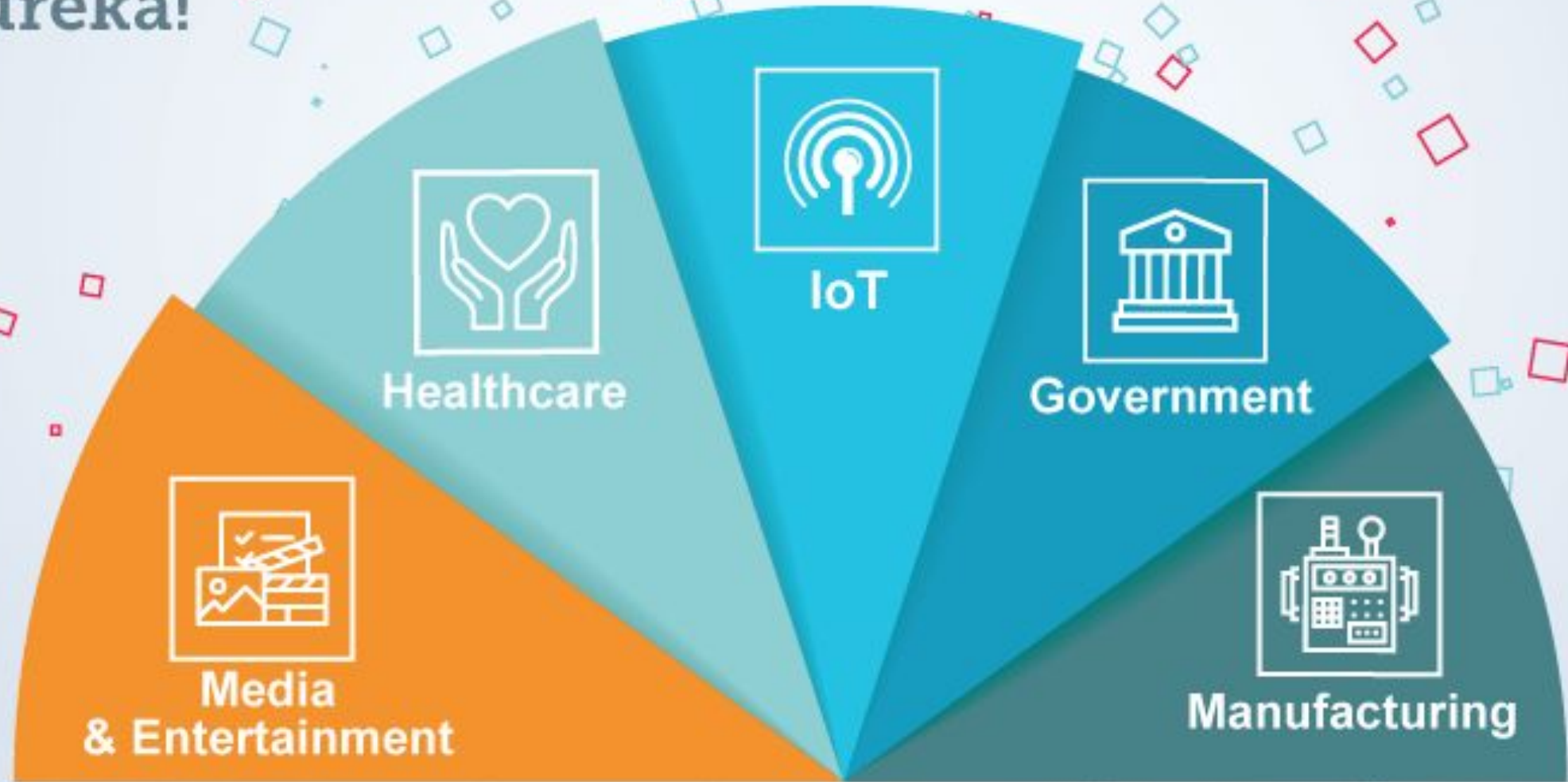
# Characteristics of big data



# Implementation of big data



edureka!



# BIG DATA APPLICATIONS

# Crawling and Scraping Data



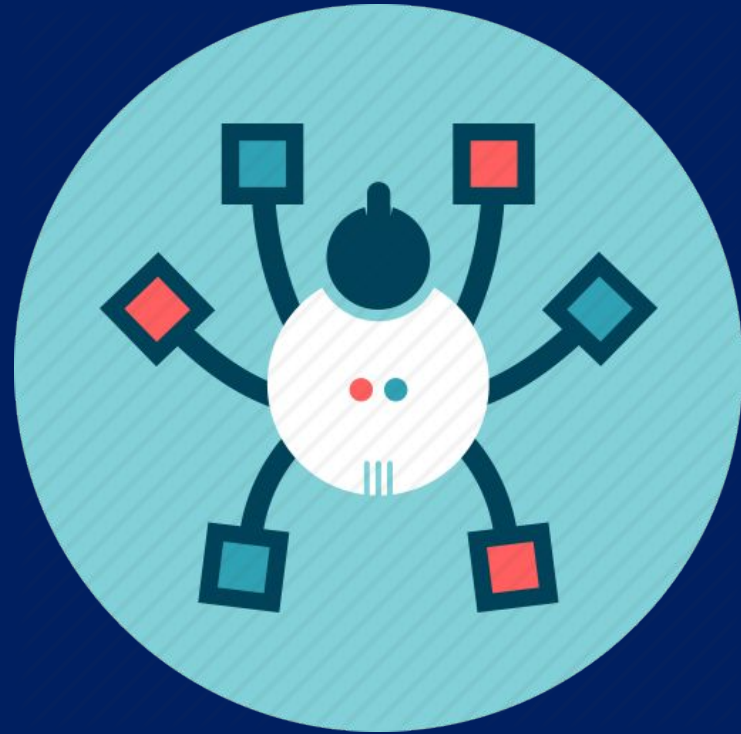
# Scraping Data

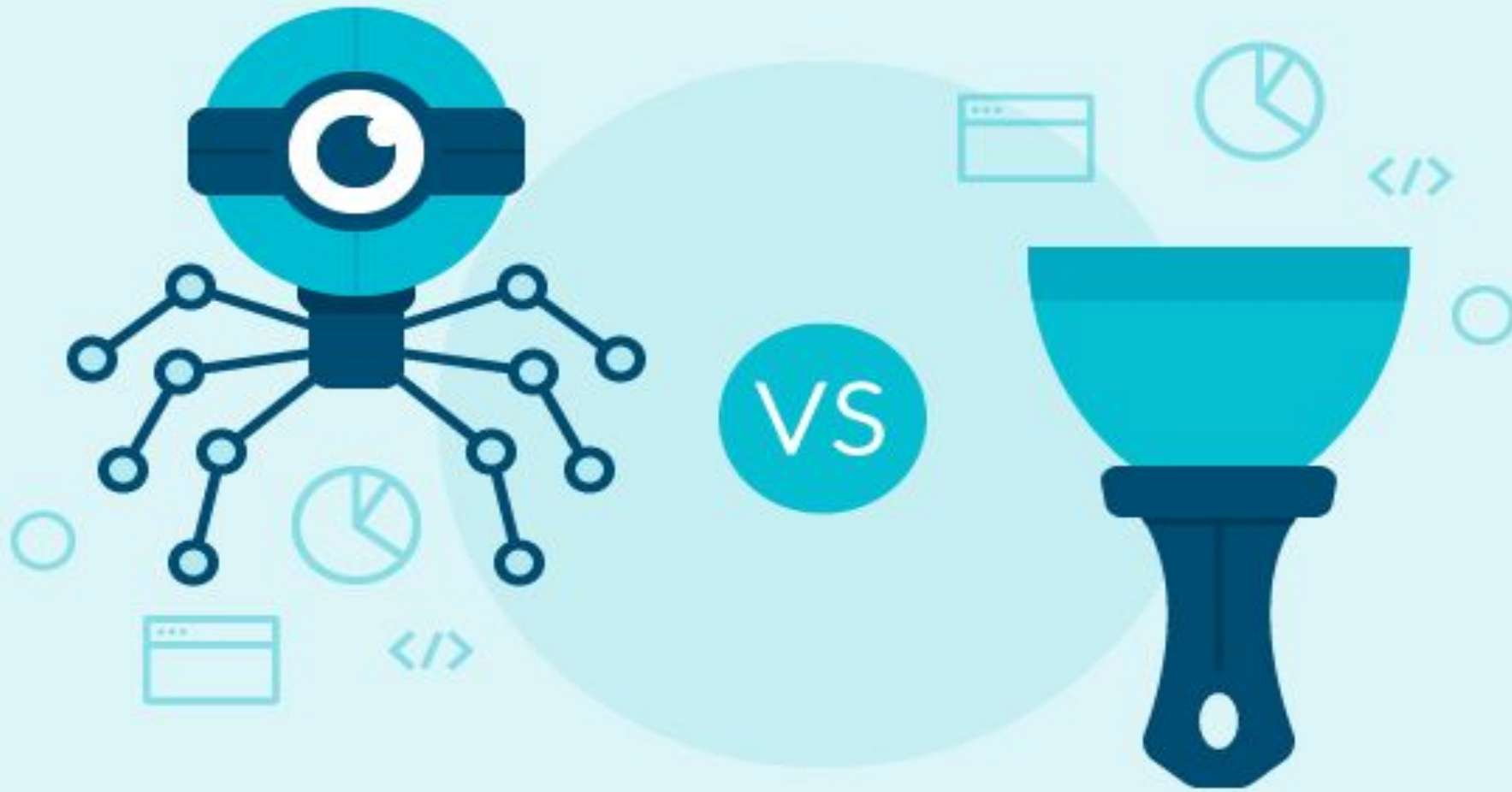
Data scraping is the finding of data and then scraping it. it pulls data directly from a page. this doesn't pull exclusively from the web, it can be taken from anywhere that data exist.



# Crawling Data

web crawling is digging deep into the nooks and crevices of the world wide web to retrieve the stuff you missed in spring cleaning. think about spiders or bots, scavenging through the web to find whatever is relevant to your quest



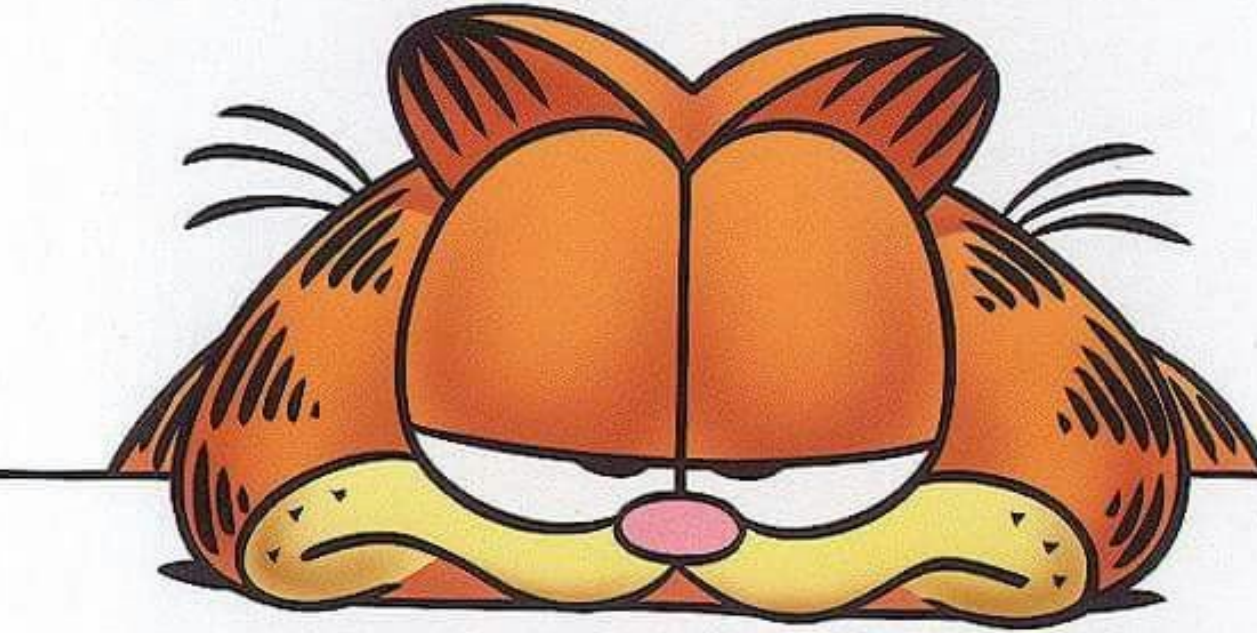


Crawling = Scraping ?

# Data Preparation







**I feel bored!!!!**

Spend almost  
**80%** of our time

But....

It is  
**IMPORTANT**

# What wrong with our data?



- Have different pattern
- Duplicates
- Missing value
- There is outliers
- Unexpected data values
- Doesn't fit with our need



**So, what should we do?**

**Dig a little deeper to  
your data**

Knowing your data

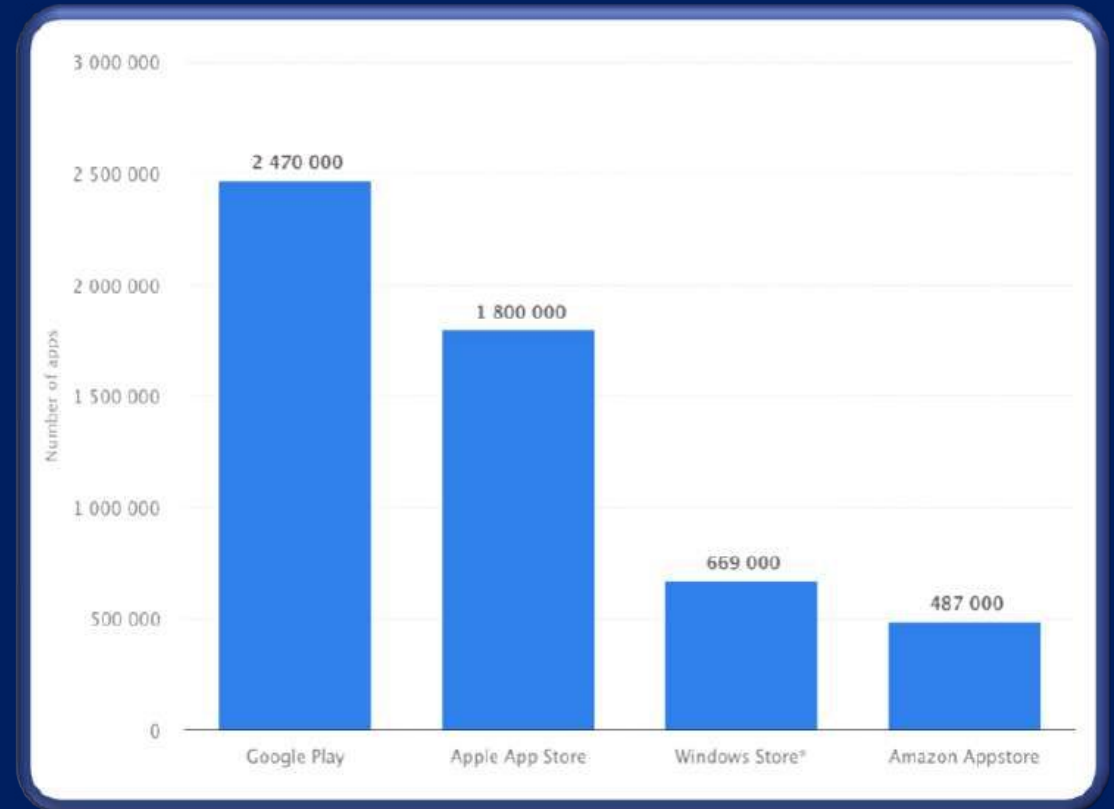
Cleaning

Manipulating Data



# Exploratory Data Analysis (EDA)





Source :

<https://www.statista.com/statistics/>

statista 

**You won't understand, if  
you don't try**  
**Let's check jupyter notebook file**



# Machine Learning







# Type of Machine Learning Algorithms

Let's make it simple

Supervised Learning

Semi-Supervised Learning

Unsupervised Learning

**Look at the label  
& Output**

# Machine Learning Algorithms Cheat Sheet

## Unsupervised Learning: Clustering

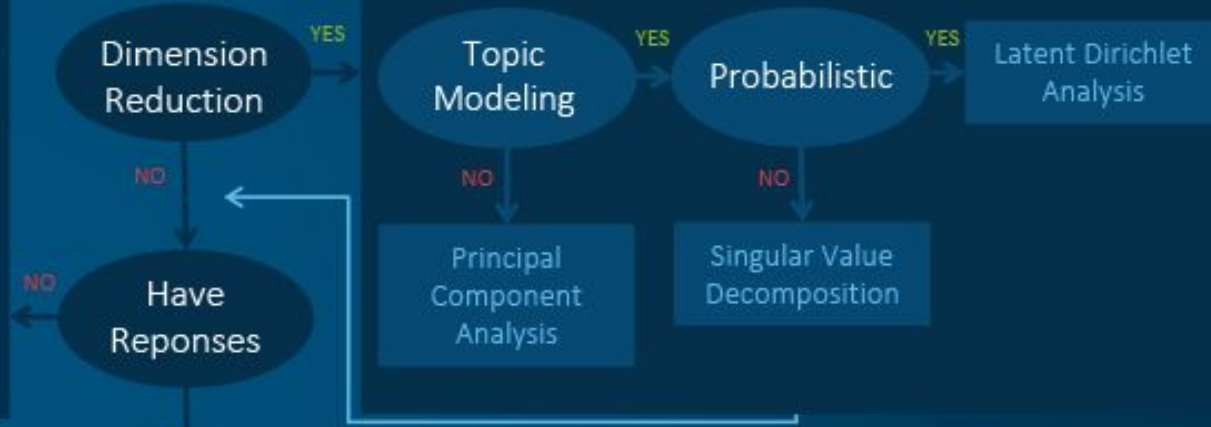


## Supervised Learning: Classification



# START

## Unsupervised Learning: Dimension Reduction

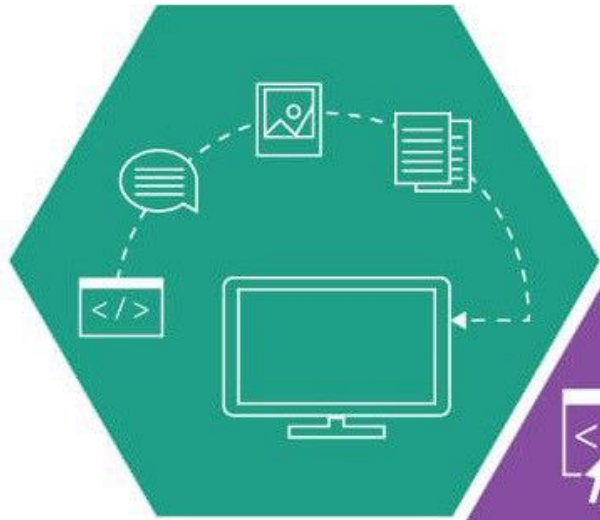


## Supervised Learning: Regression



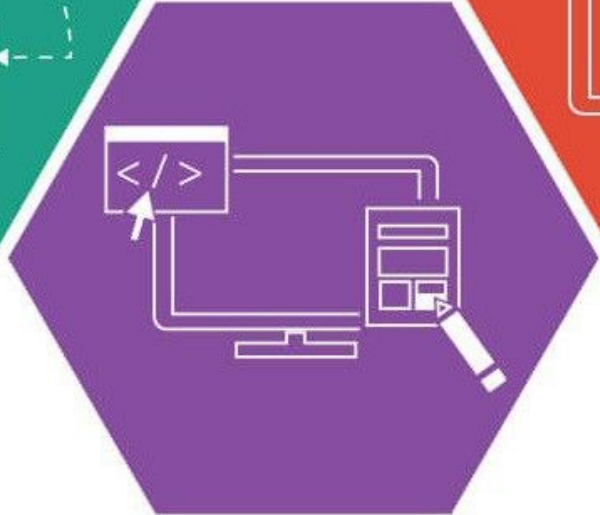


Get Data



1

2



Clean, Prepare  
& Manipulate Data

Train Model



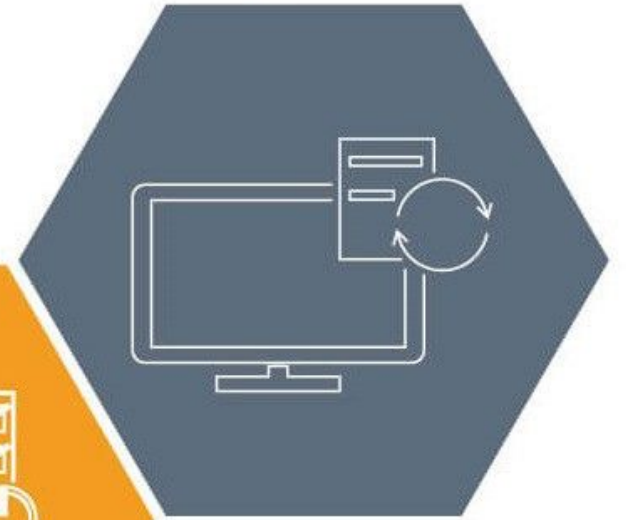
3

4



Test Data

Improve



5

# Time to Practice



# Reference

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- <https://www.edureka.co/blog/big-data-tutorial>
- <https://www.edureka.co/blog/big-data-applications-revolutionizing-various-domains/>
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# Image

- [https://www.123rf.com/photo\\_10823919\\_illustration-of-a-kid-carrying-a-box-full-of-toys-for-donation-or-organizing.html](https://www.123rf.com/photo_10823919_illustration-of-a-kid-carrying-a-box-full-of-toys-for-donation-or-organizing.html)
- [https://www.123rf.com/photo\\_11197789\\_illustration-of-kids-buying-souvenirs-from-a-toy-store.html?fromid=dGF5OG1ESHhVa0w0UVZodEpycHJNZz09](https://www.123rf.com/photo_11197789_illustration-of-kids-buying-souvenirs-from-a-toy-store.html?fromid=dGF5OG1ESHhVa0w0UVZodEpycHJNZz09)
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# THANK YOU

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