

Course MS55045A

Microsoft End to End Business Intelligence Boot Camp

Length: 5 Days

About this Course

This five-day instructor-led course is a complete high-level tour of the Microsoft Business Intelligence stack. It introduces students to the SQL 2012 Business Intelligence and SharePoint 2013 Business Intelligence services including PerformancePoint Service, Excel Services, Business Connectivity Services, Visio Services and the Business Intelligence Center focusing on their interdependency. Each of the modules is stand-alone allowing for customization of the course for those audiences that may not have an interest in a certain service.

Each concept is demonstrated with a video before the exercise on that concept, so first you will have the short lecture then see the concept demonstrated then do it yourself. Remember if you can't do it you didn't learn it. Each of the videos, and there are approximately 13 hours of them, is intended as a take-away from the class for each student.

Audience Profile

This course is intended for Project Managers, Business Intelligence Developers, SQL Server Developers and IT Professionals that will be involved with the design, development and maintenance of SharePoint 2013 Business Intelligence solutions. The course introduces each of the services and minimizes or eliminates any coding.

At Course Completion

After completing this course, students will be able to:

- Browse the data within the cube using SQL Server Management Studio.
- Browse data using Visual Studio 2013.
- Connect to a tabular source, import tables, and explore the data.
- Successfully Navigate SQL Server Data Tools.
- Successfully Navigate SQL Server Management Studio.
- Run the Import Export Wizard.
- Create a Project.
- Add and Configure Connections to the Control Flow.
- Add and Configure Execute SQL Tasks.
- Connect and Configure Precedence Constraints.
- Add and Configure Data Flow Tasks.
- Use the Destination Assistant.
- Copy a Package and Reuse Project Connection Managers.
- Add and Configure a Data Conversion Transformation.
- Add and Configure a Conditional Split Transformation.
- Add and Configure a Multicast Transformation.
- Add and Configure an Aggregate Transformation.
- Add and Configure a Derived Column Transformation.
- Add and Configure a Sort Transformation.
- Add and Configure a Lookup Transformation.
- Successfully Deploy a Project.
- Create a Sample or Test Database.

- Successfully Navigate and Use Key Objects.
- Create a Server Side Time Dimension.
- Create a Data Source.
- Create a Data View.
- Successfully Navigate a Cube.
- Successfully Navigate and Configure Partitions.
- Use the Aggregation Design Wizard.
- Create and Configure a Data Profiling Task.
- Configure Proactive Cache.
- Deploy and Process a Project.
- Build a Cube.
- Understand the Functionality of MDX.
- Write MDX.
- Understand How to Use MDX to Navigate Hierarchies.
- Write MDX Navigating Hierarchies.
- Understand Working with Time in MDX.
- Write MDX Working with Time.
- Creating a Tabular Project.
- Import Data Using the Table Import Wizard.
- Manually Add a Relationship.
- Create Measures.
- Create Calculated Columns.
- Create Hierarchies.
- Create Perspectives.
- Create KPIs.
- Process Data.
- Deploy a Solution.
- Connect to a Tabular Model Using Excel.
- Locate, Access and Use Report Manager.
- Use Report Designer.
- Create and Configure Data Sources.
- Create and Configure Datasets.
- Create and Configure a Basic Report.
- Create and Configure Graphics.
- Create and Configure Maps
- Create and Configure Report Parts.
- Create and Configure a Model.
- Create and Configure Entities.
- Create and Configure Members.
- Create and Configure Attributes.
- Create a Business Rule.
- Deploy a Model.
- Load Data.
- Create a Subscribing View.
- Use the Data Mining Add-in for Excel.
- Explore the options and settings available within the new SharePoint 2013 Central Administration.
- Create a new web application and business intelligence site while exploring the features of both.
- Create a SharePoint library to hold Excel workbooks and explore trusted file locations.
- Utilize the Power View add-in for Excel
- Create an Excel workbook with a parameter and save it to a SharePoint document library.
- Add Web Apps to a webpage.
- Explore the Dashboard Designer interface and know how to create and configure a data source.
- Create and configure a standard KPI and a scorecard.
- Create and configure a leaf KPI and a scorecard.
- Create two blank KPI's and then roll them into an objective KPI.
- Create and configure an analytic chart and an analytic grid, add them to a dashboard, deploy them to SharePoint, and explore the options available.
- Create and configure a filter, and tie the filter into both the analytic chart and analytic grid created earlier.

- Create and configure a cascading filter and then tie it into a new analytic chart and grid.
- Create a Time Intelligence data connection, a Time Intelligence filter, and create a report using both.
- Create four copies of the Objective Scorecard, configure settings in each of the four copies, and deploy them to SharePoint in a dashboard.
- Create a new leaf KPI and use that KPI in two new scorecards, one with a filter configured, and one without.
- Create a new dashboard with two pages and review editing options.
- Create a drawing, upload the document to the Student BI Site documents library, and view the drawing in a browser.
- Create a data-connected drawing and upload the document to the Student BI Site documents library.
- Create an objective scorecard and matching strategy map, place them in a dashboard, and then upload the dashboard to the Student BI Site.
- Use PowerPivot within Excel to import a table from SQL Server.
- View the relationships existing within the imported tables from SQL Server and then import an additional table and configure a relationship between it and the existing.
- Hide columns they don't want reflected in the resulting PivotTable.
- Create a PivotTable within an existing worksheet.
- Assign administrators and permissions on the BDC Metadata Store.
- Explore the different content types available in SharePoint 2013 and learn how to locate them and their corresponding settings.
- Create a document library, configure it to accept specific content types, and then learn how to delete the document library.
- Create and configure a new external content type.
- Create an external list associated with the new external content type created prior.
- Create a new external content type and a new host URL, and then create an external list and profile page.
- Add a custom action to an external list.
- Navigate the Report Builder 3.0 interface.
- Create an embedded data source connecting into a database.
- Create an embedded data source connecting into an OLAP database.
- Create a shared data source using the Report Manager.
- Create a shared dataset using the shared connection they created in the previous exercise.
- Create a new dashboard and explore three different ways to connect the Web Apps.

Prerequisites

Before attending this course, students must have:

- An understanding of the benefits of business intelligence.

Course Outline

Module 1: Course Overview

This module explains how the class will be structured and introduces course materials and additional administrative information.

Lessons

Introduction

Course Materials

Facilities

Prerequisites

What We'll Be Discussing

After completing this module, students will be able to:

Successfully log into their virtual machine.

Have a full understanding of what the course intends to cover.

Module 2: The Business Intelligence Stack

In this module we will first look at the three different ways in which business intelligence can be viewed. Then, we're going to look at the services SQL 2012 provides us and how they apply to business intelligence. We will then move to SharePoint 2013 and look at the SharePoint services to examine their relevance and how we can use them in business intelligence to surface data. In this

section we will also cover the new business intelligence features available within the SharePoint 2013 release. Finally, we will take a brief look at PowerPivot, examining the new features and their significance. PowerPivot is covered in more detail in a later module.

Lessons

Business Intelligence in Three Ways

SQL 2012 Business Intelligence

New 2013 SharePoint Business Intelligence Features

New 2013 PowerPivot in Excel Features

Lab : The Business Intelligence Stack

SQL 2012 Multidimensional Model Basics

SQL 2012 Tabular Model Basics

After completing this module, students will be able to:

Browse the data within the cube using SQL Server Management Studio.

Browse data using Visual Studio 2013.

Connect to a tabular source, import tables, and explore the data.

Module 3: SQL Server Integration Services (SSIS) 2012

In this module we will give an overview of ETL and discuss two approaches that should be considered prior to implementation. We will also go over the SQL Server Data Tools application and explain the concept of Packages, Tasks, and Containers with further instruction on how to use these tools and others. In the following list of topics you will see two topics that are part of SQL Server Integration Services ETL although not covered in this module. They are SQL Server Integration Services Data Profiler and Data cleansing which are covered later in the course.

Lessons

What's New?

Overview of Extract, Transform, and Load (ETL)

SSIS Tools

Change Data Capture

SQL Server Integration Services Scripting

Variables, Parameters, and Expressions

Package Deployment

Lab : SQL Server Integration Services (SSIS) 2012

Explore the SQL Server Data Tools

Explore SQL Server Management Studio and Back Up a Database

Run the Import Export Wizard

Create a Project for the Exercises

Add Connections to the Control Flow

Add Execute SQL Tasks and Connect Precedence Constraints

Add Data Flow and Use the Destination Assistant

Copy a Package and Reuse Project Connection Managers

Data Conversion

Conditional Split

Multicast

Aggregate

Derived Column and Sort

Lookup

Project Deployment

After completing this module, students will be able to:

Successfully Navigate SQL Server Data Tools.

Successfully Navigate SQL Server Management Studio.
 Run the Import Export Wizard.
 Create a Project.
 Add and Configure Connections to the Control Flow.
 Add and Configure Execute SQL Tasks.
 Connect and Configure Precedence Constraints.
 Add and Configure Data Flow Tasks.
 Use the Destination Assistant.
 Copy a Package and Reuse Project Connection Managers.
 Add and Configure a Data Conversion Transformation.
 Add and Configure a Conditional Split Transformation.
 Add and Configure a Multicast Transformation.
 Add and Configure an Aggregate Transformation.
 Add and Configure a Derived Column Transformation.
 Add and Configure a Sort Transformation.
 Add and Configure a Lookup Transformation.
 Successfully Deploy a Project.

Module 4: SQL 2012 Business Intelligence Semantic Model (Multidimensional Mode)

In this module we cover the basics of using multidimensional mode and the tools available. In data warehousing there are two commonly acknowledged approaches to building a decision support infrastructure, and you can implement both using the tools available in SQL Server Analysis Services 2012 multidimensional. We will go over these two approaches and we will also cover key concepts for using multidimensional mode.

Lessons

The Data Warehouse/Data Mart

The Tools

Key Concepts

Data Sources

Data Views

Cubes

Data Profiler

Proactive Cache

Wizards

Lab : SQL 2012 Business Intelligence Semantic Model (Multidimensional Mode)

Create a Sample or Test Database

Explore the Key Objects

Creating a Server-Side Time Dimension

Create a Data Source and Data View

Explore the Cube

Partitions

Aggregations

Data Profiler

Proactive Cache

Deploy and Process

Build a Cube

After completing this module, students will be able to:

Create a Sample or Test Database.

Successfully Navigate and Use Key Objects.

Create a Server Side Time Dimension.
 Create a Data Source.
 Create a Data View.
 Successfully Navigate a Cube.
 Successfully Navigate and Configure Partitions.
 Use the Aggregation Design Wizard.
 Create and Configure a Data Profiling Task.
 Configure Proactive Cache.
 Deploy and Process a Project.
 Build a Cube.

Module 5: Microsoft Multidimensional Expressions

There are some striking differences between SQL and MDX, and you should be aware of these differences at a conceptual level. The principal difference between SQL and MDX is the ability of MDX to reference multiple dimensions. Although it is possible to use SQL exclusively to query cubes, Analysis Services MDX provides commands that are designed specifically to retrieve data as multidimensional data structures with almost any number of dimensions. We will go over key concepts in multidimensional space and browse some basic MDX statements with specific coverage on navigating hierarchies and working with time.

Lessons

Concepts in Multidimensional Space
 Basic MDX Statements
 SQL Server Management Studio MDX Query Editor
 Navigating Hierarchies
 Working with Time
 Microsoft Multidimensional Expressions
 Lab : Microsoft Multidimensional Expressions
 Explore MDX
 Write MDX (Optional)
 Explore MDX – Immediate Relatives
 Write MDX – Immediate Relatives (Optional)
 Working with Time
 Writing MDX - Working with Time (Optional)
 After completing this module, students will be able to:
 Understand the Functionality of MDX.
 Write MDX.
 Understand How to Use MDX to Navigate Hierarchies.
 Write MDX Navigating Hierarchies.
 Understand Working with Time in MDX.
 Write MDX Working with Time.

Module 6: SQL 2012 Business Intelligence Semantic Model (Tabular Mode)

If you are starting an Analysis Services 2012 project with no previous Multidimensional or OLAP experience, it is very likely that you will find tabular much easier to learn than multidimensional. Not only are the concepts much easier to understand, especially if you are used to working with relational databases, but the development process is also much more straightforward and there are far fewer features to learn. Building your first tabular model is much quicker and easier than building your first multidimensional model. It can also be argued that DAX is easier to learn than MDX, at least when it comes to writing basic calculations, but the truth is that both MDX and DAX can be equally confusing

for anyone used to SQL. In this module we cover the basics of using tabular mode and the tools available.

Lessons

The Tabular Model

Data Analytic Expressions (DAX)

The Editor

Data Connections

Creating a Tabular Project

Relationships

Measures and Calculated Columns

Hierarchies

Perspectives

KPIs

Partitions

Processing

Deployment

Lab : SQL 2012 Business Intelligence Semantic Model (Tabular Mode)

Creating a Project and Importing Data

Manually Add a Relationship

Create Measures and Calculated Columns

Create Hierarchies

Create a Perspective

Create a KPI

Process Data and Deploy

Connect to a Tabular Model

After completing this module, students will be able to:

Creating a Tabular Project.

Import Data Using the Table Import Wizard.

Manually Add a Relationship.

Create Measures.

Create Calculated Columns.

Create Hierarchies.

Create Perspectives.

Create KPIs.

Process Data.

Deploy a Solution.

Connect to a Tabular Model Using Excel.

Module 7: SQL Server 2012 Reporting Services

In this module we will cover the new and exciting features available in SQL 2012 Reporting Services. Report Lifecycles are discussed along with the tools available to create just about any type of report you can think of. Effective reporting is a key element in business intelligence and this module covers all the basics.

Lessons

Report Lifecycles

Installation Modes

Report Creation Tools

Data Sources

Datasets

Basic Reports

Graphics

Maps

Report Parts

Lab : SQL Server 2012 Reporting Services

Using Report Manager

Using Report Designer

Data Sources and Datasets

Basic Reports

Graphics

Basic Maps

Basic Maps with Color

Report Parts

After completing this module, students will be able to:

Locate, Access and Use Report Manager.

Use Report Designer.

Create and Configure Data Sources.

Create and Configure Datasets.

Create and Configure a Basic Report.

Create and Configure Graphics.

Create and Configure Maps

Create and Configure Report Parts.

Module 8: Master Data Services

It is often said that Master Data Management (MDM) enables an enterprise to create and use a “single version of the truth”. Master data management applies almost all industries and covers a broad category of corporate data. This module covers Master Data Management and explains what it is and why it is important. Along with covering system roles and the differences between master data and transactional data, we also go over key concepts in Master Data Services and the benefits of proper implementation.

Lessons

What is Master Data Management?

System Roles

Master Data vs. Transactional Data

Master Data Services ETL

Master Data Services Key Concepts

Lab : Master Data Services

Create a Model

Create Entities

Create Members

Create Attributes

Create a Business Rule

Deploy Model

Load Data

Create a Subscribing View

After completing this module, students will be able to:

Create and Configure a Model.

Create and Configure Entities.

Create and Configure Members.

Create and Configure Attributes.
 Create a Business Rule.
 Deploy a Model.
 Load Data.
 Create a Subscribing View.

Module 9: Data Mining/Predictive Analytics

Data Mining using SQL Server 2012 uses the concept of a SQL Service not an application. Because it is a service and not an application the software has the ability to scale unlike an application. In this module we explain the concept of data mining and how it can be a valuable tool in your business intelligence arsenal.

This module is a subset of the course on Data Mining which is in-development.

Lessons

Definitions for Our Purpose

Problems Addressed

Business Analytics

CRISP-DM

Key Concepts

Microsoft Data Mining Process

Data Mining Tasks

Microsoft Algorithms

Matching the Tasks to the Algorithm

Data Mining Add-in for Excel

Lab : Data Mining/Predictive Analytics

Using the Data Mining Add-in for Excel

After completing this module, students will be able to:

Use the Data Mining Add-in for Excel

Module 10: SharePoint 2013 Business Intelligence Center

In this module, we will explore the new and improved 2013 SharePoint Central Administration site.

We are going to cover specifically the new 2013 Business Intelligence Center template within SharePoint. We are also going to cover some things that generically apply to SharePoint that you can use within business intelligence. Permissions and Roles will be illuminated and the included Document Library and List apps will be explained.

Lessons

New 2013 SharePoint Central Administration

New 2013 Business Intelligence Center

Permissions and Roles

Included Document Library and List Apps

Lab : SharePoint 2013 Business Intelligence Center

SharePoint 2013 Central Administration

SharePoint 2013 Business Intelligence Center (Optional)

After completing this module, students will be able to:

Explore the options and settings available within the new SharePoint 2013 Central Administration.

Create a new web application and business intelligence site while exploring the features of both.

Module 11: SharePoint 2013 Excel Services

In this module, we will go over all the new 2013 Excel Services features, and we will explore the core components of Excel Services. We will cover Excel Web Access and it's capabilities along with any

differences you may encounter in the browser as opposed to the desktop client. There is coverage of the Power View add-in for Excel, and then lastly we will explain the save and share process and have a look at best practices.

Lessons

New 2013 Excel Services Features

Core Components

Excel Web Access (EWA)

What Excel Web Access is Not

Differences in the Browser vs. Desktop

SharePoint Libraries to Store Workbooks

Power View Add-in for Excel

The Save and Share Process

Excel Web App

Best Practices

Lab : SharePoint 2013 Excel Services

Creating a Library to Hold Excel Workbooks

Exploring the Power View Add-in for Excel

Save and Share an Excel Workbook to a SharePoint Document Library

Add an Excel Web App to a Webpage

After completing this module, students will be able to:

Create a SharePoint library to hold Excel workbooks and explore trusted file locations.

Utilize the Power View add-in for Excel

Create an Excel workbook with a parameter and save it to a SharePoint document library.

Add Web Apps to a webpage.

Module 12: SharePoint 2013 PerformancePoint 2013

In this module, we will give you an overview of the new 2013 PerformancePoint Services features.

Dashboard Designer is explored along with many of the objects and connections available within.

Lessons

New 2013 Overview of PerformancePoint Services

Dashboard Designer

Data Sources

Indicators

KPIs

Visual Reports

Filters

Scorecards

Dashboards

Lab : SharePoint 2013 PerformancePoint 2013

PerformancePoint Services Dashboard Designer Introduction and Data Source Configuration

Standard or Blank KPI Demonstration

Leaf KPI Demonstration

Objective KPI Demonstration

Visual Reports

PerformancePoint Filters

PerformancePoint Cascading Filters

Time Intelligence Filters

Scorecard Settings

Scorecards Filtered Using the Wizard

PerformancePoint Dashboards

After completing this module, students will be able to:

Explore the Dashboard Designer interface and know how to create and configure a data source.

Create and configure a standard KPI and a scorecard.

Create and configure a leaf KPI and a scorecard.

Create two blank KPI's and then roll them into an objective KPI.

Create and configure an analytic chart and an analytic grid, add them to a dashboard, deploy them to SharePoint, and explore the options available.

Create and configure a filter, and tie the filter into both the analytic chart and analytic grid created earlier.

Create and configure a cascading filter and then tie it into a new analytic chart and grid.

Create a Time Intelligence data connection, a Time Intelligence filter, and create a report using both.

Create four copies of the Objective Scorecard, configure settings in each of the four copies, and deploy them to SharePoint in a dashboard.

Create a new leaf KPI and use that KPI in two new scorecards, one with a filter configured, and one without.

Create a new dashboard with two pages and review editing options.

Module 13: SharePoint 2013 Visio Services

Visio drawings can be extremely effective and in this module we cover the shared service that allows users to share and view them. We will go over all the new 2013 Visio Services features and also discuss data-connected drawings and how to configure them. There is also a section on viewing drawings within a browser.

Lessons

New 2013 Visio Services Features

Visio Graphics Service

Visio Drawings in the Browser

Visio Web Access Web Part

SharePoint 2013 Visio Services

Lab : SharePoint 2013 Visio Services

Visio Drawing in the Browser

Visio Services Data-Connected Drawing

Dashboard Strategy Maps

After completing this module, students will be able to:

Create a drawing, upload the document to the Student BI Site documents library, and view the drawing in a browser.

Create a data-connected drawing and upload the document to the Student BI Site documents library.

Create an objective scorecard and matching strategy map, place them in a dashboard, and then upload the dashboard to the Student BI Site.

Module 14: PowerPivot

PowerPivot is not a feature of SharePoint business intelligence, however, an Excel workbook with PowerPivot can be saved to a SharePoint site and then used in a business intelligence scenario. This module is intended as an overview of the product only and covers all the new features available in the 2013 release of the add-in.

Lessons

New 2013 PowerPivot Features

PowerPivot and Excel

PowerPivot and SharePoint

Enterprise Business Intelligence and PowerPivot

Importing Data

Enriching Data

SharePoint Sharing

Lab : PowerPivot

Import Data from SQL

Review and Edit the Imported Relationships

Hide Unused Columns

Create a PivotTable

After completing this module, students will be able to:

Use PowerPivot within Excel to import a table from SQL Server.

View the relationships existing within the imported tables from SQL Server and then import an additional table and configure a relationship between it and the existing.

Hide columns they don't want reflected in the resulting PivotTable.

Create a PivotTable within an existing worksheet.

Module 15: SharePoint 2013 Business Connectivity Services

In this module we will explore the new features available within SharePoint 2013 Business Connectivity Services, how to configure the security, and clarify the terminology.

Lessons

New 2013 Business Connectivity Service Features

What is Business Connectivity Services?

BCS Terminology

BCS Security

Using SharePoint Designer 2013 with BCS

Surfacing the BCS Data

Lab : SharePoint 2013 Business Connectivity Services

Setting Permissions on the BDC Store

Exploring Content Types in SharePoint

Add a Document Library Tied to Content Types

Creating an External Content Type

Creating an External List

Configuring the Business Connectivity Services for a Host URL & Setting up a Profile Page

Add a Custom Action to a List

After completing this module, students will be able to:

Assign administrators and permissions on the BDC Metadata Store.

Explore the different content types available in SharePoint 2013 and learn how to locate them and their corresponding settings.

Create a document library, configure it to accept specific content types, and then learn how to delete the document library.

Create and configure a new external content type.

Create an external list associated with the new external content type created prior.

Create a new external content type and a new host URL, and then create an external list and profile page.

Add a custom action to an external list.

Module 16: Dashboards

This module borrows from the three-day Microsoft course on Dashboards number 50596A.

Monitoring, analyzing, and managing dashboards are discussed along with details on how to use

them most effectively. This module does not cover Dashboard Designer as it is covered in more detail in the PerformancePoint Services module. Coverage of the Microsoft Report Builder 3.0 tool is brief as this course focuses on the SharePoint space.

Lessons

Dashboard Migration

Three Types of Dashboards

Successful Dashboards

Tables or Graphs

Types of Graphs

Choosing a Chart Type

Key Performance Indicators

Pitfalls In Dashboard Design

Microsoft Report Builder 3.0

Plan Your Reports

Datasets

New 2013 SharePoint Designer Features

SharePoint Web Apps

Lab : Dashboards

Explore the Report Builder 3.0 Interface (Optional)

Create an Embedded Data Source into SQL 2012 Engine (Optional)

Create an Embedded Data Source into SQL 2012 Analysis Services (Optional)

Create a Shared Data Source Using the Report Manager (Optional)

Create a Shared Dataset Using the Shared Data Source (Optional)

Three Methods for Connecting Dashboard Web Apps

After completing this module, students will be able to:

Navigate the Report Builder 3.0 interface.

Create an embedded data source connecting into a database.

Create an embedded data source connecting into an OLAP database.

Create a shared data source using the Report Manager.

Create a shared dataset using the shared connection they created in the previous exercise.

Create a new dashboard and explore three different ways to connect the Web Apps.