Creating Solutions with Microsoft Business Analytics and AI – Train the Trainer

( https://aka.ms/cisw002 )

There are many resources you can use to learn the technologies Microsoft has for advanced analytics, such as documentation sites, the Microsoft Virtual Academy and more. Each of these resources can lead your customers through the specifics of Machine Learning, the Azure Data Catalog, Microsoft R and more to a very detailed level. But the amount of documentation and the spread of platforms it lives on can be overwhelming not just for the customer, but for the technical and business teams that face the customer who wants to implement an advanced analytics solution.

The “Building Solutions with Microsoft Business Analytics and AI” course leads a technical professional through 2 days of intensive, hands-on, lab-based instruction by the AI and Research team. This course has been taught at multiple locations around the world. It uses the Team Data Science Process (TDSP) and multiple technologies to guide the team through an end-to-end solution highlighting multiple technologies from ingestion, inspection, processing, routing, Machine Learning, and consumption of the results. The customer gets a “big picture” with a high level of detail and multiple resources to be successful.

These instructions are aimed at the trainer for this course. It’s designed to explain how the course works, what you need to learn to teach it, and how to run the class. It also covers how to alter the course to a one-day or half-day course, and how to break apart the modules and topics into smaller content, customer demos, or presentations. You’ll also learn how to edit the material to use a customer solution in place of the solution in the course, as a possible demo or POC. You’ll receive all instruction, labs, and resources you need to redeliver and redesign the course.

# Agenda:

1. Introduction and Overview
2. Full Course Training
   1. Setting up the course
      1. Primary resources are here: <https://github.com/Azure/LearnAnalytics-Building-Solutions-with-the-Cortana-Intelligence-Suite>
      2. Before you teach the class, walk through every link, ensure they are correct, if not, update them.
   2. Resources the student need
      1. You can Export the Slides as "Handouts" - we use Word, the top-slide view, and then add in document properties and formatting. These serve as your student workbooks.
      2. An Azure Account – Corp, MSDN, Free and Azure Pass options.
      3. Azure Data Catalog - Read this and understand it carefully: <http://www.sqlchick.com/entries/2016/4/20/how-to-create-a-demo-test-environment-for-azure-data-catalog>
   3. Timing and classroom management
      1. Practice is key. Fit the content to the time. Adjust as needed - everything is in the handouts.
      2. Note that almost all labs build on each other - work through each yourself so that you can proctor your own class.
      3. Adapt to the room - each of the sections in the course can be used for beginner, intermediate and advanced. You will most likely always have a "mixed" audience. Poll this when they come in the room, be ready to deliver all three levels.
   4. Course Content overview (you can use this to advertise your course)

*Course Number:*

*CISW002*

*Course Topics:*

*Microsoft Business Analytics and AI*

*Intended Audience:*

*Technical professionals (Data Scientists, Database Professionals, Analysts, BI Professionals) who are familiar with building solutions but not familiar with the entire CIS Platform of products.*

*Course Level:*

*Intermediate*

*Title:*

*Building Solutions with Business Analytics and AI*

*Description:*

*In this hands-on workshop you’ll cover a series of modules that guide you from understanding an analytics workload, using the Team Data Science Process, the Microsoft Business Analytics and AI Platform, the foundations of data transfer and storage, data source documentation, storage and analytics processing using various tools in a comprehensive solution.*

*About the Course:*

*In this workshop you’ll cover a series of modules that guide you from understanding an analytics workload, using the Team Data Science Process, the Microsoft Business Analytics and AI Platform, the foundations of data transfer and storage, data source documentation, storage and analytics processing using various tools in a comprehensive solution. You’ll learn how to work through a real-world scenario using the Microsoft Business Analytics and AI tools, including the Microsoft Azure Portal, PowerShell, and Visual Studio, among others. You'll learn how to leverage the Solution Portal to rapidly deploy a pre-configured solution, and you'll learn how to modify a solution for a real-world implementation.*

*This course is designed to take approximately one to two days, depending on what is covered and how many of the labs are done in-class. The longer course is marked (Extended Class). All materials are provided regardless of the length of the course.*

*Prerequisites:*

*There are a few things you will need in order to properly follow the course materials:*

*A subscription to Microsoft Azure (this may be provided through your company or as part of your invitation – you must have this enabled prior to class – you will be using Azure throughout the course, for all labs, work and exercises). You can use your MSDN subscription – https://azure.microsoft.com/en-us/pricing/memberoffers/msdn-benefits/, your employer may provide Azure resources to you, but make sure you check to see if you can deploy assets and that they know you’ll be using their subscription in the class.*

*A laptop capable of using the Remote Desktop Protocol (RDP) - all lab work will be done on the Microsoft Azure Windows Data Science Machine.*

*Agenda:*

*Module 1: Setup and Environment - Understanding the Azure Platform, DevOps for Data Science, and Toolkits*

*Module 2: Business Understanding - Defining objectives, data source vetting, creating design document, creating decision matrix, selecting solution elements, data flow*

*Module 3: Data Acquisition and Understanding - Ingest data, explore data, update data*

*Module 4: Modeling - Feature Selection, Create and train model*

*Module 5: Deployment - Operationalize*

*Module 6: Customer Acceptance - Testing and validation, Handoff, Re-train and re-score*

*Skills taught:*

*Understand the Advanced Analytics Process (General level), Understand Microsoft Business Analytics and AI Components (General Level), Set up and configure the development environment*

*Understand how to source and vet proper data, Understand feature selection, Understand Azure Storage Options, Use various methods to ingest data into Azure Storage, Examine data stored in Azure Storage, Use various tools to explore data*

*Understand ADF and its constructs, Implement an ADF Pipeline referencing Data Sources and with various Activities including on-demand HDInsight Clusters,*

*Understand how to use Azure ML and how experiments are created, Understand how MRS can be used to perform Machine Learning experiments, Use ADF to schedule Azure ML Activities*

*Understand how to evaluate the efficacy and performance of an Azure ML experiment, Understand how to evaluate the efficacy and performance of an MSR ML experiment, Access and show data from Azure Storage, Access, and Query Azure SQL DB*

*Understand how to publish an Azure ML API, Understand the access methods of Azure Storage and Intelligent Processing, Understand the options to send a HIVE query to an HDI system, Use Power BI to query the results of a solution and create reports in Power BI Desktop, Power BI Service, and Power BI in Microsoft Excel*

*Understand when to use each component within Microsoft Business Analytics and AI*

1. Course Content Alteration
   1. Creating a one day and half day course
   2. Course Customization
      1. Creating sub-courses on each Module / Lesson
         1. Pull out the module from the graphics or topic heading
         2. Ensure that you have all relevant material - you can make the topic too brief
         3. Always consider adding in the Process and Platform material
         4. Labs and concepts build on each other through the course, so ensure you check each lab or demo you include to ensure they still work. You may have to include an earlier set of material
      2. Substituting your customer’s scenario
         1. The main scenario is what you replace, with the diagram and the solution elements.
         2. You can also change the Business Scenario and associated slides to have the actual story from the customer. The process parts and components remain the same.

Lab:

1. Open this location: [https://gallery.cortanaintelligence.com/browse?categories=["10"]&orderby=freshness desc](https://gallery.cortanaintelligence.com/browse?categories=%5b%2210%22%5d&orderby=freshness%20desc)
2. Find a solution that fits a customer scenario you are working on or will work on
3. Create a Business Problem Document, a Design Words document, and a Decision Matrix (as described in Module 6 of the course materials you saw in class) for this scenario
4. Optional: If there is no solution that is close to what you need, create the elements in #3 and discuss with class the process for creating a solution diagram