



Introductory Accounting Data Analytics Projects

AccountingIsAnalytics.com



Authored by:
Wendy Tietz
Tracie Miller
Jennifer Cainas



1

AccountingIsAnalytics.com

- Projects are free for instructors and students
- Submit requests for instructor guides/solutions
- Use your school email address
- We send out instructor guides about once a week
- Check your spam

2

Data analytics projects

3

Data analytics projects on **AccountingIsAnalytics.com**

Mini-dashboards ① Web-based; no software

4

Data analytics projects on **AccountingIsAnalytics.com**

Pre-built dashboards ② Excel, Power BI, or Tableau

Mini-dashboards ① Web-based; no software

5

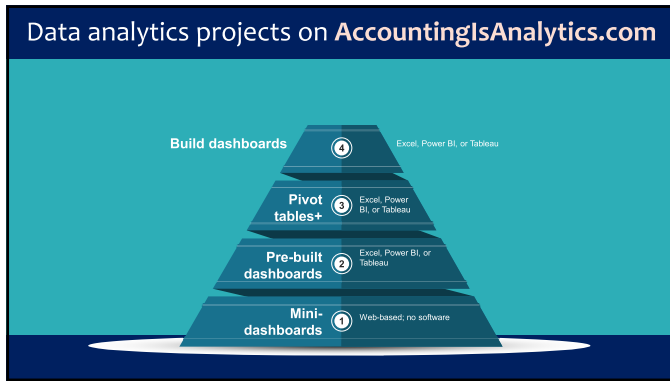
Data analytics projects on **AccountingIsAnalytics.com**

Pivot tables+ ③ Excel, Power BI, or Tableau

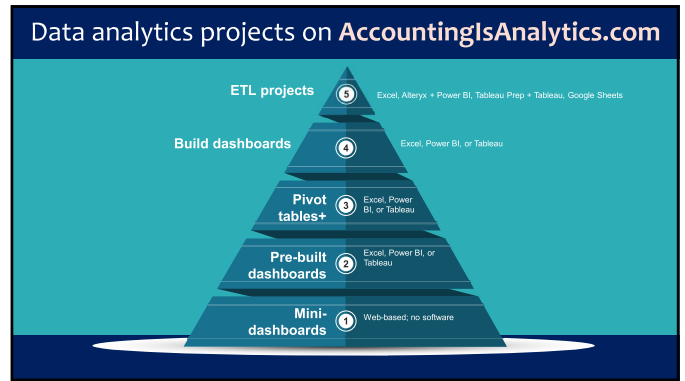
Pre-built dashboards ② Excel, Power BI, or Tableau

Mini-dashboards ① Web-based; no software

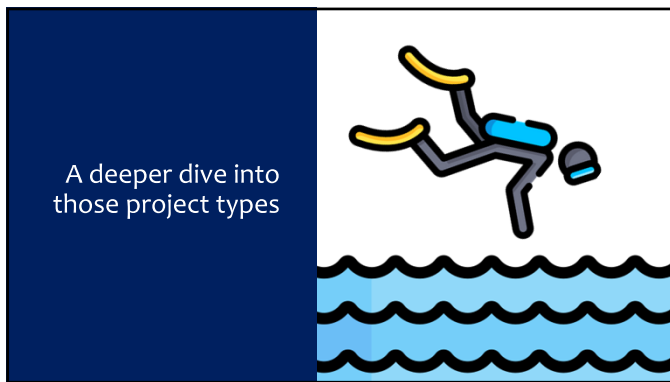
6



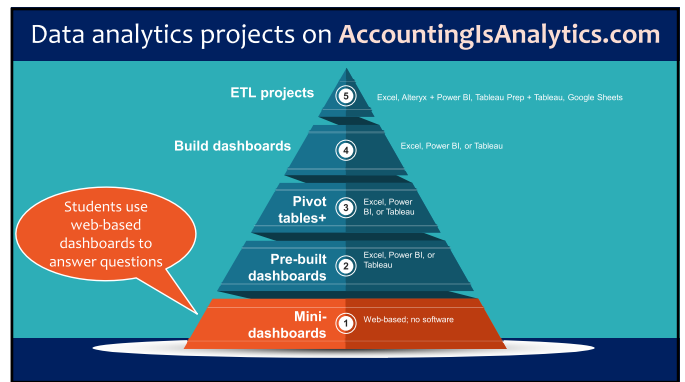
7



8



9



10

1. Mini-dashboards

- Quick analytics assignments
- No software needed; web browser only
- Some question starters provided
- Can add your own questions

11



12

Sample questions for job costing mini-dashboard

1. What is the gross profit generated by the <insert product type here> product group in all plants?
2. What is the total sales revenue generated by <insert product ID here> in the <insert plant location here> plant?
3. How many <insert product ID here> models were sold by the <insert plant location here> location?
4. What is the gross profit of the <insert product type here> product group in the <insert plant location here> plant?

13

Accounts receivable analysis

Click on each of the following charts to choose the relevant options

Outstanding invoices by past due category

(Hold CTRL key to select more than one category at the same time)

Region	Restaurant Type
1: \$230,271	Carryout only: 429,968
2: \$236,898	Dine in: 431,452
3: \$246,282	Fast food: 504,009
4: \$296,302	
5: \$121,591	

Estimated allowance for uncollectible accounts (Based on selected past due category, region, and restaurant type): \$26,093

You can refresh your browser to reset all filters.

14

Financial Statement Analysis

Company: Cardinal Chemical Co. - CCI

Ability to pay current liabilities

Current ratio: 2018-2022 line chart showing an upward trend.

Quick ratio: 2018-2022 line chart showing an upward trend.

Overall ability to pay debt

Debt ratio: 2018-2022 bar chart showing a downward trend.

Times-interest-earned: 2018-2022 bar chart showing an upward trend.

15

Data analytics projects on AccountingIsAnalytics.com

16

2. Pre-built dashboards

1. Use real software
2. Excel, Power BI, Tableau, or Google Sheets
3. Student opens the pre-built dashboard in the software and uses filters/slicers to analyze
4. Instructions for obtaining software included

17

2. Pre-built dashboards

Sales revenue by division: \$76,700 Total Office supplies sales revenue

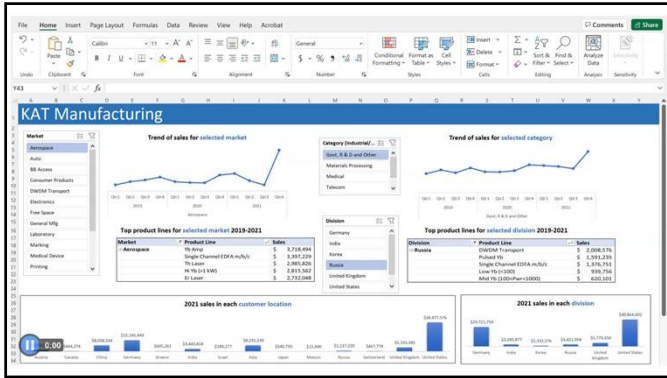
Sales revenue by region: North region had the most Office supplies sales, East region had the least Office supplies sales

Top 5 products sold in the Central region:

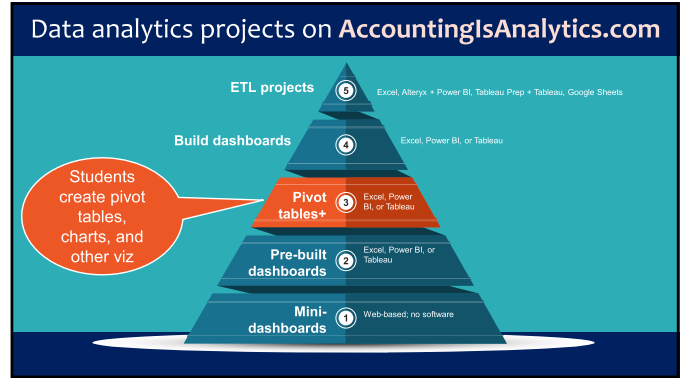
Product	Sales
TV and video	\$ 21,970
Cell phones	\$ 20,480
Computers	\$ 20,100
Printer	\$ 4,280
Camera and photo	\$ 2,870

Sales revenue by product in the Central region: Office supplies (\$20,000), Electronics (\$50,000)

18



19



20

3. Pivot tables+ projects

1. Use real software
2. Excel, Power BI, Tableau, or Google Sheets*
3. Showing an example of one set of projects here
4. Students learn to build **pivot tables, pivot charts, and more**

21

KAT Insurance facts

- Data set is based on real-life data from a national insurance company
- Data set contains more than 65,000 insurance sales records
- All data have been anonymized to preserve privacy
- One case for **Financial Accounting**, another for **Managerial Accounting**

22

Three software tools

Excel

Power BI

tableau

23

Step-by-step videos

Start by opening Excel workbook

Region	State	Salesperson	Insurance Type	Sales	Date of Sale	Invoice No	State Type
1	Southwest	AR	Frank	Auto	\$ 995.25	11/16/2017	H-2017-054995
2	Southwest	AR	Frank	Auto	\$ 691.93	10/13/2017	A-2017-050573
3	West	CA	Kellie	Auto	\$ 861.89	5/19/2017	A-2017-004390
4	Midwest	CO	Paul	Auto	\$ 447.15	12/21/2017	A-2017-050464
5	New England	CT	Crisy	Auto	\$ 845.98	11/17/2017	A-2017-054679
6	Southwest	FL	John	Auto	\$1,270.15	10/28/2017	H-2017-051576
7	Southwest	FL	John	Auto	\$ 782.20	8/26/2017	A-2017-041947
8	Southwest	AR	Frank	Disability	\$ 640.32	7/11/2017	D-2017-001300
9	West	AZ	Kellie	Disability	\$ 488.15	6/20/2017	D-2017-001008
10	Midwest	CO	Paul	Disability	\$ 327.04	4/12/2017	D-2017-018015
11	Northeast	DC	Matt	Disability	\$ 451.37	6/16/2017	D-2017-029374
12	Southwest	AL	John	Home	\$1,080.48	1/7/2017	H-2017-061177
13	New England	CT	Crisy	Home	\$ 682.19	2/15/2017	H-2017-008234
14	Northeast	DE	Fred	Home	\$ 591.66	3/16/2017	H-2017-006570
15	Northeast	DE	Fred	Home	\$1,065.46	12/13/2017	H-2017-044472
16	West	AZ	Kellie	Life	\$ 284.17	10/26/2017	L-2017-052739
17	West	AZ	Kellie	Life	\$ 211.20	8/16/2017	L-2017-038859
18	Northeast	DE	Fred	Life	\$ 229.31	1/17/2017	L-2017-002992
19	Southwest	FL	John	Life	\$ 153.46	12/25/2017	L-2017-009304
20	Southwest	FL	John	Life	\$ 153.46	12/25/2017	L-2017-009304

24

Step-by-step videos

Req 1: Find and correct errors

#1: Click on any cell in the data in the main worksheet

Region	State	Salesperson	Insurance Type	Sales	Date of Sale	Invoice No	State Type	
1	Southwest	AR	Frank	Auto	\$ 935.25	11/8/2017	A-2017-054995	AR-Auto
2	Southwest	AR	Frank	Auto	\$ 691.93	10/13/2017	A-2017-050573	AR-Auto
3	Southwest	AR	Frank	Auto	\$ 935.25	11/8/2017	A-2017-054995	AR-Auto
4	West	CA	Kellie	Auto	\$ 861.89	5/19/2017	A-2017-024590	CA-Auto
5	Midwest	CO	Paul	Auto	\$ 487.15	12/7/2017	A-2017-099864	CO-Auto
6	New England	CT	Crispy	Auto	\$ 845.98	12/17/2017	A-2017-056679	CT-Auto
7	Southwest	FL	John	Auto	\$1,270.15	1/28/2017	A-2017-015376	FL-Auto
8	Southwest	FL	John	Auto	\$ 782.20	8/26/2017	A-2017-011847	FL-Auto
9	Southwest	AR	Frank	Disability	\$ 680.12	7/11/2017	D-2017-033068	AR-Disability
10	West	AZ	Kellie	Disability	\$ 488.15	6/20/2017	D-2017-020104	AZ-Disability
11	Midwest	CO	Paul	Disability	\$ 337.04	4/12/2017	D-2017-018015	CO-Disability
12	Northeast							
13	Southwest							
14	New England							
15	Northeast							
16	Northeast							
17	West	AZ	Kellie	Life	\$ 284.17	10/26/2017	L-2017-052739	AZ-Life
18	West	AZ	Kellie	Life	\$ 213.20	8/8/2017	L-2017-038889	AZ-Life
19	Northeast	DE	Fred	Life	\$ 229.11	1/17/2017	L-2017-002192	DE-Life
20	Southwest	FL	John	Life	\$ 153.86	12/25/2017	L-2017-063304	FL-Life

25

Step-by-step videos

Req 1: Find and correct errors

#2: On the Insert ribbon, click on Pivot Table

Region	State	Salesperson	Insurance Type	Sales	Date of Sale	Invoice No	State Type	
13	Southwest	AL	John	Home	\$1,080.48	1/7/2017	H-2017-001177	AL-Home
14	New England	CT	Crispy	Home	\$ 662.19	2/16/2017	H-2017-088234	CT-Home
15	Northeast	DE	Fred	Home	\$ 591.06	2/6/2017	H-2017-086570	DE-Home
16	Northeast	DE	Fred	Home	\$1,065.46	12/13/2017	H-2017-064472	DE-Home
17	West	AZ	Kellie	Life	\$ 284.17	10/26/2017	L-2017-052739	AZ-Life
18	West	AZ	Kellie	Life	\$ 213.20	8/8/2017	L-2017-038889	AZ-Life
19	Northeast	DE	Fred	Life	\$ 229.11	1/17/2017	L-2017-002192	DE-Life
20	Southwest	FL	John	Life	\$ 153.86	12/25/2017	L-2017-063304	FL-Life

26

Step-by-step videos

Req 1: Find and correct errors

#3: Accept the defaults to insert the Pivot Table

Region	State	Salesperson	Insurance Type	Sales	Date of Sale	Invoice No	State Type	
13	Southwest	AL	John	Home	\$1,080.48	1/7/2017	H-2017-001177	AL-Home
14	New England	CT	Crispy	Home	\$ 662.19	2/16/2017	H-2017-088234	CT-Home
15	Northeast	DE	Fred	Home	\$ 591.06	2/6/2017	H-2017-086570	DE-Home
16	Northeast	DE	Fred	Home	\$1,065.46	12/13/2017	H-2017-064472	DE-Home
17	West	AZ	Kellie	Life	\$ 284.17	10/26/2017	L-2017-052739	AZ-Life
18	West	AZ	Kellie	Life	\$ 213.20	8/8/2017	L-2017-038889	AZ-Life
19	Northeast	DE	Fred	Life	\$ 229.11	1/17/2017	L-2017-002192	DE-Life
20	Southwest	FL	John	Life	\$ 153.86	12/25/2017	L-2017-063304	FL-Life

27

Requirements

Requirements for the Excel analysis

1. There are some typographical errors in the data set in the Region and Insurance Type fields. Find and correct these errors by using a pivot table.
2. Analyze insurance sales by state by using a pivot table. Rank the states from the highest total insurance sales to lowest total insurance sales. Sort the data by sales, from highest to lowest.
3. Analyze average insurance sales by state. Sort the state data by average policy amount, from highest to lowest.
4. Analyze insurance sales by region by creating a pivot table. Rank the regions from the highest total insurance sales to lowest total insurance sales. Sort the data by sales, from highest to lowest.
5. Analyze insurance sales by salesperson within each region by creating a pivot table.

28

Region	State	Salesperson	Insurance Type	Sales	Date of Sale	Invoice No	State Type	Variable Cost	Variable Percentage	Contribution Margin	Country
1	Midwest	TX	Tom	Auto	\$ 982.39	1/2/2017	A-2017-000118	TX-Auto			USA
2	Southwest	TN	Jennifer	Auto	\$ 573.74	1/1/2017	A-2017-000102	TN-Auto			USA
3	New England	CT	Crispy	Auto	\$ 414.25	1/7/2017	A-2017-000109	CT-Auto			USA
4	New England	MA	Crispy	Auto	\$ 845.42	1/2/2017	A-2017-000107	MA-Auto			USA
5	Southwest	GA	John	Auto	\$ 544.65	1/7/2017	A-2017-000208	GA-Auto			USA
6	West	UT	Kellie	Auto	\$ 633.93	1/2/2017	A-2017-000209	UT-Auto			USA
7	West	NV	Kellie	Auto	\$ 478.49	1/7/2017	A-2017-000208	NV-Auto			USA
8	West	WA	Peter	Auto	\$ 548.53	1/2/2017	A-2017-000209	WA-Auto			USA
9	North-Central	MO	Mario	Auto	\$ 420.11	1/1/2017	A-2017-000307	MO-Auto			USA
10	Southwest	MS	Frank	Auto	\$ 537.15	1/7/2017	A-2017-000401	MS-Auto			USA
11	North-Central	MI	Home	Auto	\$ 517.48	1/2/2017	A-2017-000406	MI-Auto			USA
12	New England	ME	Sara	Auto	\$ 450.21	1/7/2017	A-2017-000509	ME-Auto			USA
13	West	MT	Peter	Auto	\$ 537.96	1/2/2017	A-2017-000509	MT-Auto			USA
14	Northeast	DE	Fred	Auto	\$ 598.27	1/7/2017	A-2017-000601	DE-Auto			USA
15	New England	ME	Sara	Auto	\$ 542.13	1/2/2017	A-2017-000605	ME-Auto			USA
16	Southwest	TN	Jennifer	Auto	\$ 873.11	1/1/2017	A-2017-000708	TN-Auto			USA
17	Midwest	KS	Tom	Auto	\$ 544.36	1/7/2017	A-2017-000809	KS-Auto			USA
18	Northeast	OH	Mike	Auto	\$ 510.77	1/2/2017	A-2017-000906	OH-Auto			USA
19	New England	MA	Crispy	Auto	\$ 577.02	1/7/2017	A-2017-000909	MA-Auto			USA
20	Midwest	NE	Dave	Auto	\$ 1244.47	1/2/2017	A-2017-001007	NE-Auto			USA
21	Northwest	VA	Matt	Auto	\$ 1,091.07	1/7/2017	A-2017-001113	VA-Auto			USA
22	North-Central	WI	Mario	Auto	\$ 599.12	1/2/2017	A-2017-001114	WI-Auto			USA
23	North-Central	MI	Fred	Auto	\$ 875.64	1/1/2017	A-2017-001115	MI-Auto			USA
24	Southwest	FL	John	Auto	\$ 576.99	1/7/2017	A-2017-001117	FL-Auto			USA

29

Data analytics projects on AccountingIsAnalytics.com

Students create dashboards


30

4. Building dashboards projects


1. Use real software
2. Excel, Power BI, Tableau, or Google Sheets
3. Showing an example of one set of projects here

31


Four software tools




Excel



Google Sheets



Power BI



tableau

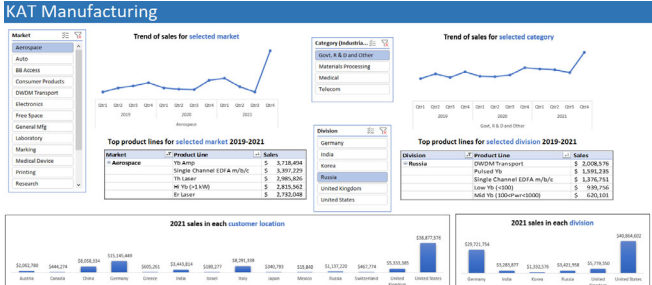
32

All interactive dashboard projects include

- Step-by-step tutorial videos
- Assumes no prior software knowledge
- Can be completed in 45 – 90 minutes

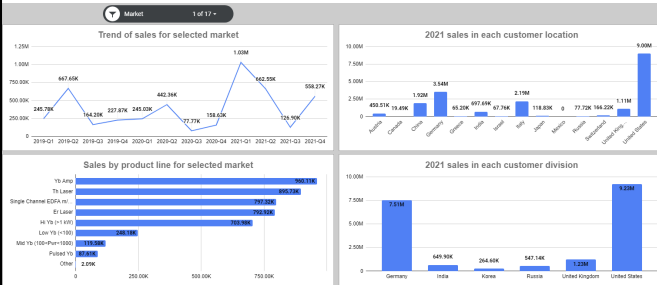
33

Excel interactive dashboard




34

Google Sheets interactive dashboard

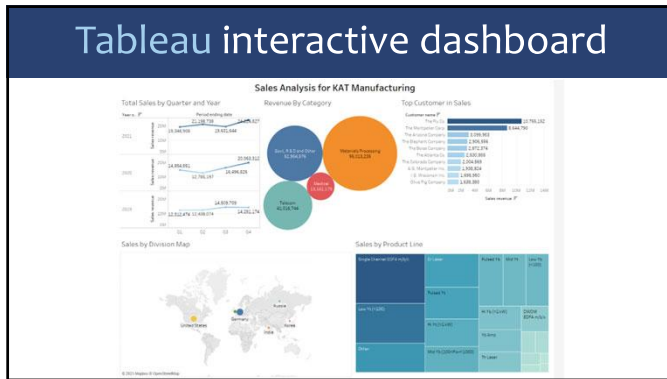


35

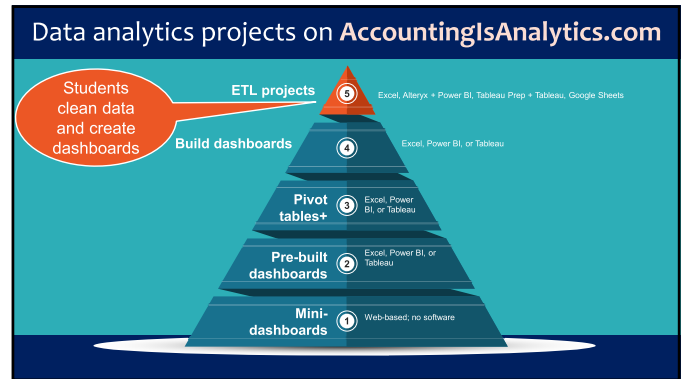
Power BI interactive dashboard



36



37



38

- ## 5. ETL projects
1. Use real software
 2. Excel, Alteryx + Power BI, Tableau Prep +Tableau, or Google Sheets*
 3. Combine data cleaning with data visualizations
 4. Students are using a variety of skills to mimic the data analytics process, from data cleaning to the final analysis

39

- ## KAT Concession Supply
- KAT Concession Supply is a fictitious company
 - >300 records in each data set
 - Different data sets for Excel, Alteryx + Power BI, Tableau + Tableau Prep, and Google Sheets
-

40




41

- ## All data cleaning projects include
- Step-by-step tutorial videos
 - Student guide
 - Teaching notes
 - Data set (editable)
 - Assumes no prior software knowledge
 - Can be completed in 20 – 60 minutes


42

Three difficulty levels




Beginner

20 – 30 minutes
≈ 5 cleaning + 2 viz



Intermediate

45 – 60 minutes
≈ 12 cleaning + 3 viz



Advanced


65 – 90 minutes
≈ 25 cleaning + 4 viz

43

ETL project learning objectives

After completing the project, students will be able to:

1. **Define** ETL and **describe** its importance
2. **Apply** data cleaning techniques
3. **Analyze** data



44

Why the different software tools?

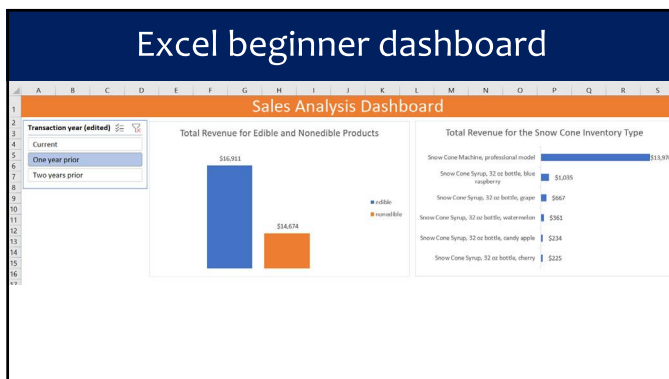
- Excel is a familiar tool for most students and is accessible by most students
- Alteryx and Tableau Prep are both leading ETL tools on the market
- Google Sheets is available for students who do not have access to a laptop and only have a Chromebook available

45

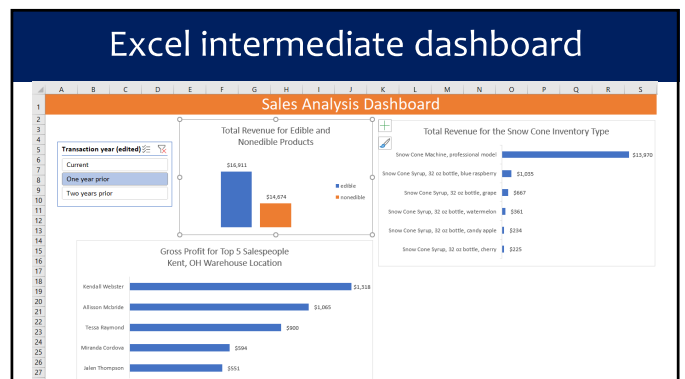
Every project

- Starts with step-by-step tutorial videos
- No prior knowledge assumed
- Each project has two parts:
 - Data cleaning
 - Dashboard creation
- Examples of end result dashboards next for beginner and intermediate projects

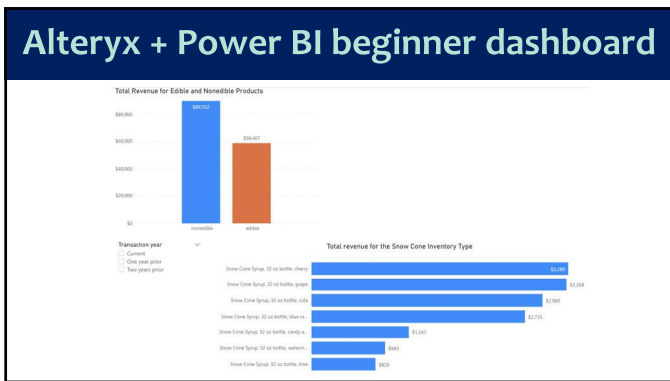
46



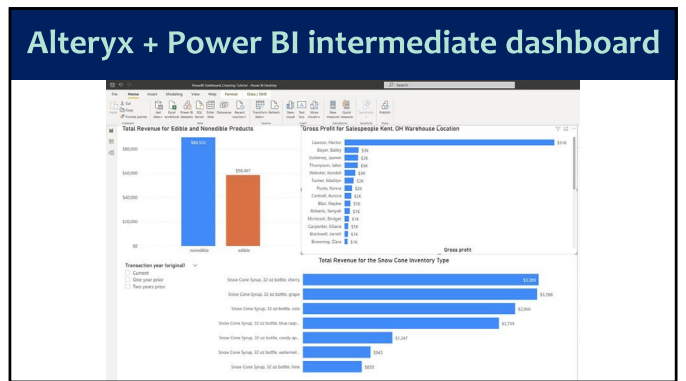
47



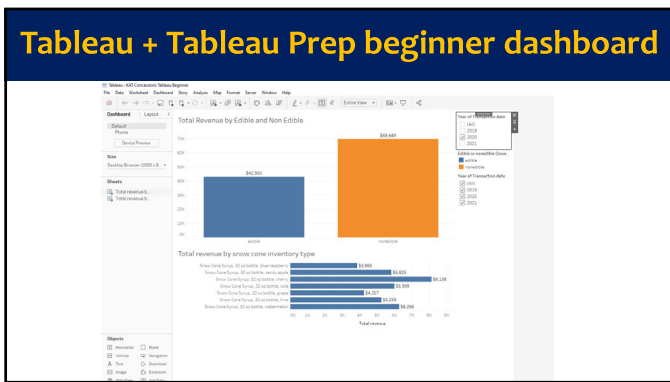
48



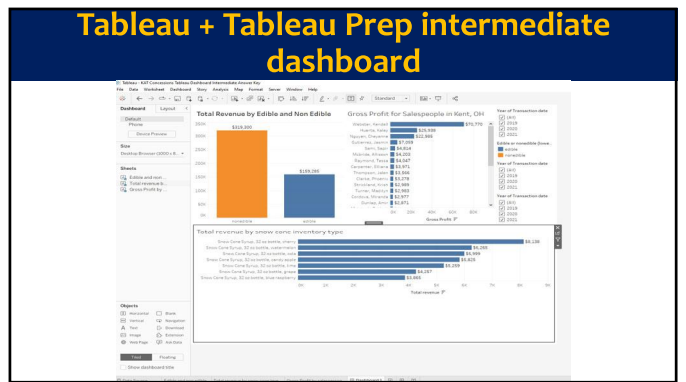
49



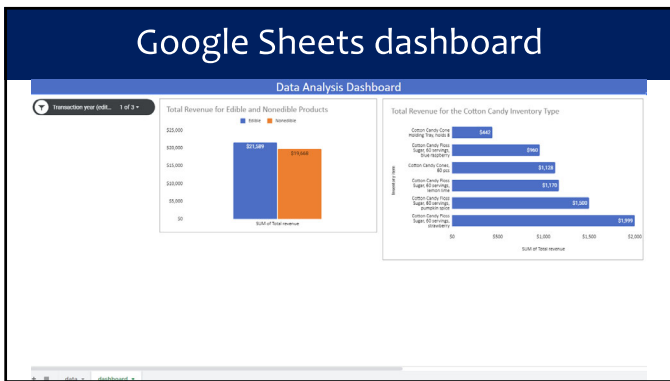
50



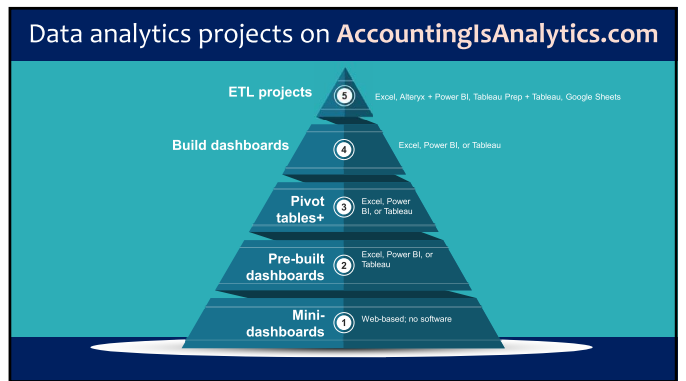
51



52



53



54

Upcoming webinars

- Will have two webinars per month from June – November 2022
- Each webinar is 30 minutes
- A deeper dive into the featured project
- Q & A time (any project, MyLab, etc.)
- Sign up at AccountingIsAnalytics.com

55

Excerpt from webinar schedule

Date	Starting time (Eastern)	Webinar topic	Link
Wed., June 8, 2022	1:00 PM	Interactive dashboards using Excel featuring KAT Manufacturing projects	Link
Tue., June 28, 2022	11:00 AM	ETL for introductory accounting: Excel beginner project (KAT Concession Supply)	Link
Wed., July 13, 2022	11:00 AM	ETL for introductory accounting: Alteryx beginner project (KAT Concession Supply)	Link
Tue., July 19, 2022	1:00 PM	ETL for introductory accounting: Google Sheets project (KAT Concession Supply)	Link

56

AccountingInTheHeadlines.com

- Blog posts each month during the academic year about accounting in the news
- **New feature!** Tutorial videos on main topic with each blog post
- Subscribe at AccountingInTheHeadlines.com

57

AccountingInTheHeadlines.com

How does Amazon's stock buyback impact its earnings per share and balance sheet?

[@PROFESSORDR. MARYBETHA.CHA.CICA.COM](#) [2 COMMENTS](#) [EDIT](#)

In March 2022, Amazon's board of directors authorized it to buy back up to \$10 billion of its stock. The stock buyback will take place over a multi-year period. Amazon may not buy back the full \$10 billion of its stock; the board's authorization is simply the maximum amount of stock that can be repurchased.

View a quick tutorial video about treasury stock (stock buybacks) below (or at this link) and then answer the following questions.



Treasury stock
(or stock buybacks)

Also includes discussion questions

58



Accounting
is Analytics

For additional data analytics teaching resources, see AccountingIsAnalytics.com

59