Microsoft Copilot for Data and AI

Duration: 2 Days

Course Description:

This hands-on training program is designed to empower **Data Engineers** and **Data Analysts** with the skills to leverage **Microsoft Copilot** for streamlining data workflows on **Azure** and **Microsoft Fabric**. Participants will learn how to use Copilot's AI-powered capabilities to automate code generation, optimize ETL pipelines, enhance data analytics, and create insightful visualizations. The course also includes a foundational module on **AI concepts** to help participants understand the technology behind Copilot and use it responsibly.

By the end of the training, participants will be able to:

- Use Microsoft Copilot to generate and optimize code for data engineering and analytics tasks.
- Build and automate ETL pipelines using Azure Data Factory and Synapse Analytics.
- Create advanced data visualizations and reports with Power BI and Copilot.
- Integrate Copilot into collaborative workflows and CI/CD pipelines.
- Apply their skills to real-world projects in Azure and Microsoft Fabric.

Target Audience:

- **Data Engineers** who want to automate and optimize data pipelines using AI-powered tools.
- **Data Analysts** who want to enhance their data exploration, analysis, and visualization workflows.
- **Technical Leads** or **Managers** overseeing data teams and looking to adopt AI-driven productivity tools.
- **Azure and Microsoft Fabric users** who want to maximize their efficiency with Copilot.

Prerequisites:

- Basic knowledge of **SQL** and **Python**.
- Familiarity with **Azure** services (e.g., Azure Data Lake, Synapse Analytics) and **Microsoft Fabric**.

- No prior experience with AI or Microsoft Copilot is required.

Course Content:

Module 1: Introduction to Microsoft Copilot

- Overview of Microsoft Copilot and its role in data workflows.
- Key features: Natural language queries, code generation, and task automation.
- Use cases for Data Engineering and Data Analytics.
- Limitations and best practices for using Copilot effectively.
- **Labs**:
    - Explore the Microsoft Copilot interface in Azure and Microsoft Fabric.
    - Use Copilot to generate a simple SQL query or Python script.

Module 2: AI Fundamentals for Data Professionals

- What is AI? Overview of artificial intelligence and its applications.
- Key AI concepts: Machine learning, natural language processing (NLP), and generative AI.
- How Microsoft Copilot uses AI: Overview of large language models (LLMs) and their role in Copilot.
- Ethical considerations and responsible AI usage.
- **Labs**:
    - Explore examples of AI-powered tools (e.g., Copilot, ChatGPT) to understand their capabilities.
    - Discuss real-world use cases of AI in data engineering and analytics.

Module 3: Setting Up Your Environment

- Overview of Azure and Microsoft Fabric for data storage, engineering, and analytics.
- Setting up Azure services (e.g., Azure Data Lake, Synapse Analytics, Azure Data Factory).
- Enabling and configuring Microsoft Copilot in Microsoft Fabric.
- Permissions and access control for Copilot.

- **Labs**:
    - Set up a Microsoft Fabric workspace and enable Copilot.
    - Connect Copilot to an Azure Data Lake or Synapse Analytics instance.

Module 4: Using Copilot for Data Engineering

- Writing ETL pipelines with Copilot.
- Generating code for data ingestion, transformation, and loading (e.g., Azure Data Factory, Synapse Pipelines).
- Using Copilot for SQL queries and database interactions.
- Automating data workflows with Copilot suggestions.
- **Labs**:
    - Build a simple ETL pipeline using Copilot for Azure Data Factory.
    - Write SQL queries for data extraction and transformation with Copilot assistance.

Module 5: Using Copilot for Data Analytics

- Generating code for data analysis in Python (e.g., Pandas, NumPy).
- Using Copilot for data visualization (e.g., Power BI integration).
- Automating report generation and dashboard creation.
- Best practices for using Copilot in exploratory data analysis (EDA).
- **Labs**:
    - Analyze a dataset using Copilot-generated Python code.
    - Create a Power BI report with Copilot-assisted DAX queries.

Module 6: Advanced Data Engineering with Copilot

- Optimizing ETL pipelines with Copilot suggestions.
- Using Copilot for complex SQL queries and stored procedures.
- Automating data validation and quality checks.
- Integrating Copilot with Azure DevOps for CI/CD pipelines.
- **Labs**:

    - Optimize an existing ETL pipeline with Copilot.
    - Write and validate a complex SQL query using Copilot.

Module 7: Advanced Data Analytics with Copilot

- Using Copilot for advanced data transformations and aggregations.
- Automating repetitive analytics tasks (e.g., report generation, data cleansing).
- Integrating Copilot with Power BI for advanced visualizations.
- Best practices for collaborative analytics workflows.
- **Labs**:
    - Create an advanced Power BI dashboard with Copilot assistance.
    - Automate a data cleansing process using Copilot-generated scripts.

Module 8: Best Practices

- Writing clean, maintainable code with Copilot.
- Reviewing and validating Copilot-generated code.
- **Labs**:
    - Review and refactor Copilot-generated code as a team.