



Just IT

 B2Wgroup

Apprenticeships | Training | Recruitment

Data Technician

Week 2

Introduction to Tableau & Power BI

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Day 1: Task 1

Please research the different versions of Tableau, compare and contrast them below and explain the limited functionality on 'Tableau Public'.

Different Tableau versions

Different versions of Tableau:

Tableau Desktop

1. Data Analysis: Allows users to connect to various data sources, create data visualizations, and perform data analysis.
2. Data Visualization: Offers a range of visualization options, including charts, tables, maps, and more.
3. Data Storytelling: Enables users to create interactive stories and dashboards to share insights with others.
4. Cost: Available in two editions: Personal (\$35/user/month) and Professional (\$70/user/month).

Tableau Server

1. Collaboration: Enables teams to share and collaborate on data visualizations and dashboards.
2. Security: Provides robust security features, including authentication, authorization, and data encryption.
3. Scalability: Supports large-scale deployments and high-performance analytics.
4. Cost: Pricing varies based on the number of users and deployment options.

Tableau Online

1. Cloud-Based: A cloud-based version of Tableau Server, offering scalability and flexibility.
2. Automatic Updates: Receives automatic updates, ensuring users have access to the latest features.
3. Secure: Provides robust security features, including data encryption and access controls.
4. Cost: Pricing varies based on the number of users and deployment options.

Tableau Public

1. Free: A free version of Tableau, allowing users to create and share public visualizations.
2. Limited Features: Offers limited features compared to Tableau Desktop but still allows for data visualization and sharing.
3. Public Sharing: Enables users to share visualizations publicly, making it ideal for bloggers, journalists, and students.

Tableau Reader

1. Free: A free version of Tableau, allowing users to view and interact with Tableau visualizations.
2. Limited Features: Offers limited features compared to Tableau Desktop but still allows for viewing and interacting with visualizations.
3. No Editing: Does not allow users to edit or create new visualizations.

Tableau Prep

1. Data Preparation: A data preparation tool that allows users to clean, transform, and prepare data for analysis.
2. Integration: Integrates with Tableau Desktop and Tableau Server, enabling seamless data preparation and analysis.



3. Cost: Included with Tableau Desktop and Tableau Server subscriptions.

When choosing a version of Tableau, consider the following factors:

1. Data Analysis Needs: If you need to perform advanced data analysis, Tableau Desktop or Tableau Server may be the best choice.
2. Collaboration Requirements: If you need to collaborate with others, Tableau Server or Tableau Online may be the best choice.
3. Budget: If budget is a concern, Tableau Public or Tableau Reader may be a good starting point.
4. Data Preparation Needs: If you need to perform data preparation tasks, Tableau Prep may be a useful addition to your Tableau workflow.

Limited functionality on Tableau Public

Tableau Public is a free version of Tableau that allows users to create and share interactive data visualizations. However, it has some limitations compared to the paid versions of Tableau. Here are some of the limited functionalities on Tableau Public:

Data Connectivity

1. Limited data sources: Tableau Public can only connect to a limited number of data sources, including CSV, Excel, and Google Sheets.
2. No database connectivity: Tableau Public cannot connect to databases, such as MySQL, PostgreSQL, or SQL Server.

Data Size and Complexity

1. Data size limit: Tableau Public has a data size limit of 10 million rows.
2. Limited data complexity: Tableau Public may struggle with complex data models or large datasets.

Visualization and Interactivity

1. Limited visualization options: Tableau Public has a limited number of visualization options compared to the paid versions.
2. No dashboarding: Tableau Public does not allow users to create dashboards.
3. Limited interactivity: Tableau Public has limited interactivity features, such as filtering and drilling down.

Sharing and Collaboration

1. Public sharing only: Tableau Public visualizations can only be shared publicly.
2. No password protection: Tableau Public visualizations cannot be password-protected.
3. Limited collaboration: Tableau Public does not allow real-time collaboration.

Other Limitations

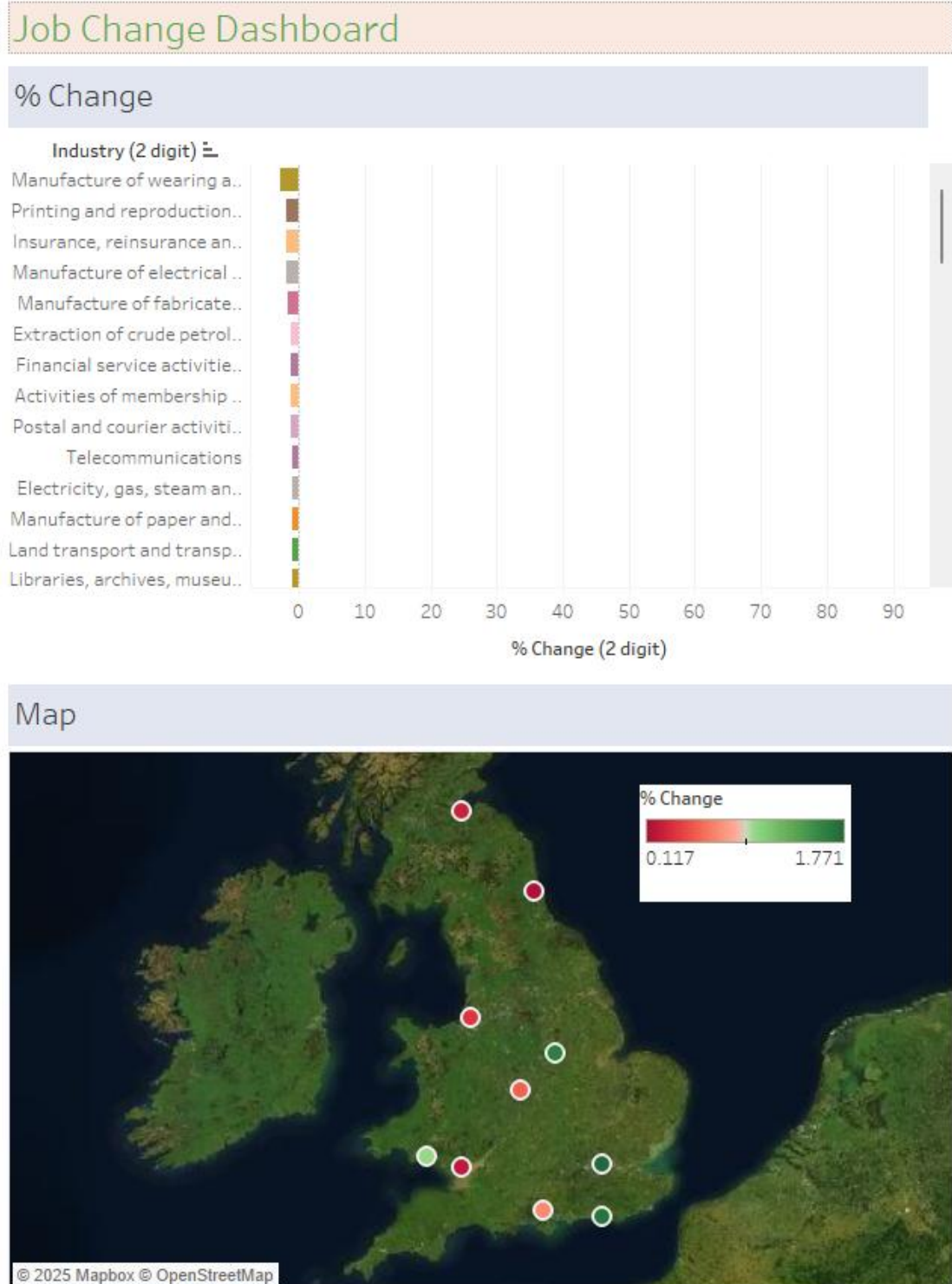
1. Watermarking: Tableau Public visualizations are watermarked with the Tableau logo.
2. Limited support: Tableau Public users have limited access to support resources and forums.
3. No offline access: Tableau Public visualizations require an internet connection to view.

Overall, Tableau Public is a great option for users who want to create and share simple data visualizations, but it may not be suitable for more complex data analysis or enterprise-level deployments.

Day 1: Task 2

Using the *EMSI_JobChange_UK* dataset, create your own dashboard, I want to see a bar chart showing percentage change and a UK based map showing the key city locations impacted.

Paste
your
print
screen
here



Day 2: Task 1

Using the Spotify data set, conduct an analysis to find trends and key information that could be used by an organisation for future projects.

There is no set scope for the analysis, simply to find trends and document them below:



What did you find?

Here are my findings:

- **Pop** is the most popular music genre, followed by **Rap**.
- The most popular artist is **Drake**, closely followed by **Chris Brown**.
- Songs that are neither too long nor too short tend to be more popular, with the majority of popular genres falling between **3.5 to 4 minutes** in length.
- There's a noticeable cluster of genres with very similar average song lengths.
- **Danceability** and **Acousticness** are within a similar range when compared to **Energy**.

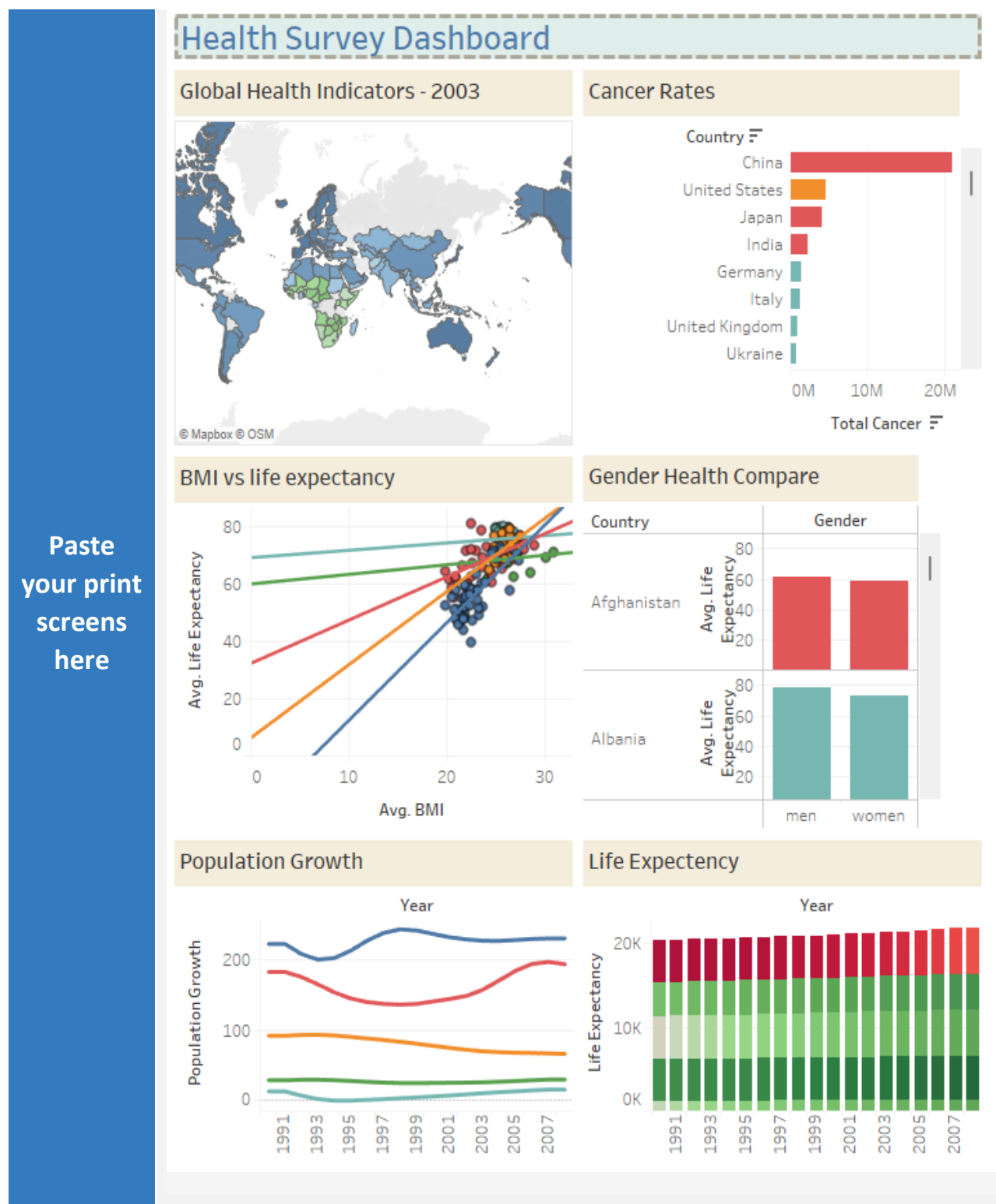


Day 2: Task 2

Using the Health [data set](#), conduct an analysis to find trends and key information that could be used by an organisation for future support.

There is no set scope for the analysis, simply to find trends and document them below.

- Data can be lifesaving and is being used more within the NHS, reflect on how this data could support decision making for the NHS.



What did you find and any reflections on how the NHS could use this?

Here are my findings:

- **Africa** has a lower life expectancy compared to other continents.
- In **Asia**, the average life expectancy increased the most from **65** in 1990 to **71** in 2008.
- The average **BMI** falls between **24 and 28**, which is associated with a higher life expectancy.
- **China** has the highest number of cancer patients, followed by the **United States**. However, it's important to note that China has the largest population in the world.
- Between **1994 and 2003**, Asia's population growth significantly declined, while Africa's population growth saw a substantial increase during the same period.
- On a global scale, **men's life expectancy** is higher than **women's**.
- **Japan** has the highest average life expectancy at **82.65**, while the **Central African Republic** shows the lowest at **46.20**, nearly half the figure of Japan.

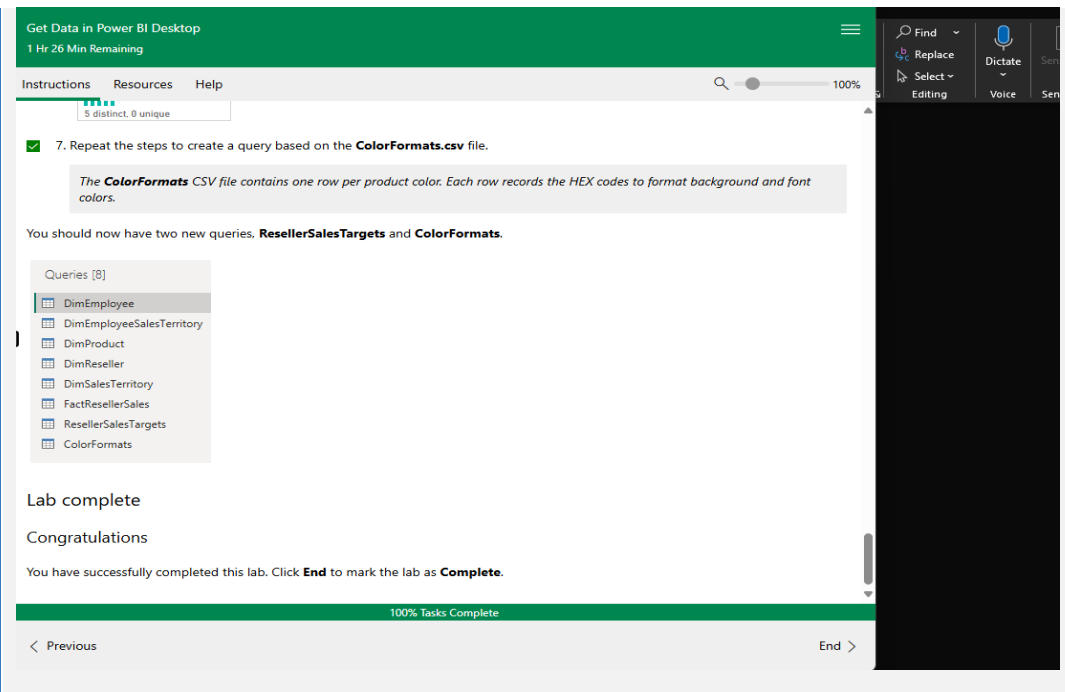


Day 3: Task 1

Please complete Lab 1 'Get Data in Power BI Desktop'. Once complete, paste a print screen below and in the collaboration board.

"Teaching is the best way to learn, so please listen out for support requests from the class and we'll work through the challenges together"

Paste your completed lab here

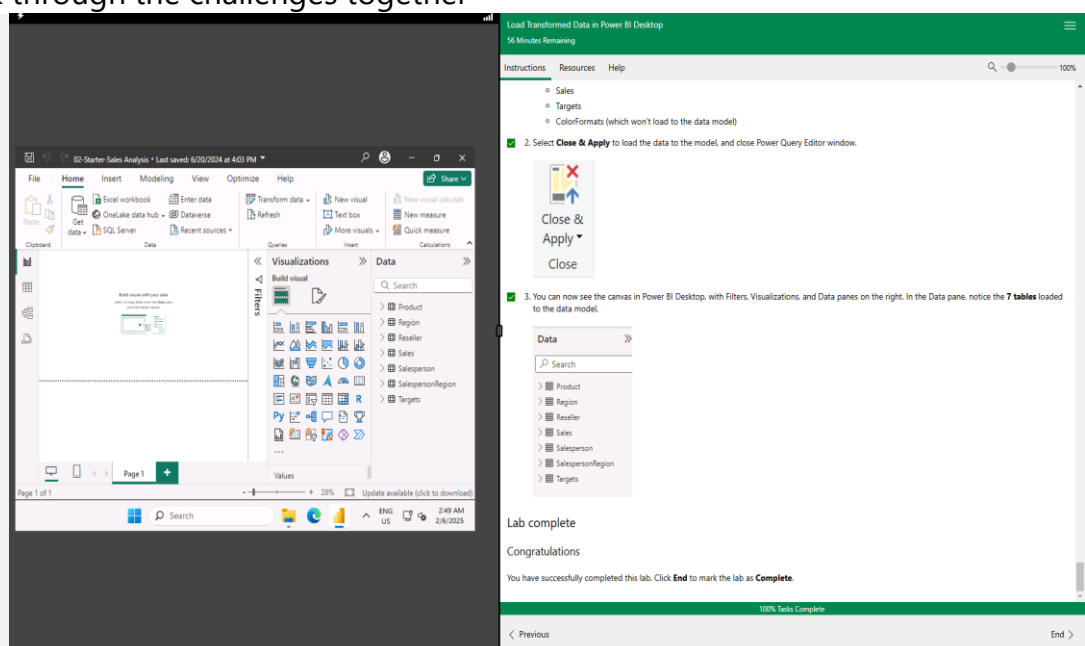


Day 3: Task 2

Please complete Lab 2 'Load Transformed Data in Power BI Desktop'. Once complete, paste a print screen below and in the collaboration board.

"Teaching is the best way to learn, so please listen out for support requests from the class and we'll work through the challenges together"

Paste your complete lab here



Day 4: Task 1

Please complete Lab 6 'Design a Report in Power BI Desktop'. Once complete, paste a print screen below and in the collaboration board.

"Teaching is the best way to learn, so please listen out for support requests from the class and we'll work through the challenges together"

Paste your complete d lab here

The image shows two screenshots from a Power BI Desktop lab. The left screenshot displays a report titled '06- Starter-Sales Analysis' with a sidebar on the left containing 'Overview', 'Profit', and 'My Performance' (which is selected). The main area shows several charts, including a bar chart for 'Sum of Sales by Country and Category' and a line chart for 'Sum of Profit Margin by Month'. The right screenshot shows the 'View' dropdown menu with 'Full screen' selected, and a 'Lab complete' message at the bottom.

Day 4: Task 2

Please complete Lab 9 'Create a Power BI Dashboard'. Once complete, paste a print screen below and in the collaboration board.

"Teaching is the best way to learn, so please listen out for support requests from the class and we'll work through the challenges together"

Paste your complete d lab here

The image shows two screenshots from a Power BI Desktop lab. The left screenshot displays a dashboard titled 'Sales Monitoring' with a bar chart for 'Profit Margin' and a line chart for 'Sales, Profit Margin'. The right screenshot shows the 'Lab complete' message and a 'Congratulations' message at the bottom.

Lab 3 Design a Data Model in Power BI

Design a Data Model in Power BI
13 Minutes Remaining

Instructions Resources Help

Relate the Targets table

In this task, you'll create a relationship to the **Targets** table.

- 1. Create a relationship from the **Salesperson (Performance)** | **EmployeeID** column and the **Targets** | **EmployeeID** column.
- 2. In Report view, add the **Targets** | **Target** field to the table visual.
- 3. Resize the table visual so all columns are visible.

Salesperson | **Sales** | **Target**

Salesperson	Sales	Target
Amy Alberts	\$10,288,626	\$19,450,000
Brian Welcker	\$77,548,570	\$221,700,000
David Campbell	\$12,004,822	\$19,625,000
Garrett Vargas	\$13,875,633	\$23,675,000
Jae Pak	\$8,410,883	\$13,575,000
Jillian Carson	\$7,633,387	\$13,675,000
José Saravia	\$13,875,633	\$18,975,000
Linda Mitchell	\$25,634,503	\$40,850,000
Lynn Tsoufas	\$1,391,025	\$3,210,000
Michael Blythe	\$21,987,348	\$31,150,000
Pamela Ansman-Wolfe	\$30,005,939	\$53,850,000
Rachel Valdez	\$18,777,743	\$4,125,000
Ranjit Varkey Chudikatti	\$4,527,840	\$9,050,000
Shu Ito	\$18,001,116	\$59,850,000
Stephen Jiang	\$65,868,919	\$11,150,000
Syed Abbas	\$1,391,025	\$3,050,000
Tete Mensa-Annan	\$12,004,822	\$17,100,000
Tsvi Reiter	\$7,638,607	\$13,250,000
Total	\$77,548,570	\$676,210,000

It's now possible to visualize sales and targets—but take care for two reasons. First, there's no filter on a time period, and so targets also include future target amounts. Second, targets aren't additive, and so the total shouldn't be displayed. They can either be disabled by formatting the visual or removed by using calculation logic.

Lab complete
Congratulations
You have successfully completed this lab. Click **End** to mark the lab as **Complete**.

100% Tasks Complete

< Previous End >

Lab 4 Create DAX Calculations in Power BI Desktop

Create DAX Calculations in Power BI Desktop
22 Minutes Remaining

Instructions Resources Help

While it appears all salespeople aren't meeting target, remember that the table visual isn't yet filtered by a specific time period. You'll produce sales performance reports that filter by a user-selected time period in the **Design a Report in Power BI Desktop** lab.

- 14. At the top-right corner of the **Data** pane, collapse and then expand open the pane.
- 15. Notice that the **Targets** table now appears at the top of the list.

Data

Targets
Date
Product
Region
Reseller
Sales
Salesperson
Salesperson (Performance)

Tables that comprise only visible measures are automatically listed at the top of the list.

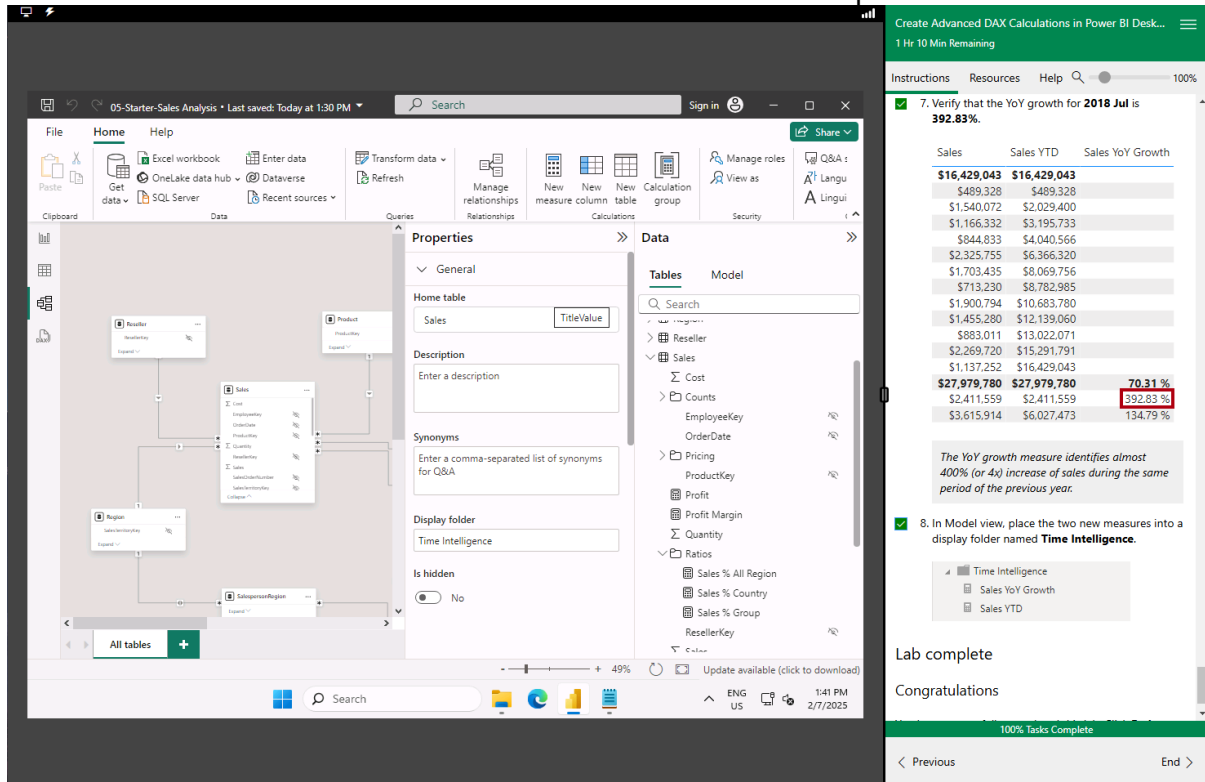
Lab complete
Congratulations
You have successfully completed this lab. Click **End** to mark the lab as **Complete**.

100% Tasks Complete

< Previous End >



Lab 5 Create Advanced DAX Calculations in Power BI Desktop



7. Verify that the YoY growth for 2018 Jul is 392.83%.

Sales	Sales YTD	Sales YoY Growth
\$16,429,043	\$16,429,043	
\$489,328	\$489,328	
\$1,540,072	\$2,029,400	
\$1,166,332	\$3,195,733	
\$844,833	\$4,040,566	
\$2,325,755	\$6,366,320	
\$1,703,435	\$8,069,756	
\$713,230	\$8,782,985	
\$1,900,794	\$10,683,780	
\$1,455,280	\$12,139,060	
\$883,011	\$13,022,071	
\$2,269,720	\$15,291,791	
\$1,137,252	\$16,429,043	
\$27,979,780	\$27,979,780	70.31 %
\$2,411,559	\$2,411,559	392.83 %
\$3,615,914	\$6,027,473	134.79 %

The YoY growth measure identifies almost 400% (or 4x) increase of sales during the same period of the previous year.

8. In Model view, place the two new measures into a display folder named Time Intelligence.

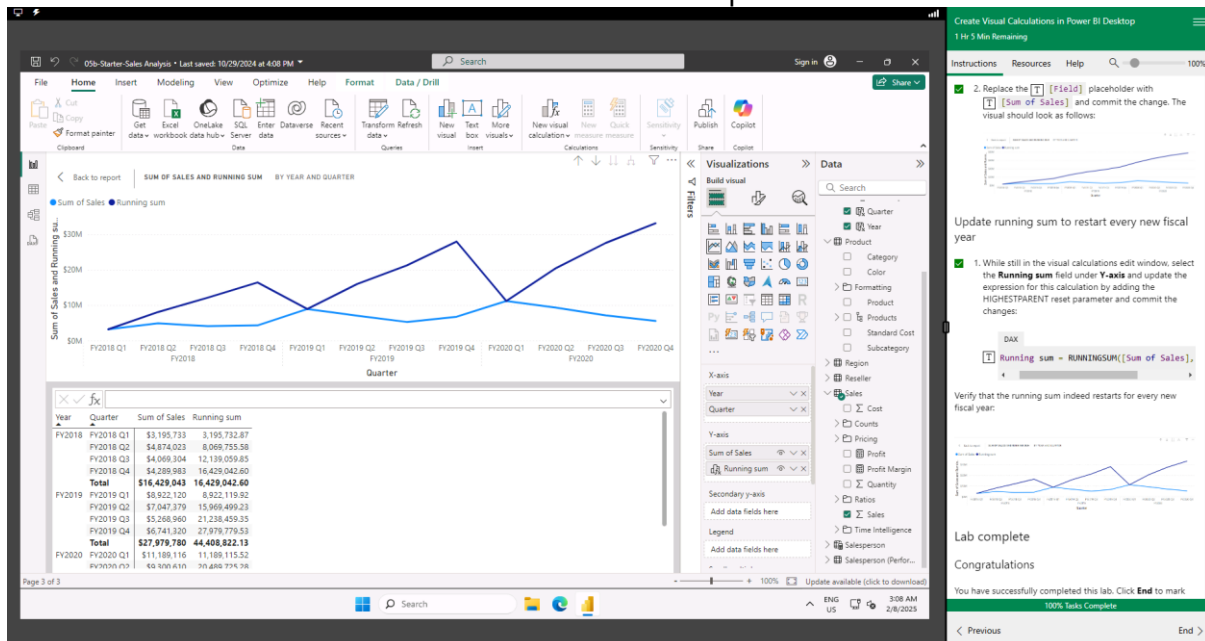
- Time Intelligence
- Sales YoY Growth
- Sales YTD

Lab complete
Congratulations

100% Tasks Complete

< Previous End >

Lab 6 Create Visual Calculations in Power BI Desktop



2. Replace the [Field] placeholder with [Sum of Sales] and update the change. The visual should look as follows:

Update running sum to restart every new fiscal year

1. While still in the visual calculations edit window, select the Running sum field under Y-axis and update the expression for this calculation by adding the HIGHESTRECENT reset parameter and commit the changes:

DAX

Running sum = RUNNINGSUM([Sum of Sales],

Verify that the running sum indeed restarts for every new fiscal year:

Lab complete
Congratulations

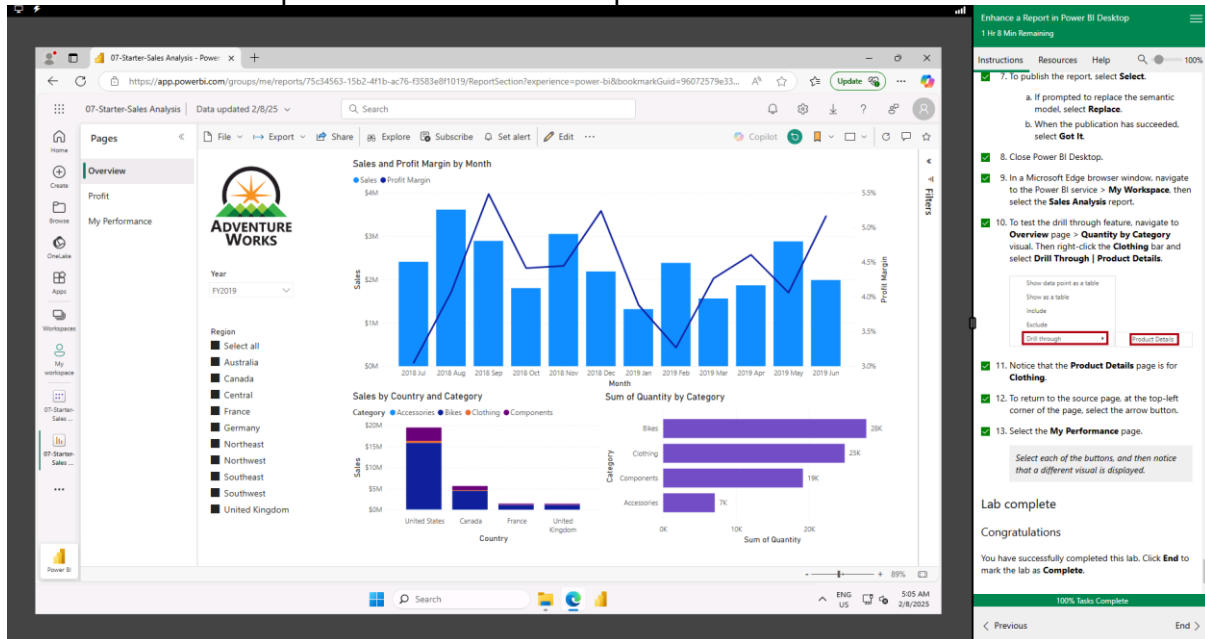
You have successfully completed this lab. Click End to mark.

100% Tasks Complete

< Previous End >



Lab 8 Enhance a Report in Power BI Desktop



Enhance a Report in Power BI Desktop
1 Hr 8 Min Remaining

Instructions Resources Help 100%

- To publish the report, select **Select**.
 - If prompted to replace the semantic model, select **Replace**.
 - When the publication has succeeded, select **Get It**.
- Close Power BI Desktop.
- In a Microsoft Edge browser window, navigate to the Power BI service > **My Workspace**, then select the **Sales Analysis** report.
- To test the drill through feature, navigate to **Overview** page > **Quantity by Category** visual. Then right-click the **Clothing** bar and select **Drill Through** | **Product Details**.

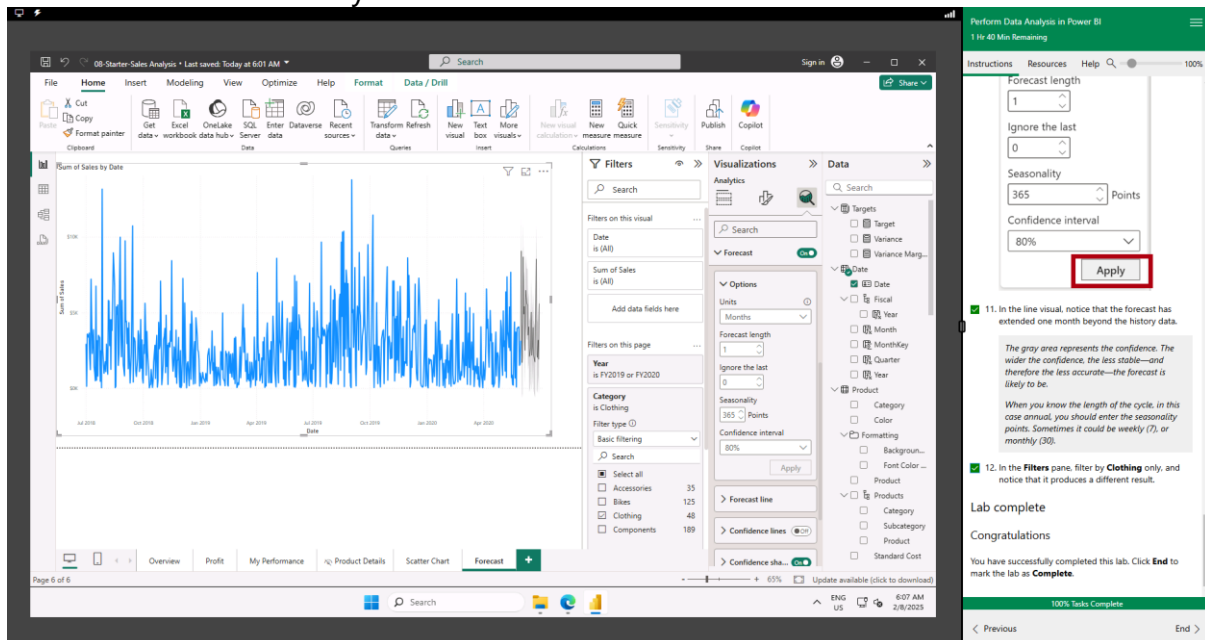
Show date point as a table
 Show as a table
 Include
 Exclude
 Drill through
 Product Details
- Notice that the **Product Details** page is for **Clothing**.
- To return to the source page, at the top-left corner of the page, select the arrow button.
- Select the **My Performance** page.

Lab complete
Congratulations
You have successfully completed this lab. Click **End** to mark the lab as **Complete**.

100% Tasks Complete

< Previous End >

Lab 9 Perform Data Analysis in Power BI



Perform Data Analysis in Power BI
1 Hr 40 Min Remaining

Instructions Resources Help 100%

Forecast length
1
Ignore the last
0
Seasonality
365 Points
Confidence interval
80%
Apply

- In the line visual, notice that the forecast has extended one month beyond the history data.

The gray area represents the confidence. The wider the confidence, the less stable—and therefore the less accurate—the forecast is likely to be.

When you know the length of the cycle, in this case annual, you should enter the seasonality points. Sometimes it could be weekly (7), or monthly (30).
- In the **Filters** pane, filter by **Clothing** only, and notice that it produces a different result.

Lab complete
Congratulations
You have successfully completed this lab. Click **End** to mark the lab as **Complete**.

100% Tasks Complete

< Previous End >



Lab 11 Enforce Row-Level Security

The screenshot shows the Power BI Desktop interface during the 'Enforce Row-Level Security' lab. The main window displays a table of sales data with columns: EmployeeKey, EmployeeID, Title, and UPN. The 'Salesperson' role is selected in the 'Data' pane. The right sidebar shows the 'Enforce Row-Level Security' lab instructions, which include steps 15, 16, and 17. Step 15 instructs to stop testing. Step 16 instructs to delete the Salespeople role. Step 17 instructs to manage security roles. The lab is marked as complete.

EmployeeKey	EmployeeID	Title	UPN
272	502097814	North American Sales Manager	stephen-jiang@adventureworks.com
277	112432117	Director of Sales	brian-welcker@adventureworks.com
281	841560125	Sales Representative	michael-blythe@adventureworks.com
282	191644724	Sales Representative	linda-mitchell@adventureworks.com
283	615308812	Sales Representative	jillan-carson@adventureworks.com
284	234474252	Sales Representative	garrett-verges@adventureworks.com
285	716374814	Sales Representative	tsvi-reiter@adventureworks.com
286	61161660	Sales Representative	pamela-anaman-wolfe@adventureworks.com
287	139397894	Sales Representative	shu-ito@adventureworks.com
288	399771412	Sales Representative	jose-sarasa@adventureworks.com
289	967554263	Sales Representative	david-campbell@adventureworks.com
290	982310417	European Sales Manager	amy-alberts@adventureworks.com
291	668991357	Sales Representative	jae-pak@adventureworks.com
292	134219713	Sales Representative	ranjit-varkey-chudakati@adventureworks.com
293	90836185	Sales Representative	tete-mensa-annan@adventureworks.com
294	481044938	Pacific Sales Manager	syed-abbas@adventureworks.com
295	954276219	Sales Representative	rachel-valdes@adventureworks.com
296	758596752	Sales Representative	lynn-tooflas@adventureworks.com

Course Notes

It is recommended to take notes from the course, use the space below to do so, or use the revision guide shared with the class:

We have included a range of additional links to further resources and information that you may find useful, these can be found within your revision guide.

END OF WORKBOOK

Please check through your work thoroughly before submitting and update the table of contents if required.

Please send your completed work booklet to your trainer.

