Three-Month Training Plan for Power BI and SQL

Agenda

- Overview
- Month 1: Foundations and Basics
- Week 1: Introduction and Getting Started
- Week 2: Data Preparation and Connection
- Week 3: Data Modeling and Relationships
- Week 4: Data Visualization Basics
- Month 2: Intermediate Concepts
- Week 5: Advanced Visualizations
- Week 6: Data Transformation
- Week 7: DAX and SQL Functions
- Week 8: Report Design and Formatting
- Month 3: Advanced Topics and Best Practices

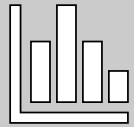
Overview

- Three-month training plan for Power BI and SQL
  - Commitment of three hours per week

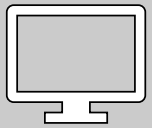
Month 1: Foundations and Basics

Month 1: Foundations and Basics

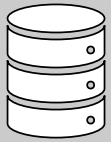
Power BI: Introduction to Power BI



Overview of Power BI



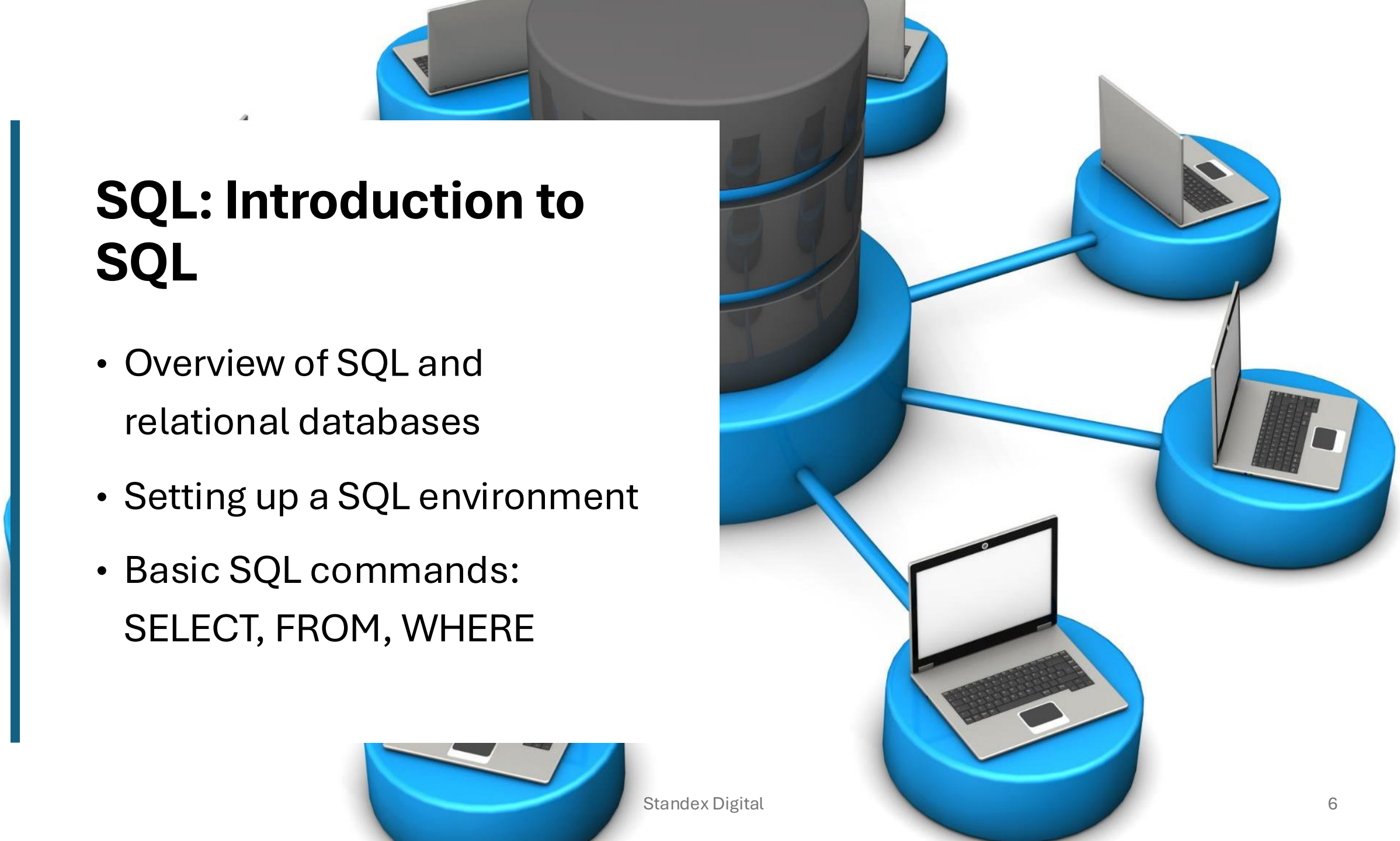
Power BI components: Desktop, Service, Mobile



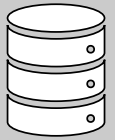
Setting up your Power BI environment

SQL: Introduction to SQL

- Overview of SQL and relational databases
- Setting up a SQL environment
- Basic SQL commands: SELECT, FROM, WHERE

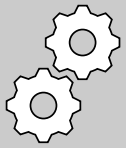


Power BI: Connecting to Data Sources



Connecting to various data sources

- Excel
- SQL Server
- Web data



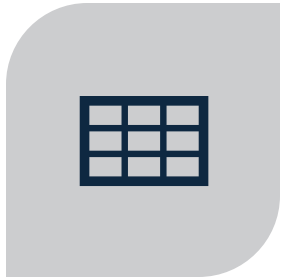
Data transformation using Power Query

Basic data cleaning techniques

SQL: Data Retrieval and Filtering

- Writing basic queries to retrieve data
  - Filtering data with WHERE clause
  - Using logical operators (AND, OR, NOT)

Power BI: Data Modeling



CREATING AND MANAGING RELATIONSHIPS BETWEEN TABLES

UNDERSTANDING STAR AND SNOWFLAKE SCHEMAS

CREATING CALCULATED COLUMNS AND MEASURES

SQL: Advanced Data Retrieval

- Using JOINs to combine data from multiple tables
  - Understanding INNER JOIN, LEFT JOIN, RIGHT JOIN, FULL JOIN
- Using aliases for readability

Power BI: Creating Basic Visualizations

- Introduction to visualizations
  - Tables, charts, maps
- Customizing visualizations
  - Formatting, filtering, sorting
- Using slicers for interactivity

SQL: Aggregating Data

- Using aggregate functions
  - SUM
  - AVG
  - COUNT
  - MIN
  - MAX
- Grouping data with GROUP BY clause
- Filtering groups with HAVING clause

Month 2: Intermediate Concepts

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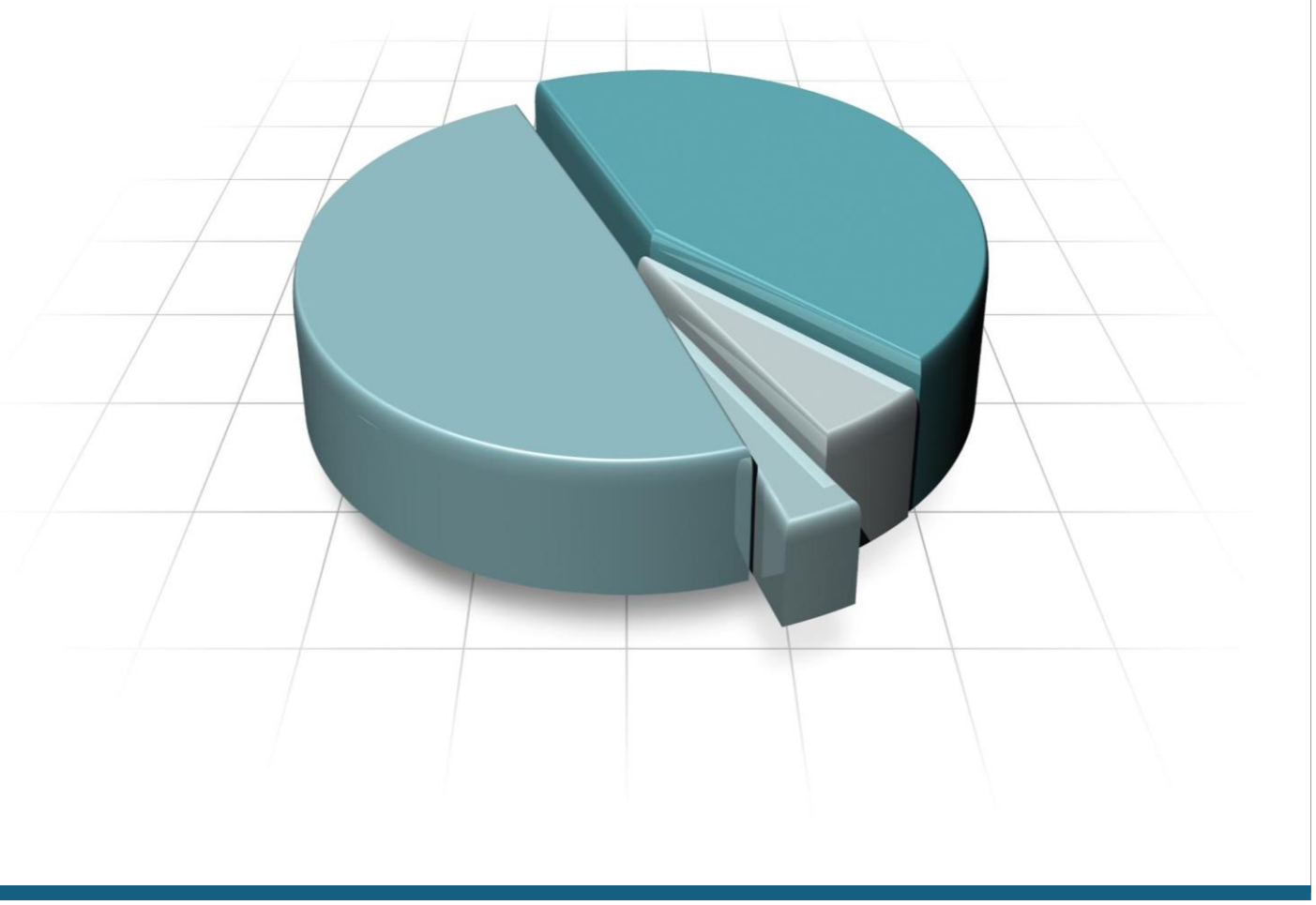


Power BI: Advanced Visualizations

- Using advanced charts
  - Scatter
  - Waterfall
  - Funnel
  - Gauge
- Customizing visuals with advanced formatting options
- Introduction to custom visuals from the marketplace

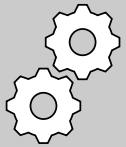
SQL: Subqueries and Nested Queries

- Writing subqueries in SELECT, FROM, and WHERE clauses
- Using correlated subqueries
- Practical examples of nested queries

Power BI: Advanced Data Transformation

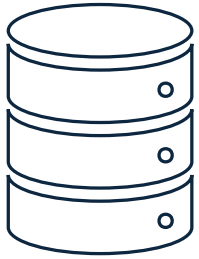
Advanced data cleaning techniques

Pivoting and unpivoting data



Using M language for custom transformations

SQL: Data Manipulation



Inserting, updating, and deleting data

Practical examples of data manipulation

Using transactions and maintaining data integrity

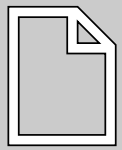
Power BI: Introduction to DAX

- Understanding DAX (Data Analysis Expressions)
  - Learn the basics of DAX formulas
- Writing basic DAX formulas
  - Get started with creating calculated measures and columns
- Creating calculated measures and columns
  - Enhance your data analysis with DAX

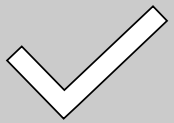
SQL: Advanced SQL Functions

- Using string functions
  - CONCAT
  - SUBSTRING
  - REPLACE
- Using date functions
  - GETDATE
  - DATEADD
  - DATEDIFF
- Practical examples of advanced SQL functions

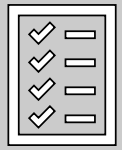
Power BI: Designing Reports



Creating multi-page reports



Using themes and templates for consistency



Best practices for report design and layout

SQL: Views and Indexes

- Creating and managing views
- Using indexes for performance optimization
- Understanding the impact of indexes on query performance

Month 3: Advanced Topics and Best Practices

Month 3: Advanced Topics and Best Practices

Power BI: Enhancing Report Interactivity

Using bookmarks and buttons for navigation

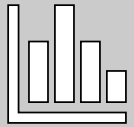
Creating drill-through reports

Customizing tooltips and interactions

SQL: Stored Procedures and Functions

- Creating and using stored procedures
- Creating and using user-defined functions
- Practical examples of stored procedures and functions

Power BI: Optimizing Performance



Best practices for data model optimization

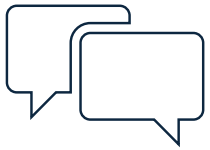
Using performance analyzer

Incremental data refresh techniques

SQL: Query Optimization

- Analyzing query performance with execution plans
- Using indexes and query hints
- Best practices for writing efficient queries

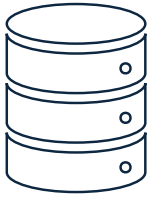
Power BI: Using Advanced Analytics



Introduction to AI visuals

Q&A

Key influencers



Using R and Python scripts in Power BI

Creating predictive models

SQL: Advanced Query Techniques

- Using CTEs (Common Table Expressions)
  - CTEs provide a way to write more readable and maintainable queries
- Recursive queries
  - Recursive queries are used to query hierarchical data
- Practical examples of advanced queries
  - Examples of advanced queries to solve real-world problems

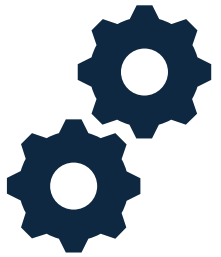
Power BI: Automating Reports

- Scheduling data refresh
  - Automate the process of updating data in reports
- Using Power BI Service for report sharing and collaboration
  - Share reports with others and collaborate on them
- Creating and managing dashboards
  - Organize and present data in a visually appealing way

SQL: Automating Tasks

Using SQL Server Agent for automation

Scheduling jobs and alerts



Practical examples of SQL automation

Power BI: Real-World Applications

- Review of successful Power BI projects
- Lessons learned and best practices
- Developing a customized report based on a real-world scenario

SQL: Real-World Applications

- Review of successful SQL projects
- Lessons learned and best practices
- Developing a customized database solution based on a real-world scenario

Power BI: Certification Exam Preparation

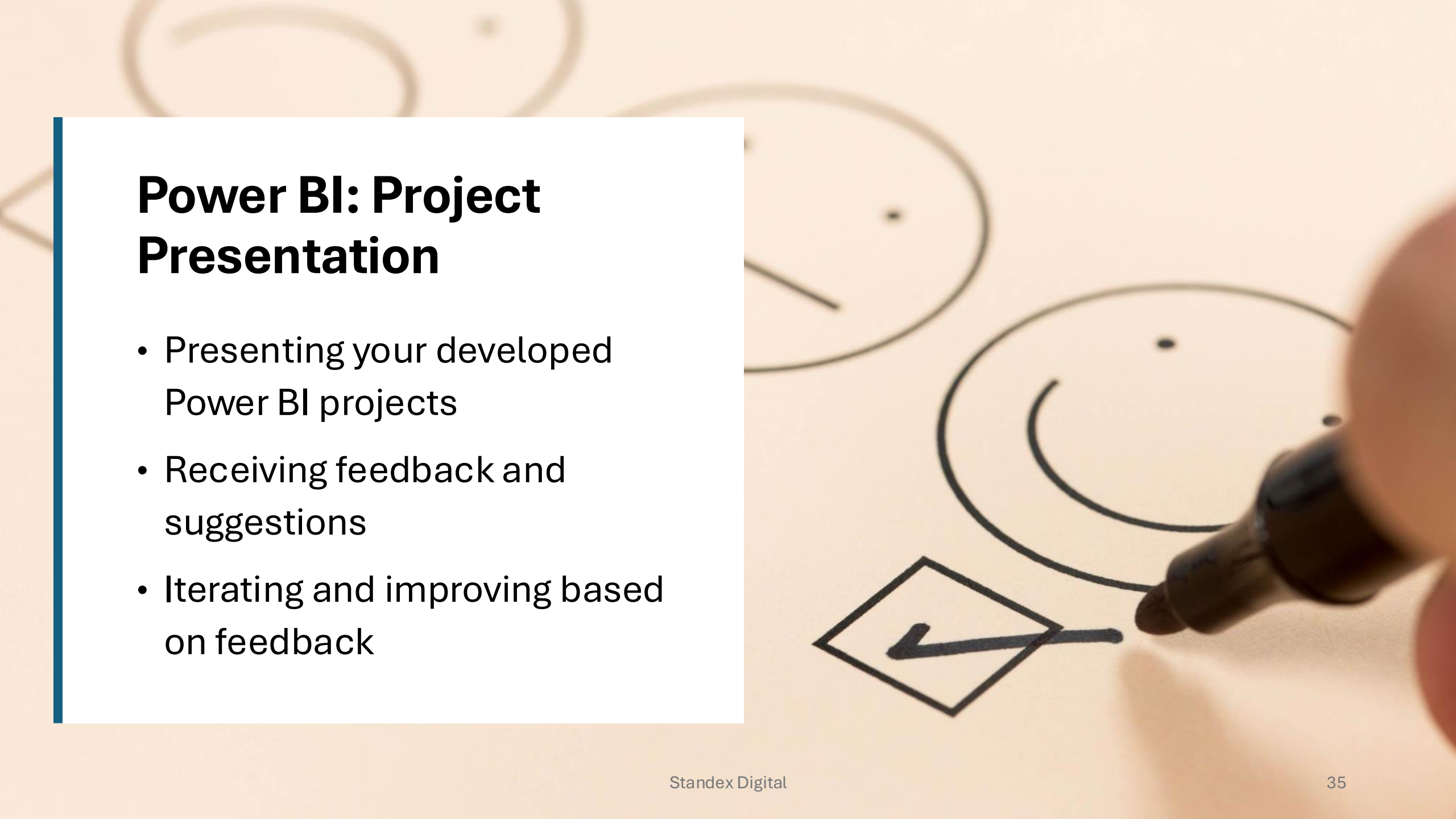
- Review of key concepts and skills
- Practice questions and mock exams
- Tips and strategies for passing the certification exam

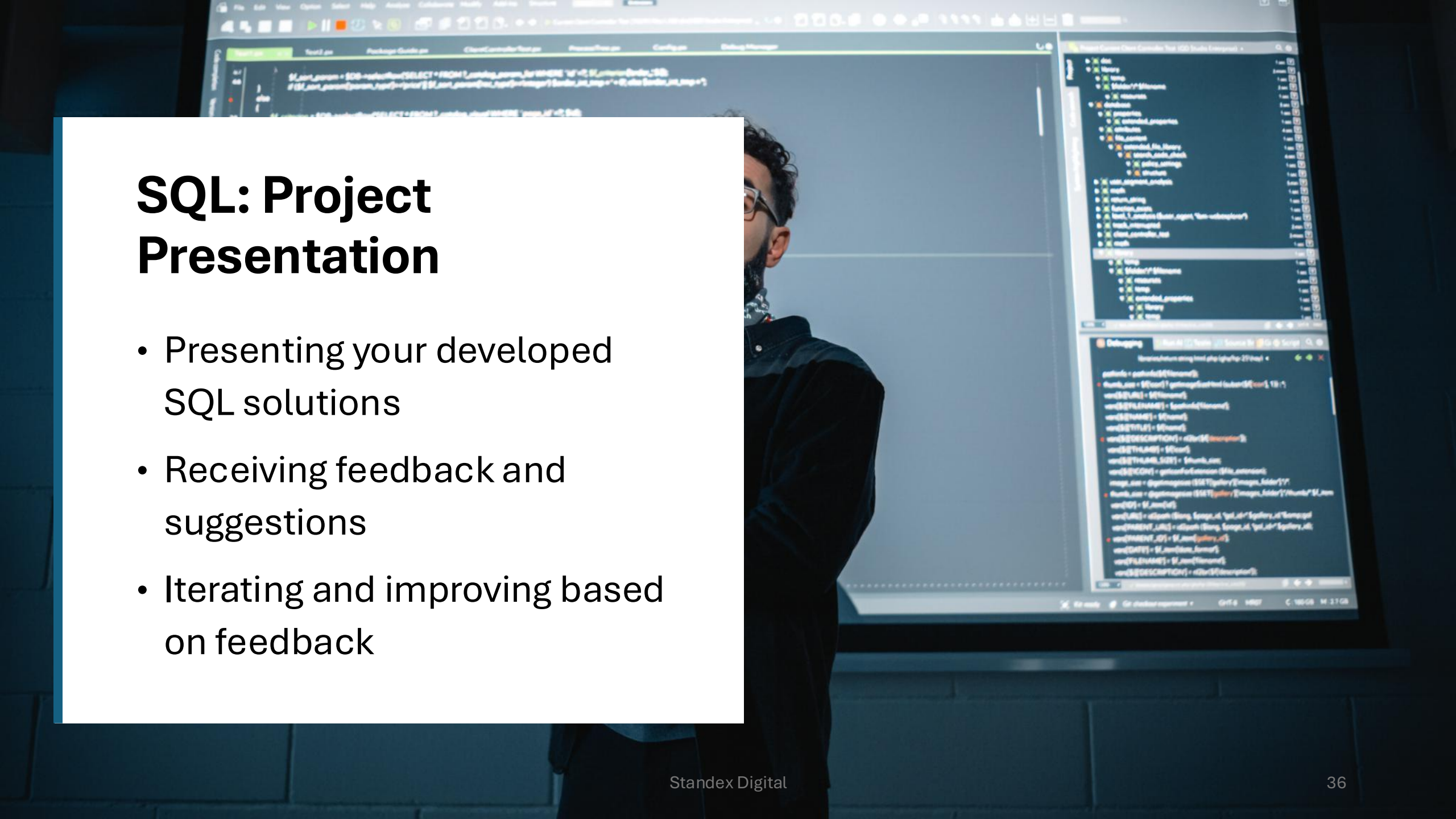
SQL: Certification Exam Preparation

- Review of key concepts and skills
- Practice questions and mock exams
- Tips and strategies for passing the certification exam

Power BI: Project Presentation

- Presenting your developed Power BI projects
- Receiving feedback and suggestions
- Iterating and improving based on feedback





SQL: Project Presentation

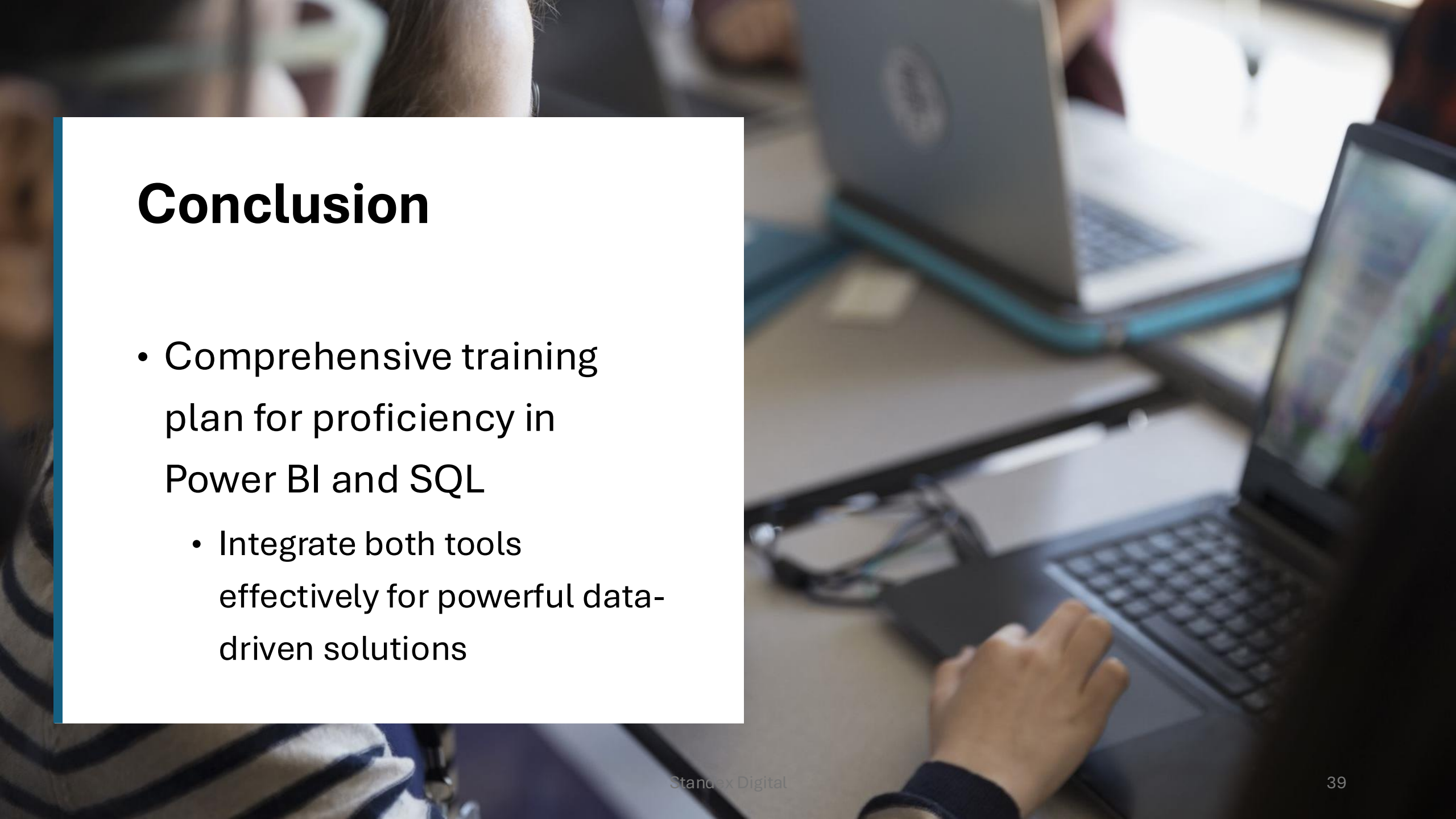
- Presenting your developed SQL solutions
- Receiving feedback and suggestions
- Iterating and improving based on feedback

Power BI: Exploring Advanced Features

- Exploring advanced features and capabilities
- Introduction to Power BI Premium and Power BI Embedded
- Planning for future learning and development

SQL: Exploring Advanced Features

- Delving into advanced features and capabilities
- Introduction to SQL Server Integration Services (SSIS) and SQL Server Reporting Services (SSRS)
- Planning for future learning and development



Conclusion

- Comprehensive training plan for proficiency in Power BI and SQL
  - Integrate both tools effectively for powerful data-driven solutions