Power BI Introduction

Venkata Reddy Konasani

Contents

- What is Power BI?
- Main components in Power BI
- User Interface
- Getting the data inside Power BI

Reset Report

1/1/2020 5/31/2020

Region
- Midwest
- Northeast
- South
- West

State
- Alabama
- Arizona
- Arkansas
- California
- Colorado
- Connecticut
- District of Columbia
- Florida
- Georgia
- Hawaii
- Idaho
- Illinois
- Indiana
- Iowa
- Kansas
- Kentucky
- Louisiana
- Maryland
- Massachusetts
- Michigan
- Minnesota
- Mississippi

Sales Channel
- Distributor
- In-Store
- Online
- Wholesale

$44.4M
Total Sales

$12.7M
Total Profit

110K
Total Quantity

28.6%
Profit Margins

20.00K
Order

6.00
Average Delivery Days

Total Sales $245.62K

Average Delivery 6.07

Total Cost $175.44K

Top States by Sales

California	8.9M
Texas	4.6M
Illinois	3.7M
Florida	2.9M
New York	2.5M

Top Employees by Sales

Nicholas. C	1.9M
Donald. R	1.8M
Joe. P	1.8M
Shawn. W	1.8M
Carl. N	1.8M

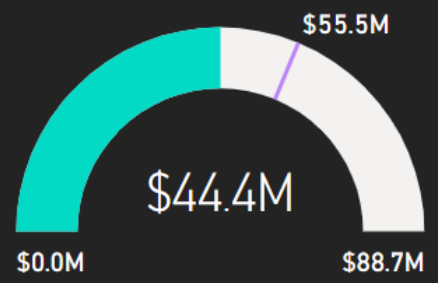
Top Employees by Avg Delivery

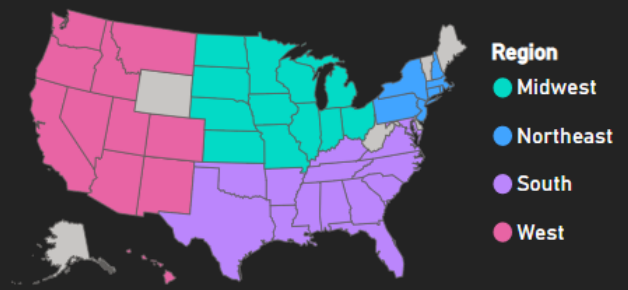
Carl. N	6.2
Joshua. B	6.1
Douglas. T	6.1
Joe. P	6.1
Keith. G	6.1

Product Name	Sales	% of Total	Profit	Quantity	Avg Delivery
Computers	$0.92M	2.08%	$0.26M	2,282	6.02
Cookware	$1.02M	2.31%	$0.29M	2,570	5.97
Dining Furniture	$0.97M	2.19%	$0.28M	2,413	5.88
Dinnerware	$0.88M	1.98%	$0.25M	2,192	5.90
Festive	$0.93M	2.11%	$0.27M	2,322	6.00
Floor Lamps	$0.97M	2.19%	$0.28M	2,373	6.12
Floral	$0.93M	2.10%	$0.27M	2,354	5.97
Furniture Cushions	$0.89M	2.01%	$0.26M	2,166	5.91
Total	**$44.37M**	**100.00%**	**$12.68M**	**110,402**	**6.00**

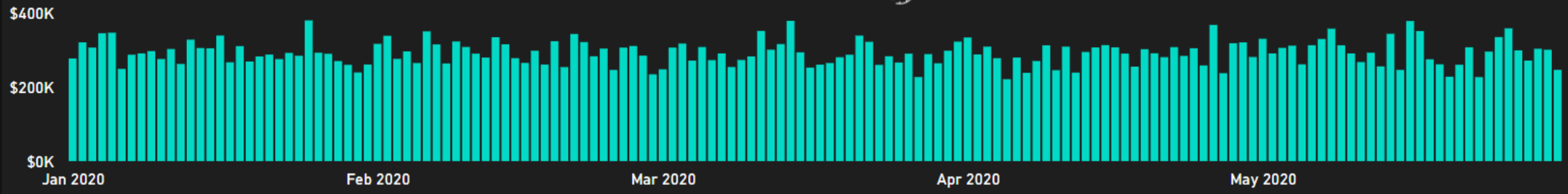
Year	Total Sales	% Total	Sales Target	MOM %	Cumm Total	Total Quantity
2020	$44.37M	100.00%	$55.46M			110,402
January	$9.07M	20.44%	$11.34M		$9.07M	22,464
February	$8.56M	19.29%	$10.70M	-5.64%	$17.63M	21,360
March	$8.94M	20.16%	$11.18M	4.50%	$26.57M	22,381
April	$8.62M	19.43%	$10.77M	-3.61%	$35.19M	21,376
May	$9.18M	20.69%	$11.47M	6.47%	$44.37M	22,821
Total	**$44.37M**	**100.00%**	**$55.46M**			**110,402**

Sales vs Target





Total Sales by Date



OVERVIEW

Sales Report

$5.3M	$5.3M	$2.6M	$2.3M	$3.3M	$21.8M
Australia	Canada	France	Germany	UK	USA

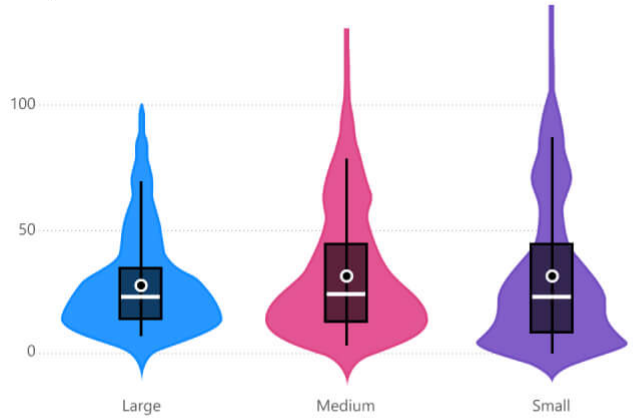
Key influencers | Top segments

What influences NPS to be 7 ?

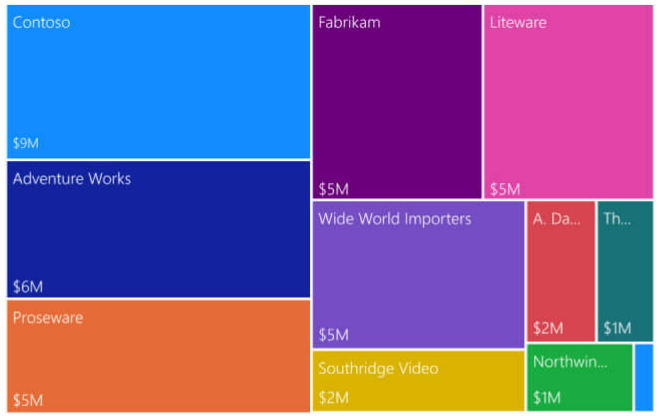
When ... ...the likelihood of NSAT being 7 increases by

- UnitePrice is 298.5 - 299.94 → 10.20x
- UnitPrice is 197.45 - 199.45 → 10.20x
- Manufacturer is Litware, INC. → 10.20x
- Color is Brown → 10.20x
- StockType is High → 10.20x
- Manufacturer is Contoso, Ltd → 10.20x
- Color is Silver → 10.20x

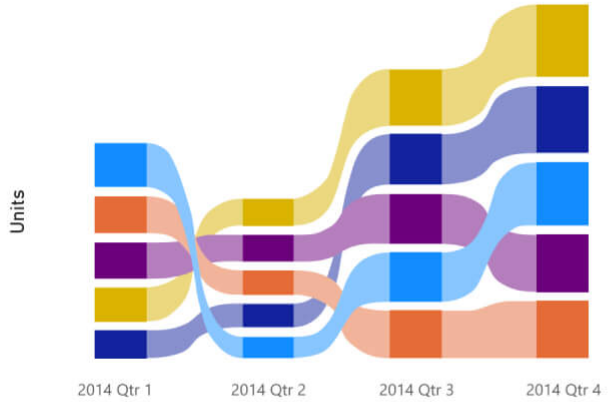
Units by Product and Sale Size



Sales Amount by Brand Name



Sales Amount by Year, Month and Brand Name



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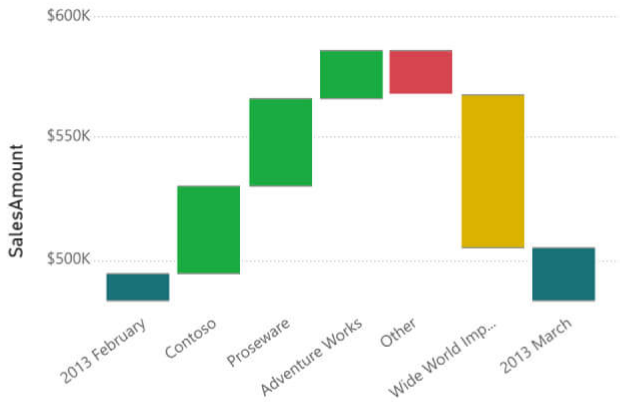


Visualizations

Values
Drag data fields here

Drillthrough
Keep all filters
Off
Drag data fields here

Fields

COVID-19 Coronavirus

27.02.2020 – 27.03.2020

Time Range: Cumulated | Continent: Alle | Country: Alle | State: Alle

Bluminate

Confirmed
593.291
(+63700 +12 %)

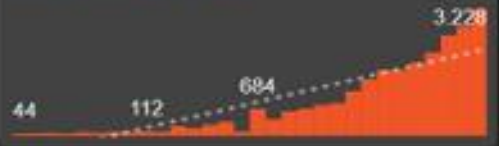
Deaths
27.198
(+3228 +13 %)

Existing
430.806
(+51155 +13 %)

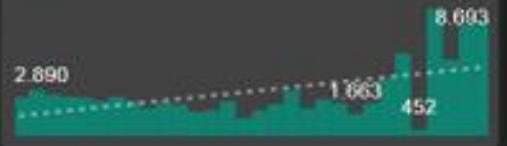
Recovered
130.659
(+8693 +7 %)

Distribution


Countries / State
189

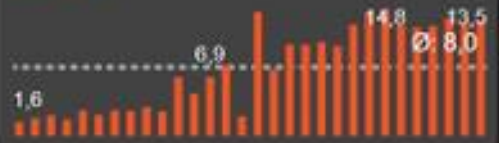
Day over Day (DoD)


DoD


DoD


Trend

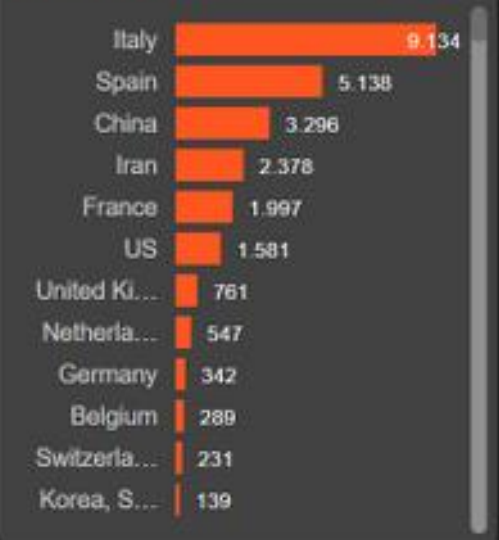

Map

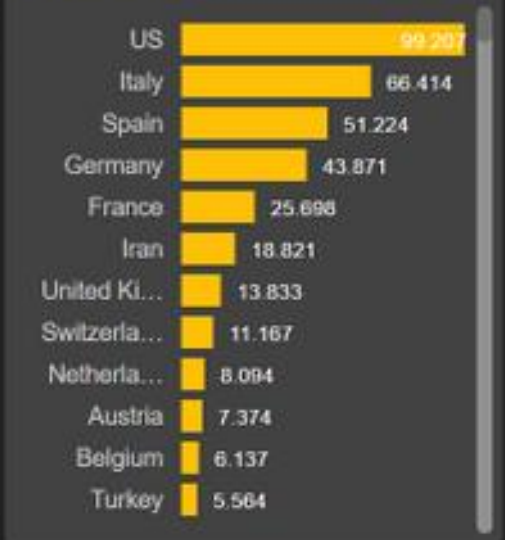

DoD %


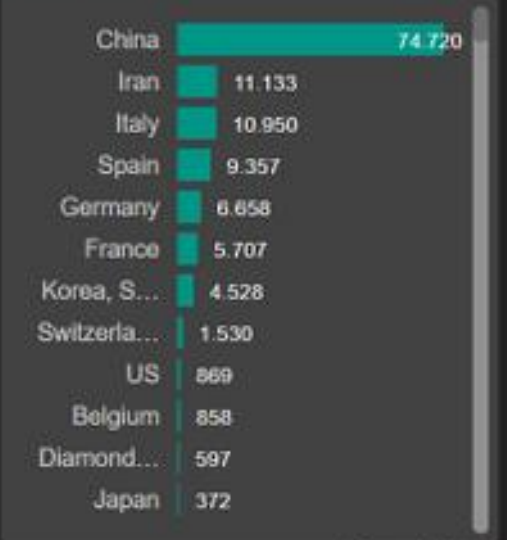
DoD %

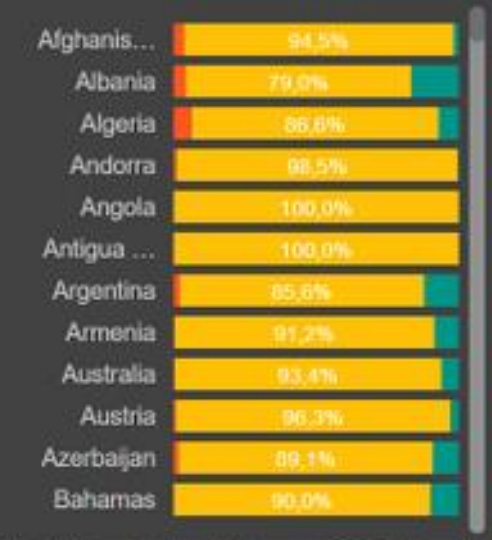

DoD %


100% by Date


Actual by Country


Actual by Country


Actual by Country


100% by Country


Source: Johns Hopkins University https://github.com/CSSEGISandData

What is Power BI?

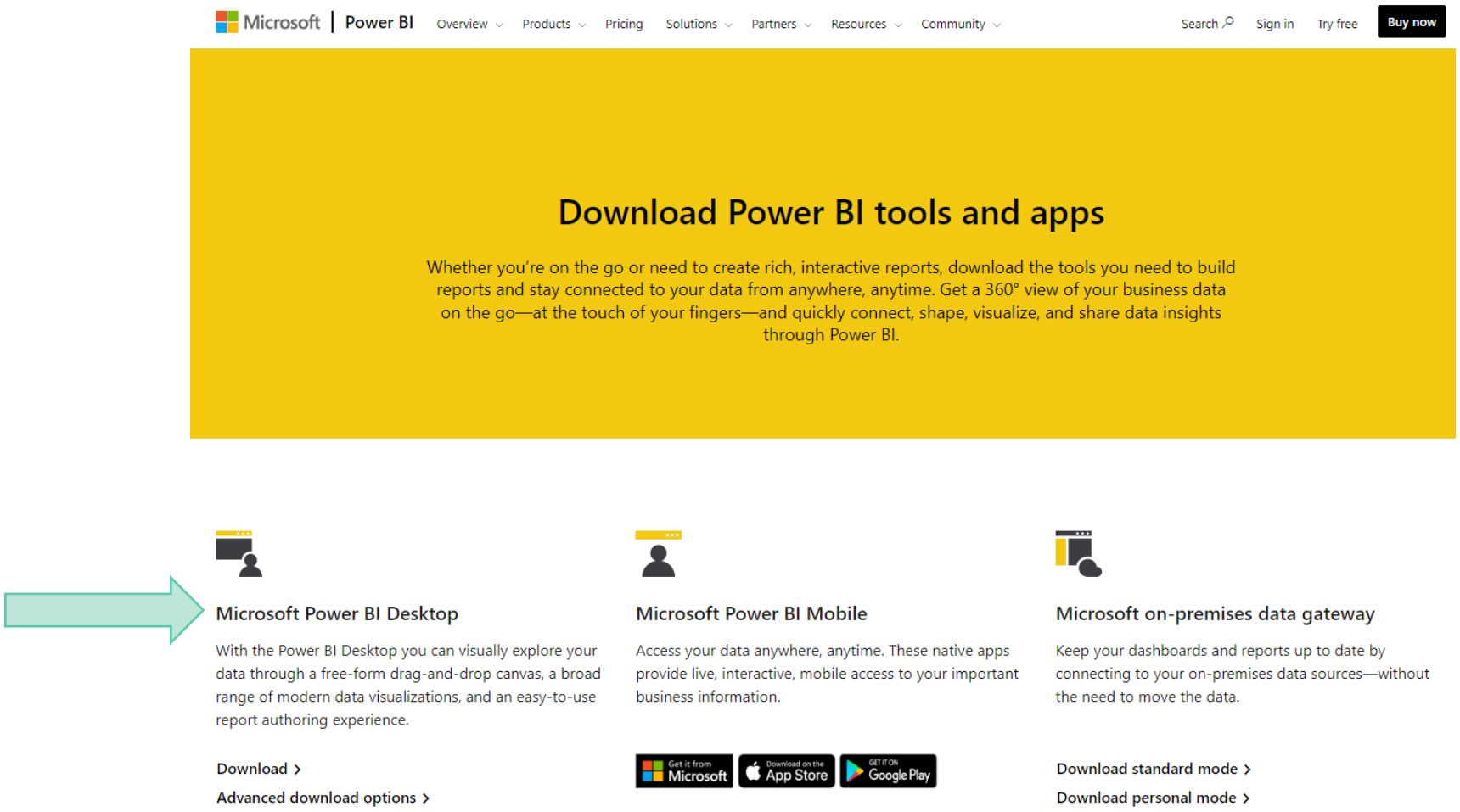
- Microsoft Power BI is a tool that converts our data into interactive insights.
- Using Power BI we can easily connect various data sources, create dashboards and share it with anyone
- Power BI is simple
- We can create visualizations very fast
- It is very comprehensive, it has got multiple options for handling data and customizing reports.

Elements of Power BI

- Power BI Desktop – Create your reports here
- Power BI service – Upload and View here
- Power BI Mobile – Can also be accessed on Mobile

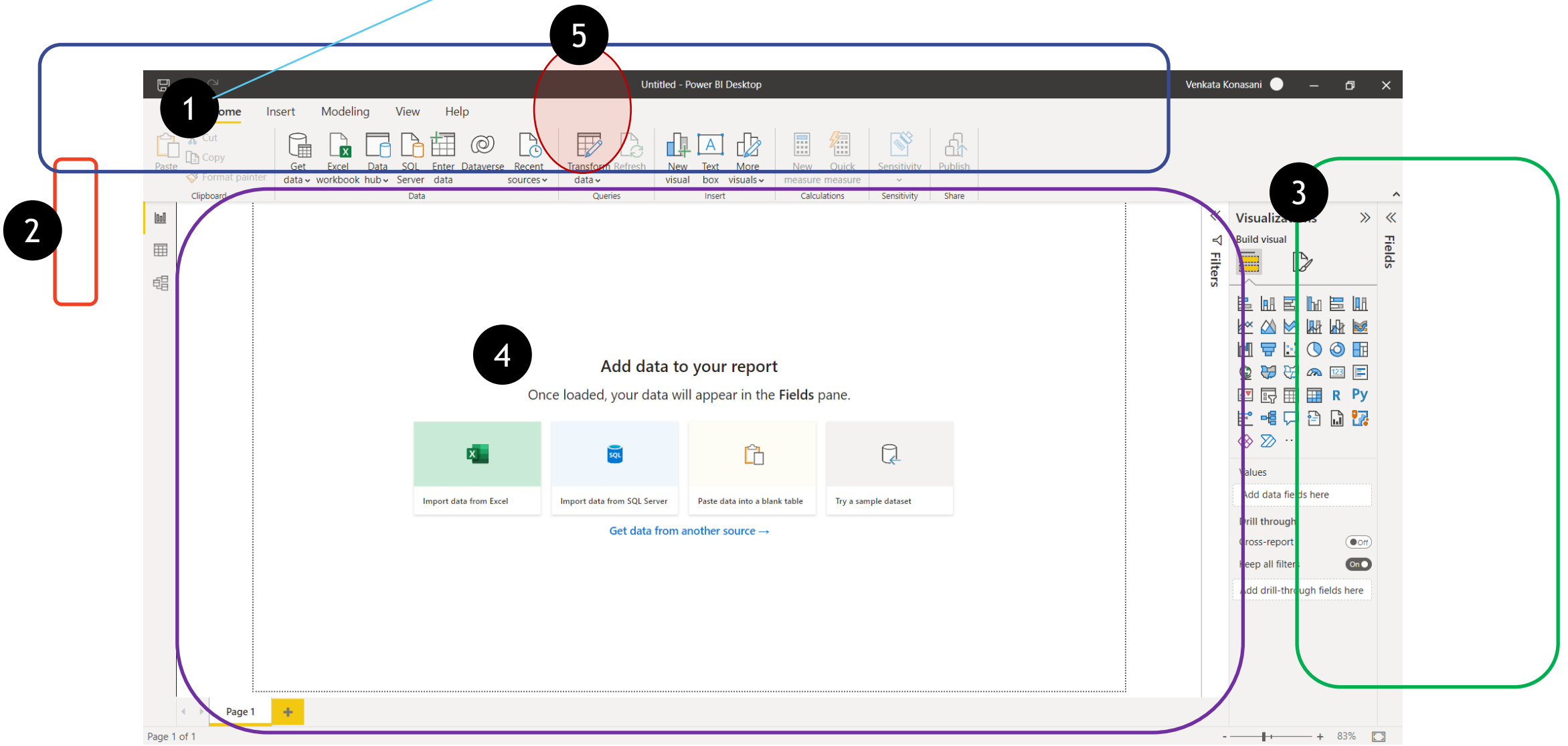
- Our course is mainly on the Power BI Desktop

Download and Install Power BI

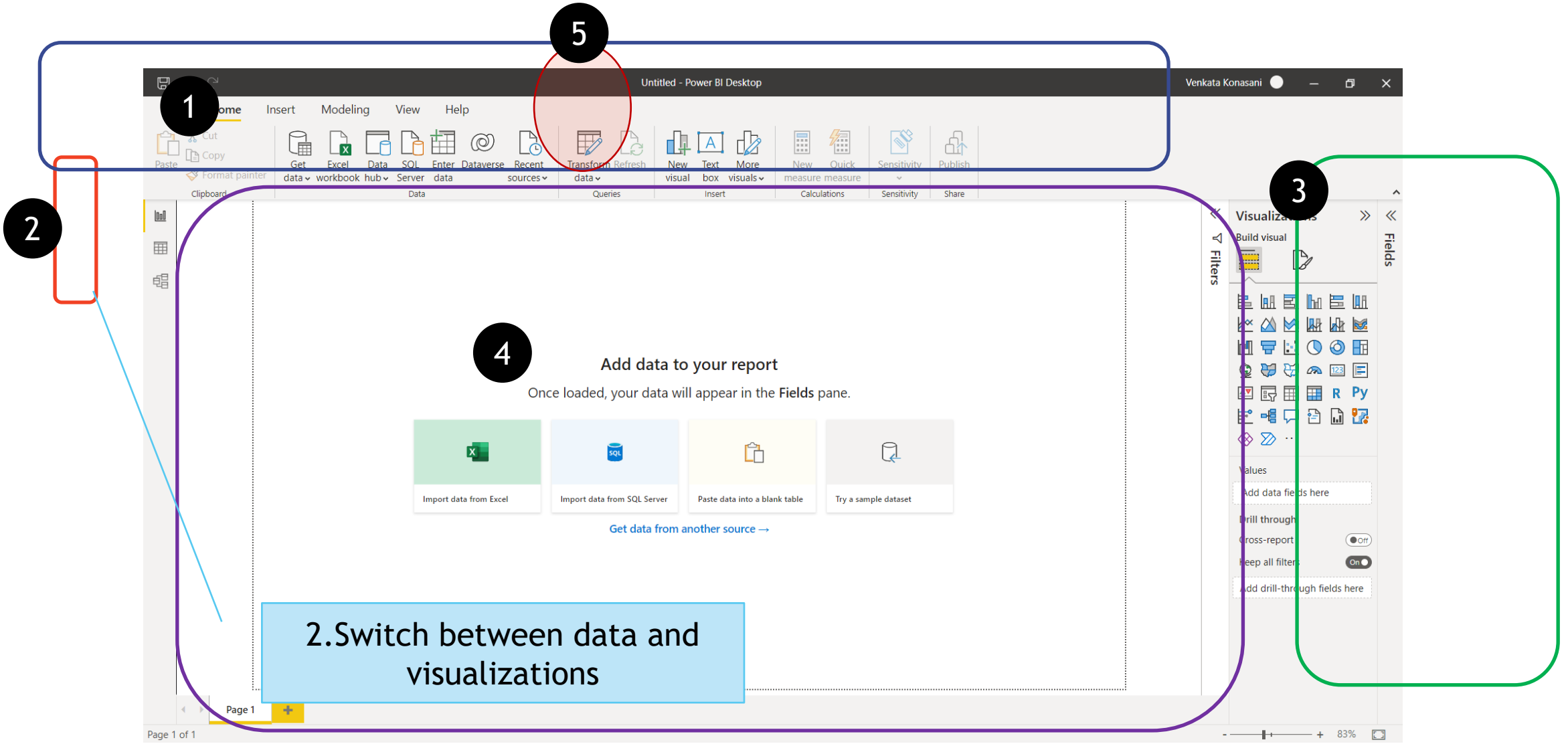


User Interface

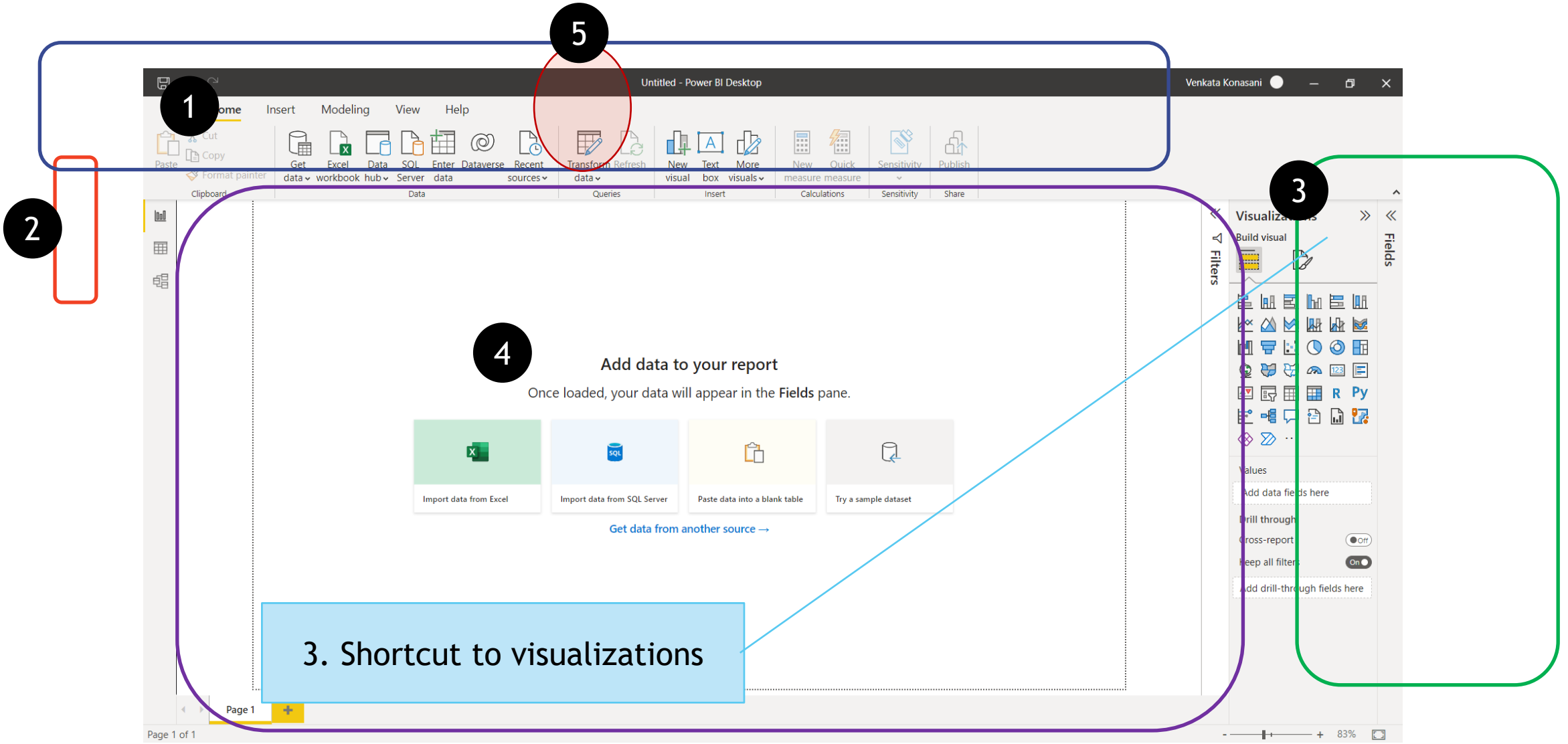
1. Ribbon



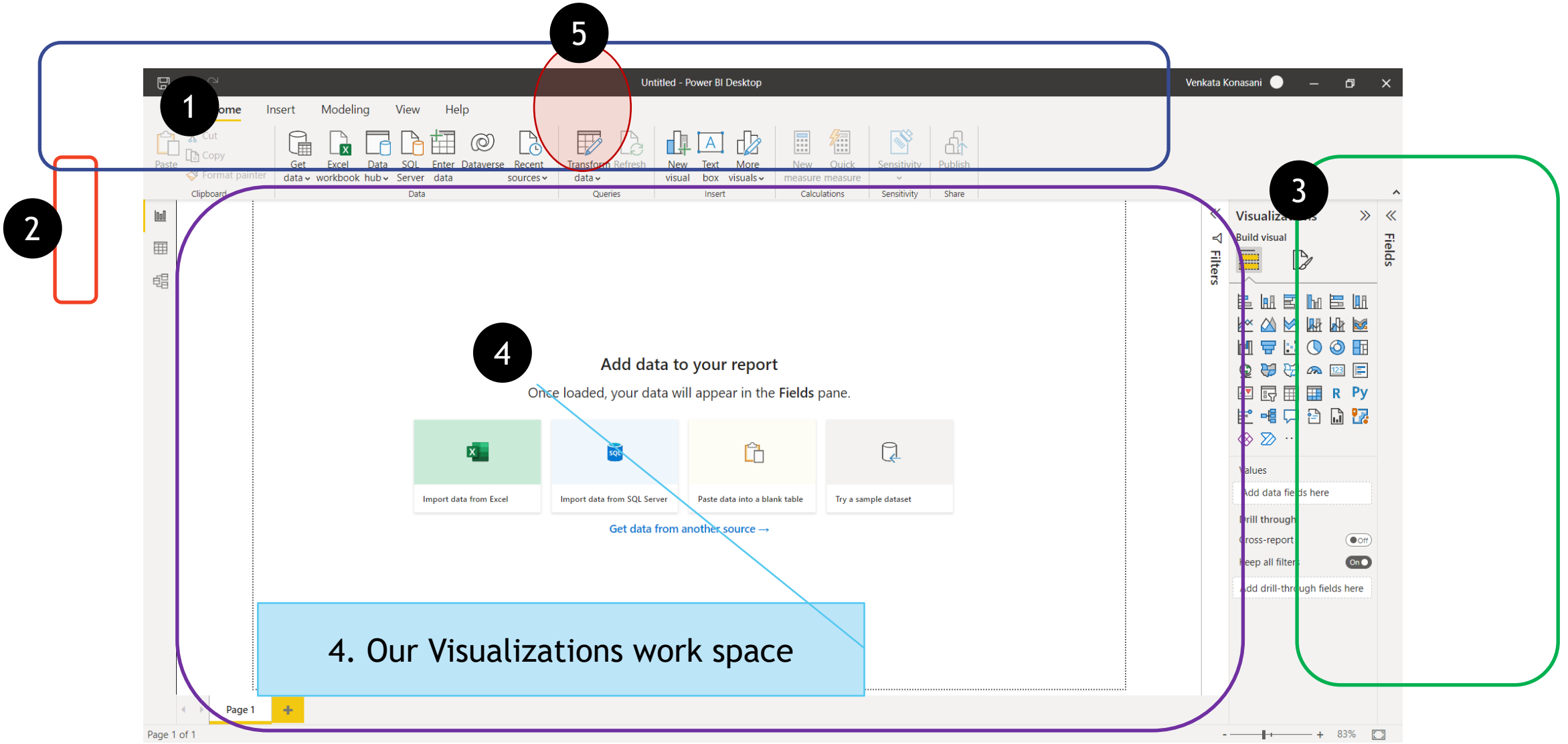
User Interface



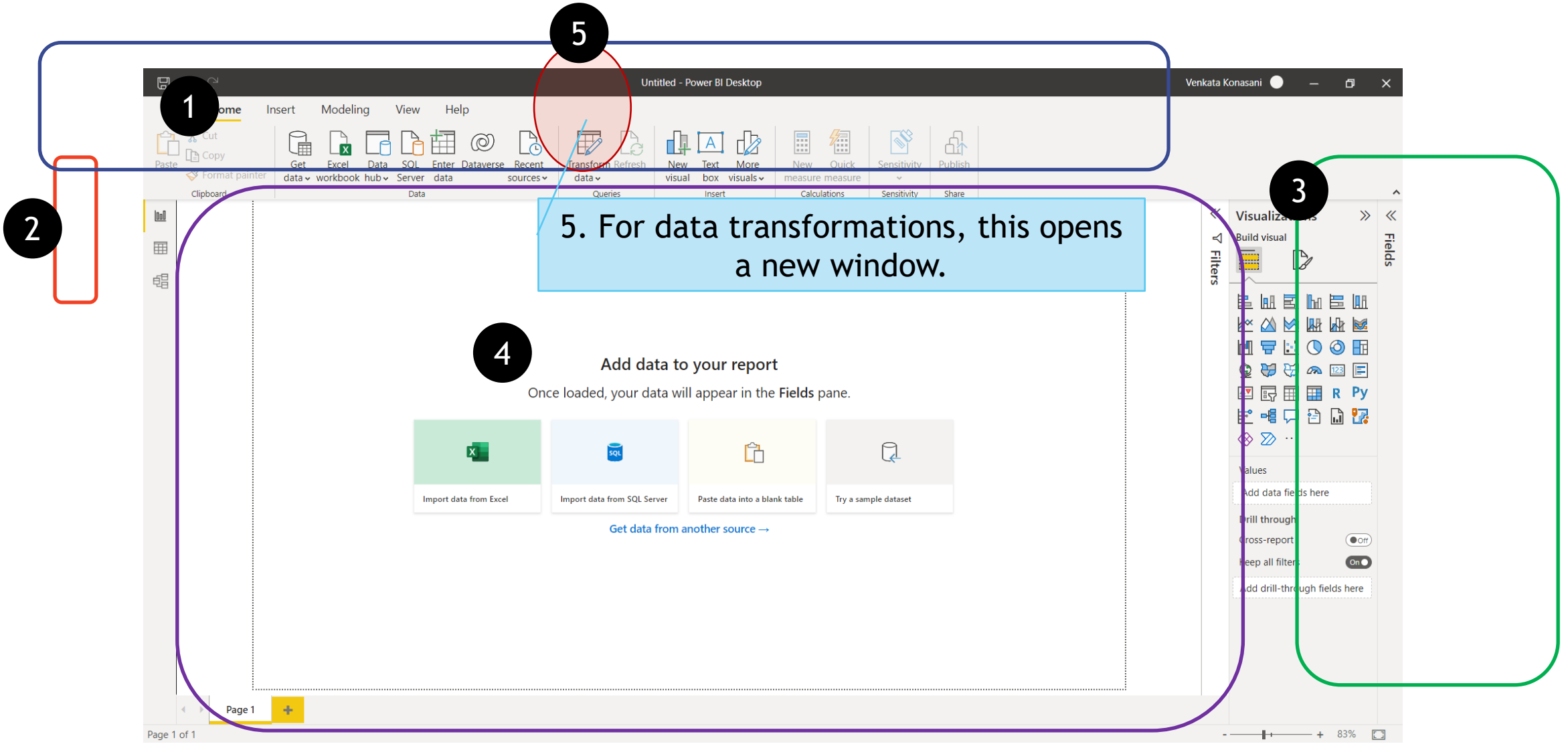
User Interface



User Interface



User Interface



The main steps in Power BI

1. **Load the Data** – From various sources. No need to pre-process
2. **Transform and Model the data** – Clean and Pre-process the data.
3. **Create Visualizations** – Create interactive visualizations
4. **Publish and share the reports** – Publish them on the server and share it with the world

Before you start .....

- You can NOT create a good BI report without understanding the underline business.
- While working on BI projects or any other Data science projects in general, focus on understanding the business problem, objective, and background before you start the analysis.
- Data visualization is NOT about creating attractive dashboards; it's about coming up with valuable insights that are not easy to extract from raw data.

Case Study : Healthcare

Stroke and Risk Factors

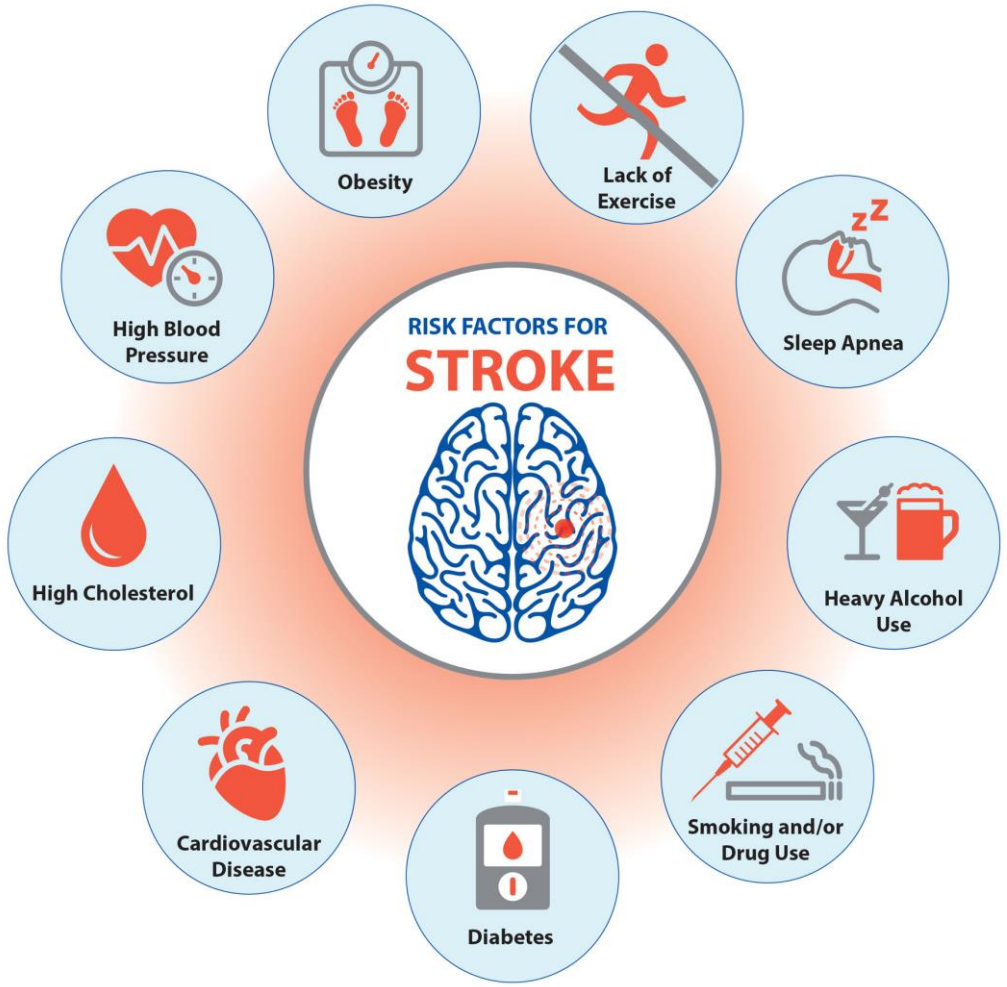
Stroke Case study

Step-1 : Understand the Problem Statement

Problem Statement

What are the leading factors causing Stroke?

- According to the World Health Organization (WHO) stroke is the 2nd leading cause of death globally. Responsible for approximately 11% of total deaths.
- We need to analyse whether the patient is likely to get stroke based on the input parameters like gender, age, various diseases, and smoking status.



What is Stroke?

An ischemic stroke occurs when the blood supply to part of the brain is interrupted or reduced, preventing brain tissue from getting oxygen and nutrients. Brain cells begin to die in minutes.

What are the symptoms of Stroke? *-- Trouble speaking and understanding what others are saying. You may experience confusion, slur words or have difficulty understanding speech. -- Paralysis or numbness of the face, arm or leg. You may develop sudden numbness, weakness or paralysis in the face, arm or leg. This often affects just one side of the body. Try to raise both your arms over your head at the same time. If one arm begins to fall, you may be having a stroke. Also, one side of your mouth may droop when you try to smile. -- Problems seeing in one or both eyes. You may suddenly have blurred or blackened vision in one or both eyes, or you may see double. -- Headache. A sudden, severe headache, which may be accompanied by vomiting, dizziness or altered consciousness, may indicate that you're having a stroke. -- Trouble walking. You may stumble or lose your balance. You may also have sudden dizziness or a loss of coordination.*

When to see a doctor? *Think "**FAST**" and do the following:*
*-- **F**ace. Ask the person to smile. Does one side of the face droop? -- **A**rms. Ask the person to raise both arms. Does one arm drift downward? Or is one arm unable to rise? -- **S**peech. Ask the person to repeat a simple phrase. Is his or her speech slurred or strange? -- **T**ime. If you observe any of these signs, call 911 or emergency medical help immediately.*
Source: https://www.mayoclinic.org/diseases-conditions/stroke/symptoms-causes/syc-20350113

The dataset information

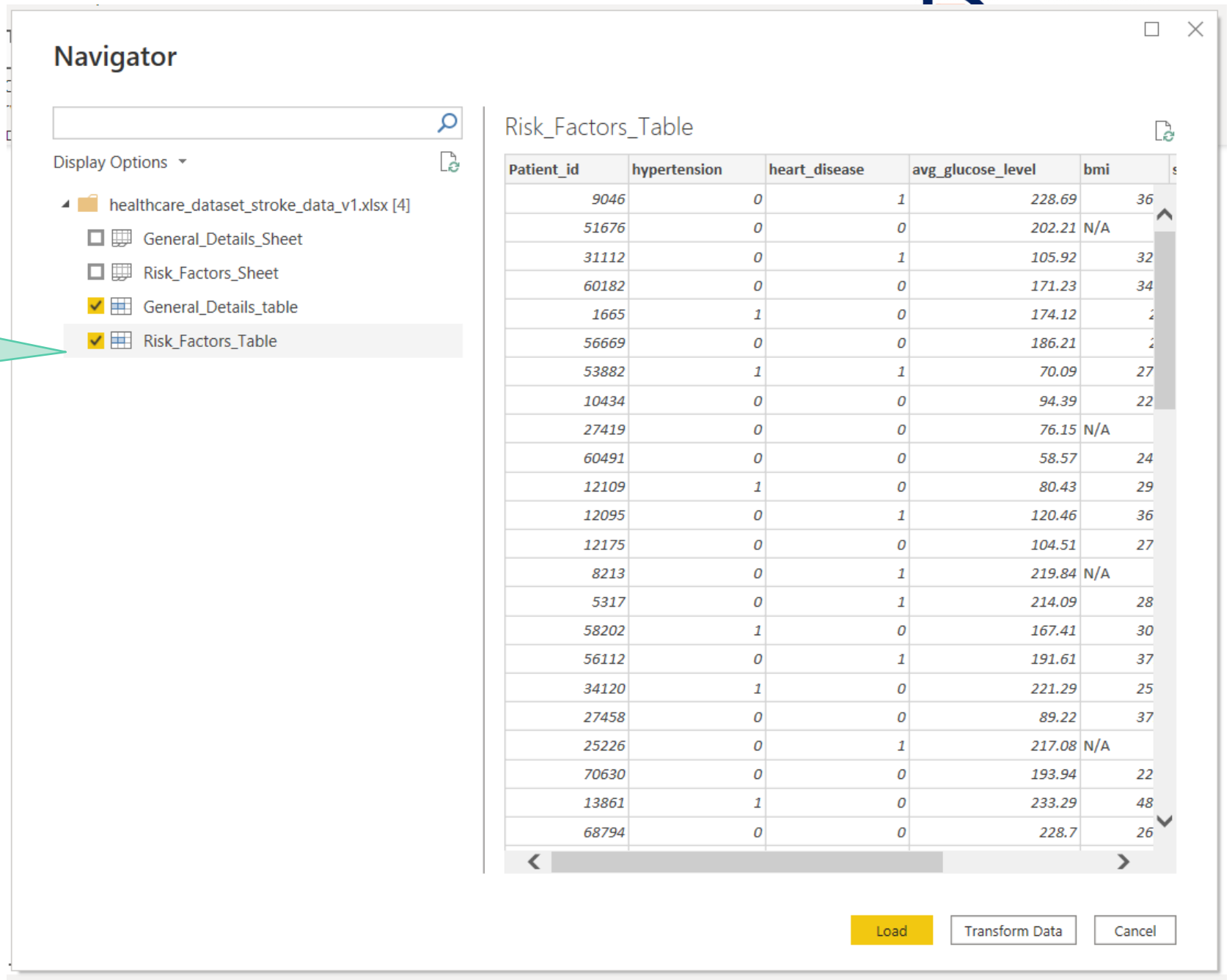
- **The risk factors include but not limited to following:** -- Overweight -- Sedentary life -- Binge Drinking -- Diabetes -- Smoking -- High blood pressure -- High cholesterol -- Family history of stroke -- Cardiovascular diseases -- Age - people above age 55 are at higher risk -- Gender - men are at high risk of stroke than women
- In our dataset we have following variables relating to risk factors: Age, Gender, Hypertension (BP), Heart Disease (Cardiovascular disease), work type (sedentary lifestyle??), Glucose Level (Diabetes), bmi (overweight and sedentary lifestyle), and smoking. Overall, our dataset covers major risk factors which is a good sign.

Stroke Case study

Step-2: Load the Data and get the basic details

Get the data

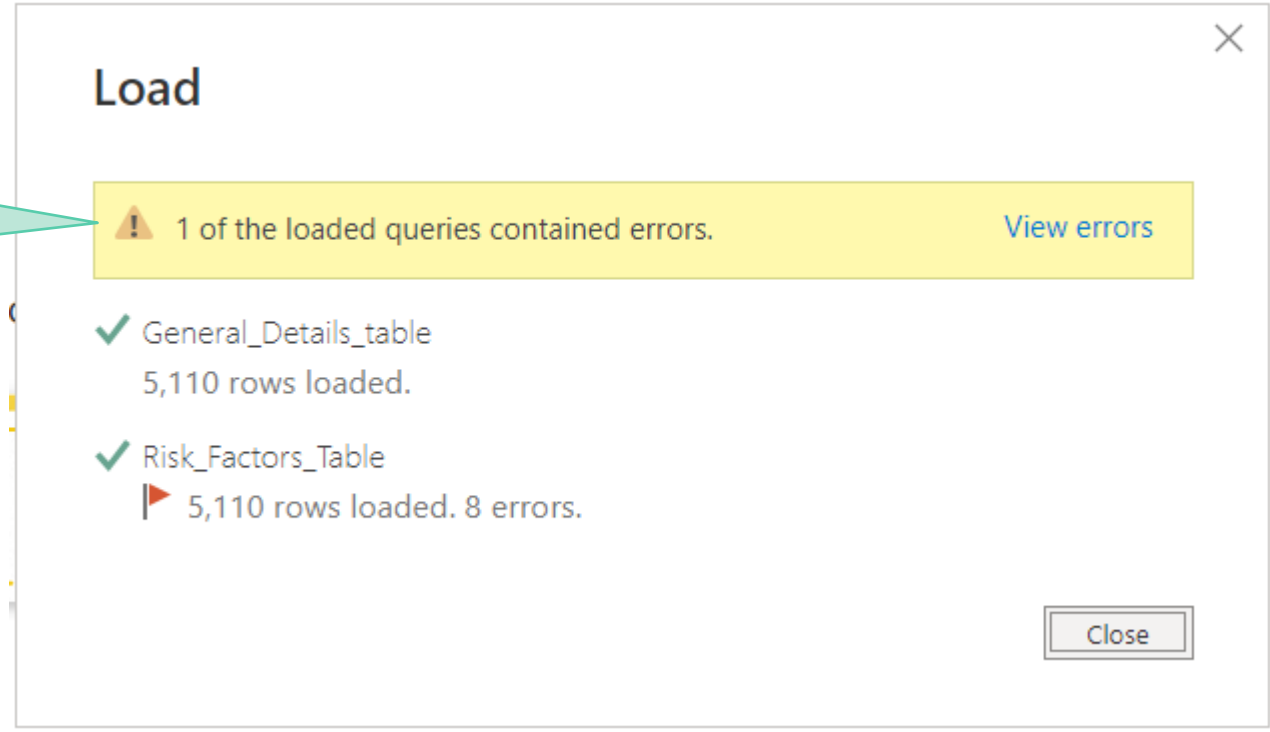
Load the tables, ignore the sheets



Patient_id	hypertension	heart_disease	avg_glucose_level	bmi
9046	0	1	228.69	36
51676	0	0	202.21	N/A
31112	0	1	105.92	32
60182	0	0	171.23	34
1665	1	0	174.12	
56669	0	0	186.21	
53882	1	1	70.09	27
10434	0	0	94.39	22
27419	0	0	76.15	N/A
60491	0	0	58.57	24
12109	1	0	80.43	29
12095	0	1	120.46	36
12175	0	0	104.51	27
8213	0	1	219.84	N/A
5317	0	1	214.09	28
58202	1	0	167.41	30
56112	0	1	191.61	37
34120	1	0	221.29	25
27458	0	0	89.22	37
25226	0	1	217.08	N/A
70630	0	0	193.94	22
13861	1	0	233.29	48
68794	0	0	228.7	26

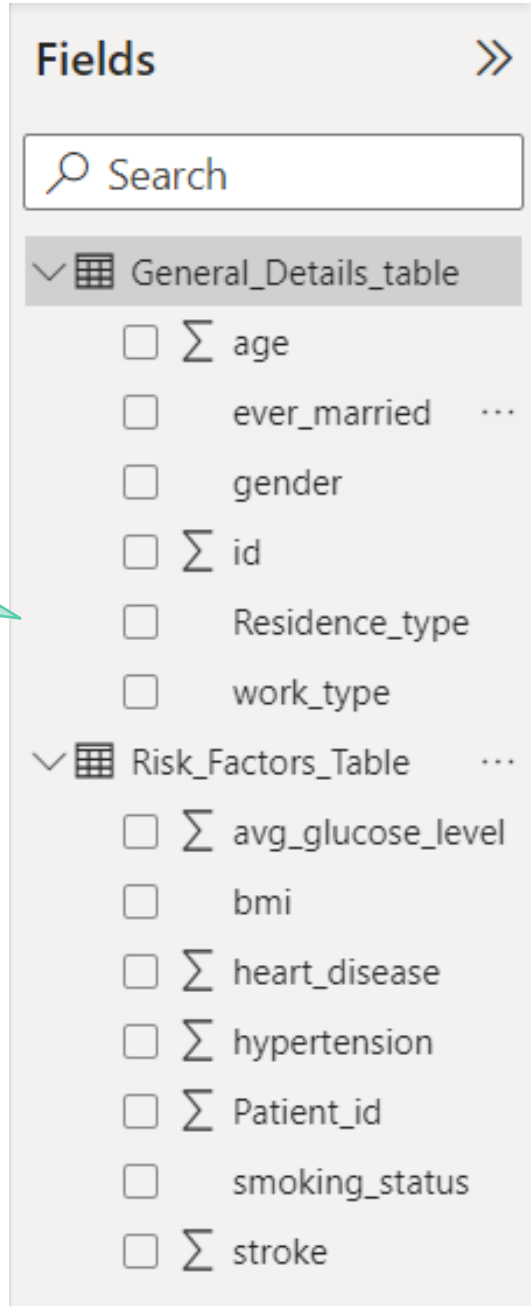
Getting the data

Errors can be handled later



Fields

- Have a quick look at the fields
- Are the field types correct?
- We can change the column types in the data transformation phase
- Look at the filed icons

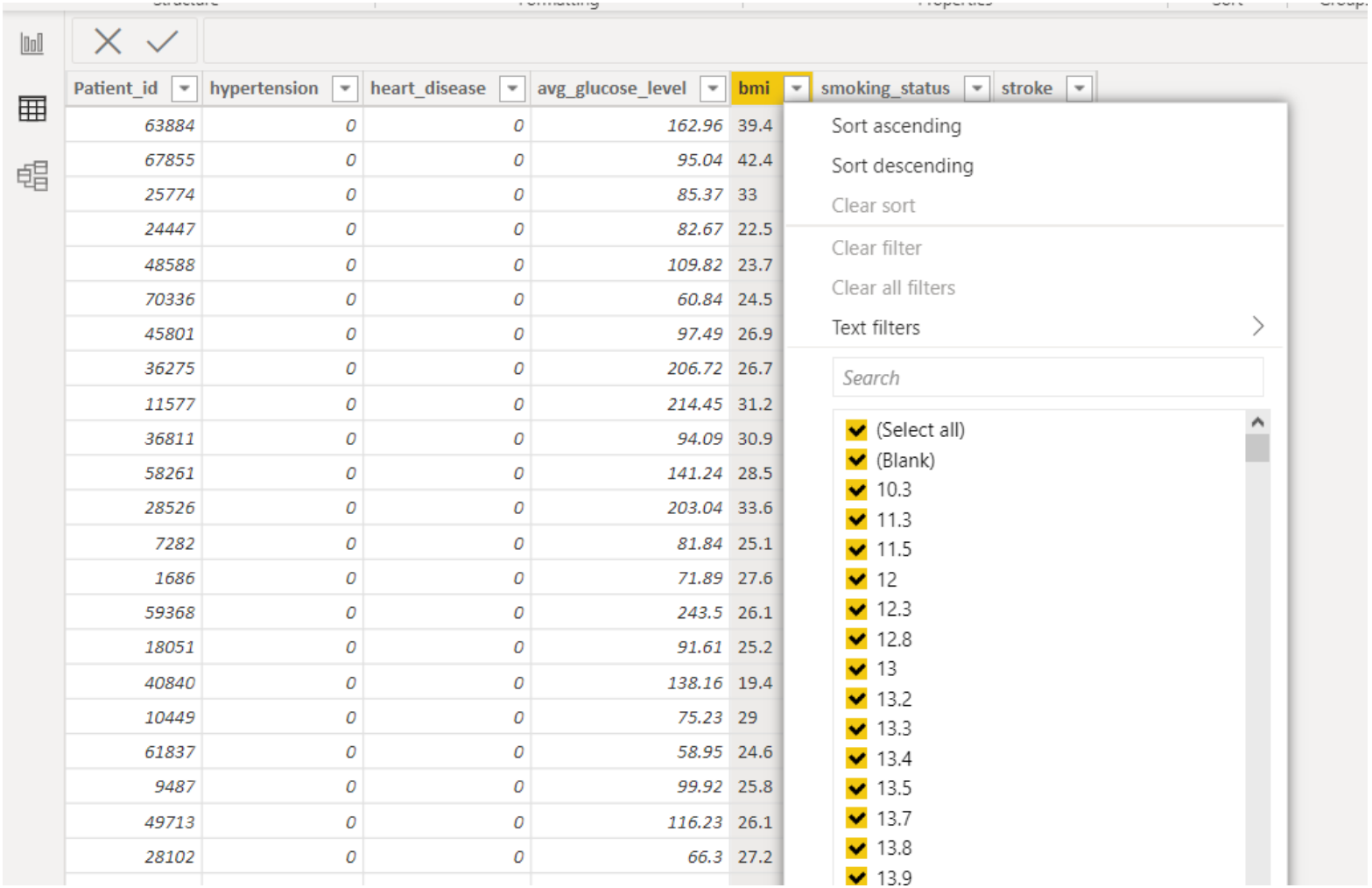


Have a Look at the data

id	gender	age	ever_married	work_type	Residence_type
60182	Female	49	Yes	WT -Private	Urban
60491	Female	78	Yes	WT -Private	Urban
12175	Female	54	Yes	WT -Private	Urban
5317	Female	79	Yes	WT -Private	Urban
62602	Female	49	Yes	WT -Private	Urban
1845	Female	63	Yes	WT -Private	Urban
47472	Female	58	Yes	WT -Private	Urban
17004	Female	70	Yes	WT -Private	Urban
71673	Female	79	Yes	WT -Private	Urban
45805	Female	51	Yes	WT -Private	Urban
28291	Female	79	Yes	WT -Private	Urban
5563	Female	77	Yes	WT -Private	Urban
72918	Female	53	Yes	WT -Private	Urban
14164	Female	72	Yes	WT -Private	Urban
70943	Female	80	Yes	WT -Private	Urban
11762	Female	76	Yes	WT -Private	Urban
8045	Female	74	Yes	WT -Private	Urban
17308	Female	72	Yes	WT -Private	Urban

Patient_id	hypertension	heart_disease	avg_glucose_level	bmi	smoking_status	stroke
63884	0	0	162.96	39.4	never smoked	0
67855	0	0	95.04	42.4	never smoked	0
25774	0	0	85.37	33	never smoked	0
24447	0	0	82.67	22.5	never smoked	0
48588	0	0	109.82	23.7	never smoked	0
70336	0	0	60.84	24.5	never smoked	0
45801	0	0	97.49	26.9	never smoked	0
36275	0	0	206.72	26.7	never smoked	0
11577	0	0	214.45	31.2	never smoked	0
36811	0	0	94.09	30.9	never smoked	0
58261	0	0	141.24	28.5	never smoked	0
28526	0	0	203.04	33.6	never smoked	0
7282	0	0	81.84	25.1	never smoked	0
1686	0	0	71.89	27.6	never smoked	0
59368	0	0	243.5	26.1	never smoked	0
18051	0	0	91.61	25.2	never smoked	0
40840	0	0	138.16	19.4	never smoked	0
10449	0	0	75.23	29	never smoked	0
61837	0	0	58.95	24.6	never smoked	0
9487	0	0	99.92	25.8	never smoked	0
49713	0	0	116.23	26.1	never smoked	0
28102	0	0	66.3	27.2	never smoked	0
62608	0	0	136.8	37.3	never smoked	0
40670	0	0	96.57	34.1	never smoked	0
4630	0	0	66.42	23.6	never smoked	0

Have a Look at the data



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10449	0	0	75.23	29		
61837	0	0	58.95	24.6		
9487	0	0	99.92	25.8		
49713	0	0	116.23	26.1		
28102	0	0	66.3	27.2		

Sort ascending
Sort descending
Clear sort
Clear filter
Clear all filters
Text filters
Search
(Select all)
(Blank)
10.3
11.3
11.5
12
12.3
12.8
13
13.2
13.3
13.4
13.5
13.7
13.8
13.9

Step-3: Transform the data; Prepare it for analysis

Coming up ..