

PowerBI Introduction

Aggie Data Science Club



To get started:



1. Download the data and slides from Discord or Github
2. Go to this link: <https://app.powerbi.com>
3. Make an account with your TAMU email

What is Business Analytics?



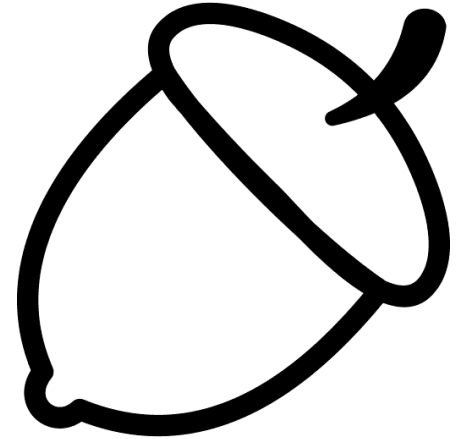
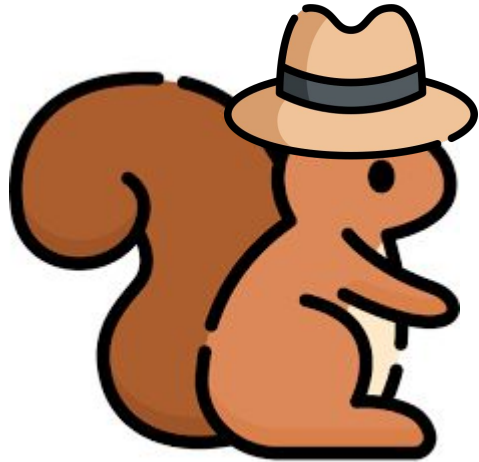
- ***Extract insights!***
- Facilitate efficient data collection, analysis, and presentation in *real-time*
- Empower enterprises to identify trends/patterns in vast datasets and create new business analytics models...
- Similar to data science, right?
 - Same goal but different methods
 - Less coding, larger scope, more attune to domain problems



Modern Tools

- QlikView
- Splunk
- Tableau
- Excel
- PowerBI
- Apache Spark

What is PowerBI?



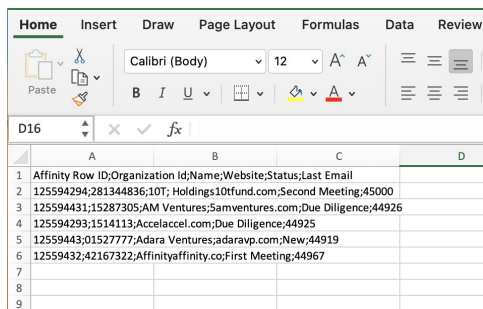
What is PowerBI?



Home Insert Draw Page Layout Formulas Data Review				
Paste		Calibri (Body)	12	A [^] A ^v
		B <i>I</i> <u>U</u>		
D16				
	A	B	C	D
1	Affinity Row ID;Organization Id;Name;Website;Status;Last Email			
2	125594294;281344836;10T; Holdings10tfund.com;Second Meeting;45000			
3	125594431;15287305;AM Ventures;Samventures.com;Due Diligence;44926			
4	125594293;1514113;Accelaccel.com;Due Diligence;44925			
5	12559443;01527777;Adara Ventures;adaravp.com;New;44919			
6	12559432;42167322;Affinityaffinity.co;First Meeting;44967			
7				
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What is PowerBI?

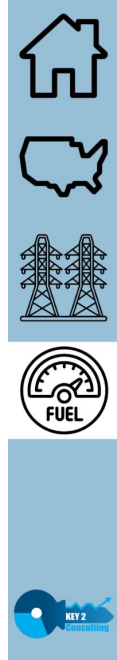
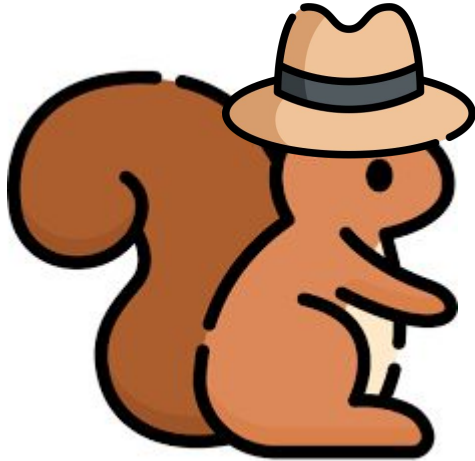


The image shows a screenshot of the Microsoft Excel ribbon with the 'Home' tab selected. Below the ribbon, a data table is visible with columns A, B, C, and D. The data in the table is as follows:

	A	B	C	D
1	Affinity Row ID;Organization Id;Name;Website;Status;Last Email			
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8				
9				



What is PowerBI?



Generation by Fuel Type

Most Green States Least Green States Reset

Top 10 States By Average Annual Generation (GWh)

State	GWh	By Year
Florida	317,177	
Washington	174,140	
Alabama	133,492	
Michigan	125,594	
North Carolina	119,828	
Georgia	116,480	
Indiana	108,264	
California	108,104	
Arizona	103,160	
Virginia	100,317	
Total	1,406,556	

Generation in GWh by Fuel Type and Fuel



Fuel Slicers Selected

Selected Fuel Type Selected Fuel
ALL ALL

Fuel

All

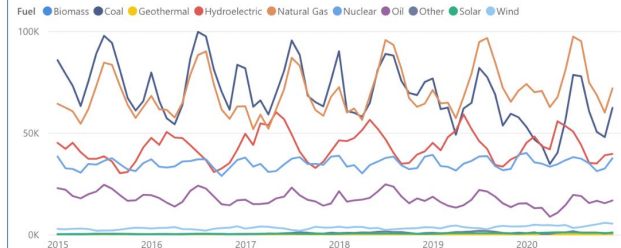
Year

2015 2020

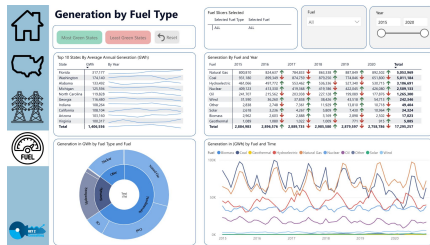
Generation By Fuel and Year

Fuel	2015	2016	2017	2018	2019	2020	Total
Natural Gas	800,810	824,637	784,833	863,338	887,849	892,502	5,053,969
Coal	931,180	899,349	874,759	879,250	774,846	651,800	5,011,184
Hydroelectric	461,066	497,772	553,462	536,336	527,340	530,715	3,106,691
Nuclear	409,123	413,330	419,368	419,186	422,045	426,080	2,509,133
Oil	241,707	215,562	203,938	227,128	199,089	177,876	1,265,300
Wind	31,590	36,260	37,838	38,426	43,518	54,713	242,346
Other	2,838	2,748	7,361	11,929	13,810	10,718	49,404
Solar	2,618	3,236	4,267	5,809	7,430	10,964	34,324
Biomass	2,962	2,603	2,888	3,169	2,898	2,502	17,023
Geothermal	1,089	1,080	1,022	1,009	771	915	5,885
Total	2,884,983	2,896,576	2,889,735	2,985,580	2,879,597	2,758,786	17,295,257

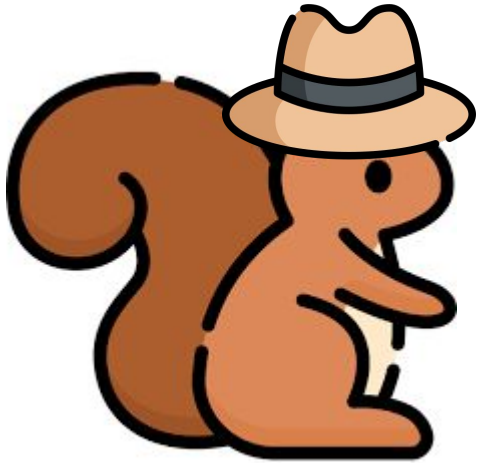
Generation in (GWh) by Fuel and Time



What is PowerBI?



What is PowerBI?





Tutorial

1. Sign up for free trial
2. Download the application (optional)
 - a. More services
3. Load data
 - a. Charts
 - b. Getting count on a column
4. Build visualizations
5. Q/A with data
6. Adding pages
7. Publishing



The Scenario

Company Scenario:

Welcome to the **Pandas & Pies Brokerage**, a distinguished real estate company nestled in the heart of Texas, focusing on College Station and Bryan. Established in 2004, the **Pandas & Pies Brokerage** has rapidly grown into a trusted name in the real estate market. Over the years, we've catered to a diverse clientele, ranging from college students seeking affordable housing to investors looking for property deals.

As the global economy faced a recession in recent years, Brokerage observed a fluctuating trend in housing demands, influenced by economic uncertainties and changing demographics. Despite this, the recession has opened up unique investment opportunities, and our goal is to capitalize on them to increase brand awareness and solidify our market position.

Task:

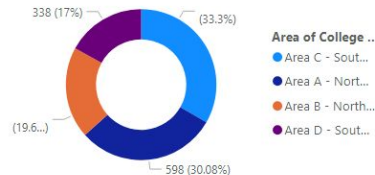
Using a dataset with housing data from College Station and Bryan, your role is to analyze, interpret, and present findings that will guide our investment decisions. You will address five key questions, each requiring a unique blend of data analysis, visualization, and predictive modeling.



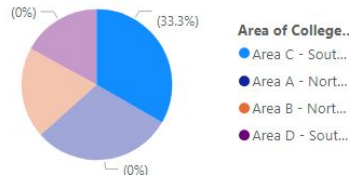
Question 1: What is the distribution of areas to live in?

- Look at the **Area of College Station** column
- How can you show the distribution of values in this column?

Count of Area of College Station
BY AREA OF COLLEGE STATION



Count of Area of College Station
BY AREA OF COLLEGE STATION



Count of Area of College Station

BY AREA OF COLLEGE STATION

Area of College Station	Count of Area of College Station
Area A - North or Rock Prairie Rd. and West of Texas Ave.	598
Area B - North of Bird Pond Rd and East of Texas Ave.	390
Area C - South of Rock Prairie Rd. and West of Hwy. 6	662
Area D - South of Bird Pond Rd. and East of Hwy. 6	338
Total	1988



Question 2: Who are the renters?

As a brokerage, we want to increase the amount of lease agreements we make to earn consistent commissions.

- **Based on our need for more renters, what demographic or types of living should we target?**
- Primary column of interest: **Own or rent** column
- Compare with other columns like “Age” or “Years have you lived in College Station”



Question 3: What should we focus on?

Based on your findings from the previous question, you should have a good idea of the demographic that sign lease agreements. Because we are trying to solidify our market position, we want to manage properties that have certain favored characteristics and we need to determine which ones to prioritize.

- **What do renters find important?**
- Filter by **Own or rent** column
- Analyze the **Importance of X** columns and find the prevailing sentiments



Rubric

- Presentation (flow, timing of 5 minute) - 10 points
- Communication (public speaking) -10 points
- Catering to stakeholders (understandable to audience) -10 points
- Answers to Questions (correctness) -5 points
- Explanations to Questions (evidence, more important)- 25 points
- Use of PowerBI (dashboard, style) - 40 points