Power BI – Lesson 1: Introduction

Homework 1: Toshtemirjon

1. What is Power BI, and what are its three main components?

Power BI is a powerful business analytics tool developed by Microsoft that allows users to visualize data, perform analysis, and make data-driven decisions. Its three main components are:
- Power BI Desktop
- Power BI Service
- Power BI Mobile

2. In what business scenarios are Power BI dashboards useful?

1. Sales performance analysis – Display monthly sales, best-selling products, and regional trends.
2. Customer support monitoring – Track the number of tickets, average resolution time, and customer satisfaction ratings.

3. How do you download and install Power BI Desktop?

You can download Power BI Desktop from the Microsoft Store or the official Power BI website. Run the installer and follow the setup instructions.

4. What is the difference between Power BI Desktop and Power BI Service?

- Power BI Desktop is used to create reports locally on your computer.
- Power BI Service is a cloud-based platform used to store, share, and collaborate on reports.

5. What is the file extension for Power BI projects?

.pbix

6. What is the role of Power Query in Power BI?

Power Query is a tool used to clean, shape, and transform data before it is used in visualizations.

7. Why might a business prefer Power BI over Excel for reporting?

Power BI offers interactive dashboards, real-time updates, scalability, and more advanced visuals, making it superior to Excel for business intelligence.

8. What is one limitation of the free version of Power BI?

With the free version, reports cannot be shared online. Collaboration features require a Pro license.

9. What is a "published report" in Power BI Service?

A published report is one that is created in Power BI Desktop and then uploaded to Power BI Service for online viewing and sharing.

10. How does Power BI Mobile improve accessibility?

Users can view and interact with reports on their phones or tablets, which is especially helpful when working remotely or traveling.

11. Compare Power BI and Tableau: pros and cons

Power BI:
- Pros: Affordable, strong integration with Microsoft tools, beginner-friendly
- Cons: Limited flexibility in visual customization

Tableau:
- Pros: Advanced visual capabilities, highly customizable dashboards
- Cons: Expensive, steeper learning curve

12. How does Power BI integrate with Azure services?

Power BI connects with Azure SQL, Azure Data Lake, and Azure Machine Learning, enabling real-time analytics and AI-powered insights.

13. What are 'gateways' in Power BI, and when are they needed?

Gateways create a connection between on-premises data sources and Power BI Service, allowing for data refreshes without moving the data to the cloud.

14. How would you convince a company to adopt Power BI? (Using ROI argument)

Power BI enhances decision-making, saves time through automation, and provides real-time analysis at a low cost, offering high return on investment (ROI).

15. What security features does Power BI offer for sensitive data?

- Row-level security
- Data encryption
- Azure Active Directory integration
- Audit logs and compliance certifications

Bonus: Example Sales Data

From the Sales_Data.csv file:
- Laptop (3 units x $1200) = $3600
- Mouse (5 units x $25) = $125
- Keyboard (1 unit x $80) = $80
- Monitor (1 unit x $300) = $300

Power BI can visualize:

- Total sales over time
- Revenue comparison by product
- Top-selling products