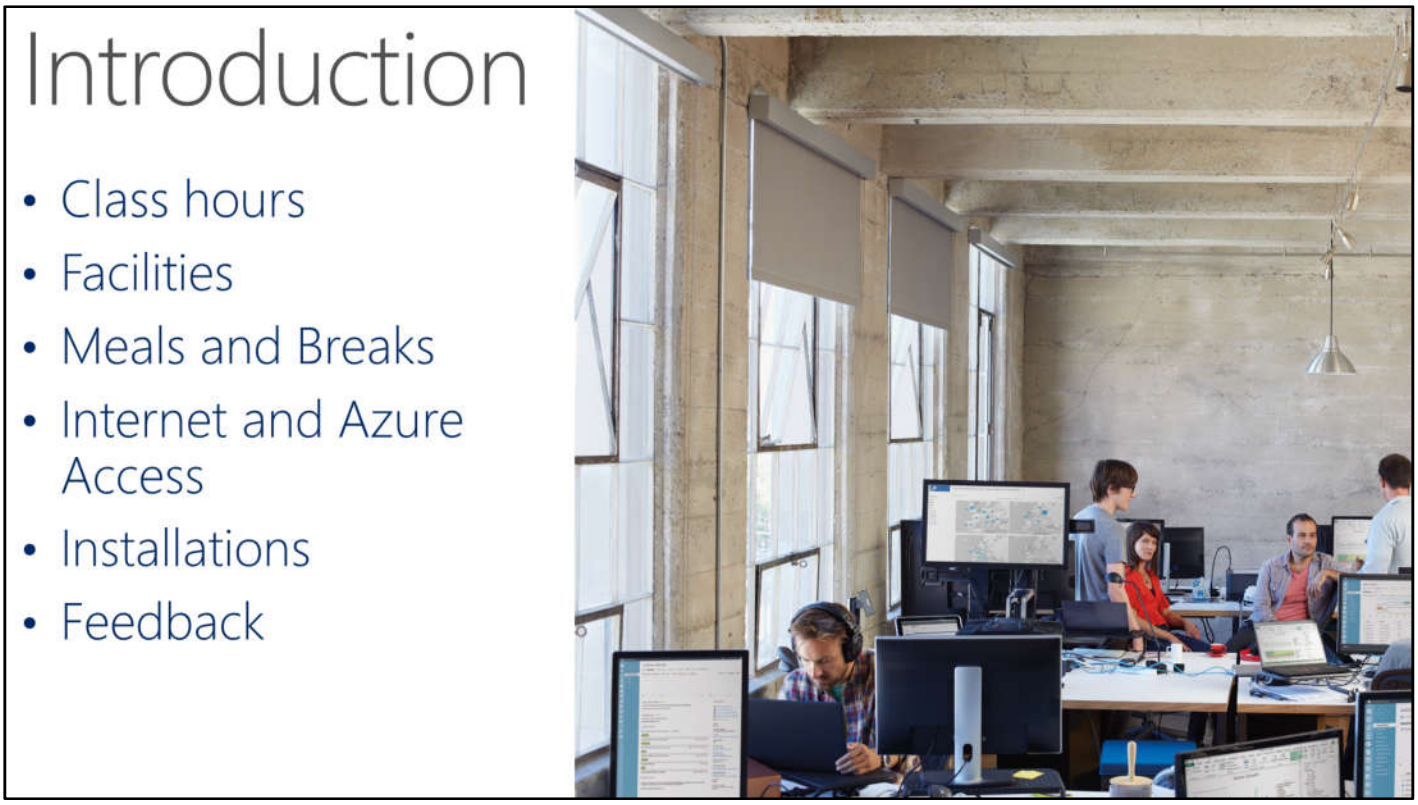
1. Main page: https://www.microsoft.com/en-us/server-cloud/cortana-intelligence-suite/
2. To begin this module, you should have:
    1. Basic Math and Stats skills
    2. Business and Domain Awareness
    3. General Computing Background



There will be a general feedback form, but after each module you are asked if you can complete the objectives. If you cannot, let the instructor know.

There are a few things you need prior to coming to class:

• A background in data technologies, such as working with Relational and Non-Relational data processing systems

• A general level of predictive and classification Statistics

• A general understanding of Machine Learning

• A subscription to Microsoft Azure (this may be provided through your company or as part of your invitation)

• A laptop with Visual Studio installed – the Community Edition (free) is acceptable – Version 2015 preferable (https://www.visualstudio.com/en-us/products/visual-studio-community-vs.aspx)

• Azure SDK and Command-line Tools installed (https://azure.microsoft.com/en-us/downloads/)

• Azure Storage Explorer (http://go.microsoft.com/fwlink/?linkid=698844&clcid=0x409)

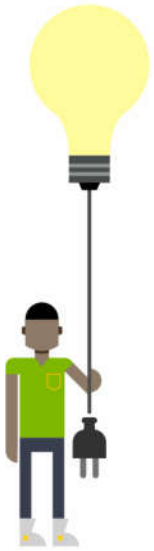
• Power BI Desktop (https://powerbi.microsoft.com/en-us/desktop/)

Module 1 Learning Objectives

1. Have a general Workshop Process awareness
2. Understand and interpret problem a Statement for a given Customer Scenario
3. Understand the Data Science Process (at a general level)
4. Understand architecture development basics

1. At the end of this Module, you will:
    1. Have a general Workshop Process awareness
    2. Understand and interpret problem a Statement for a given Customer Scenario
    3. Understand the Data Science Process (at a general level)
    4. Understand architecture development basics

Data Science Overview

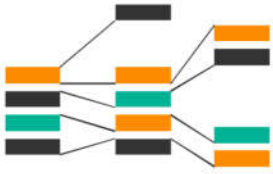


- Determining the actual problems to solve
- Identifying and vetting data sources
- Defining the data path
- Create Cleansing and Homogenizing Processes
- Create Feature Selection process (where needed)
- Create Computation Processes (Predictive or Classification)
- Create Output and Presentation Instruments

1. The Data Science Process: http://columbiadatascience.com/2012/09/24/reflections-after-jakes-lecture/

Creating Architectures, High Level

- Decompose problem statement
- Develop Requirements
- Develop Constraints
- Create a Logical Solution Flow



1. General Software Architecture Design Approach - https://msdn.microsoft.com/en-us/library/ee658084.aspx

Business Case

AdventureWorks is a company that makes and sells bicycles. The sales are conducted around the world. We also support our products. Interestingly, the issue we're facing is in our facilities.

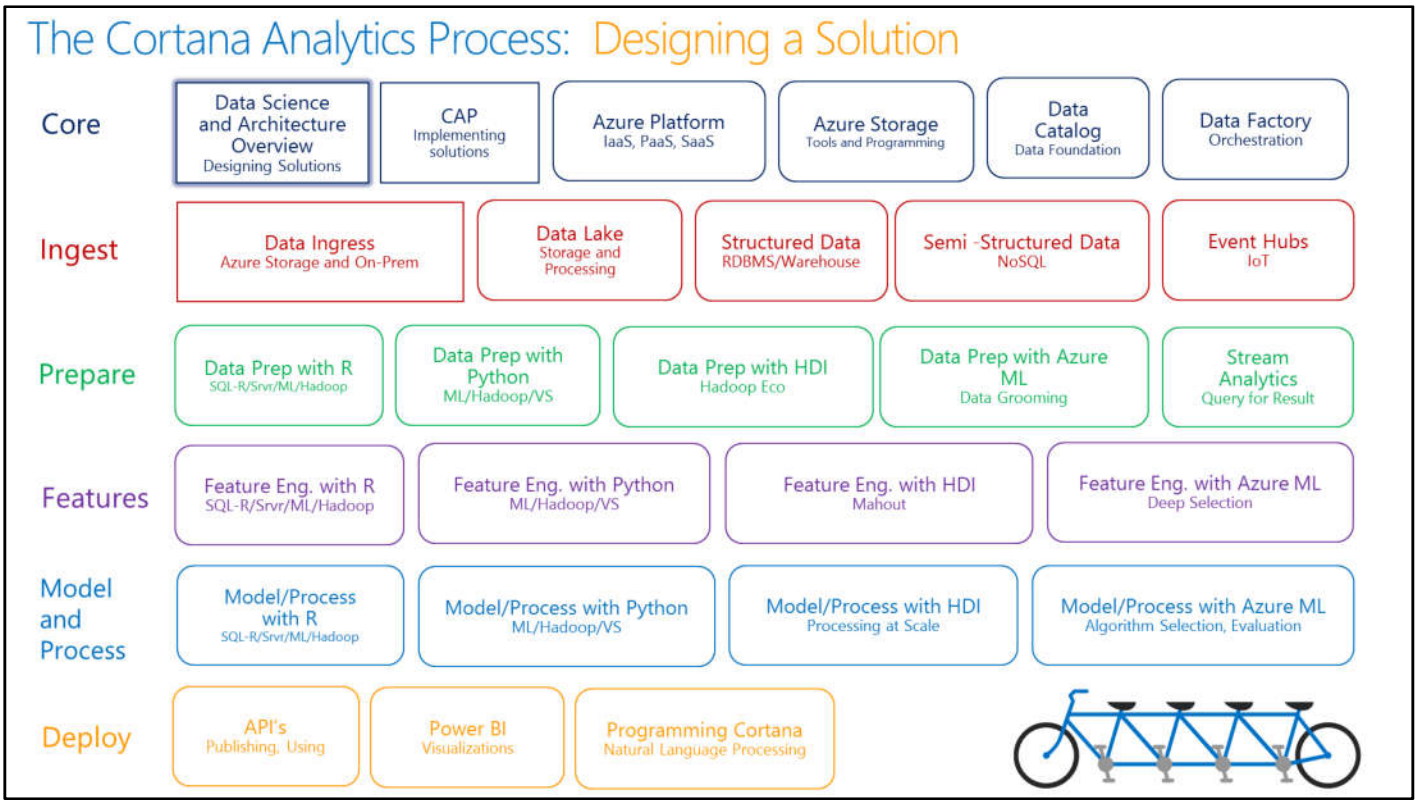
We need to know a lot more about our HVAC systems – they are critical to the machinery that creates the fine-detail parts on our products. The HVAC systems have sensors that create a lot of data – several million records a day, in fact.

We have facilities around the world, and when a facility runs "hot", we have to shift production to another part of the world. With our just-in-time manufacturing process, this has huge financial impacts. We've had situations where the systems ran hot and we shifted production to another location (at great cost), and then we found it was an anomaly in the reporting system.

Ideally we want a graphic that shows our management team the map of where our HVAC systems are, and their daily status.

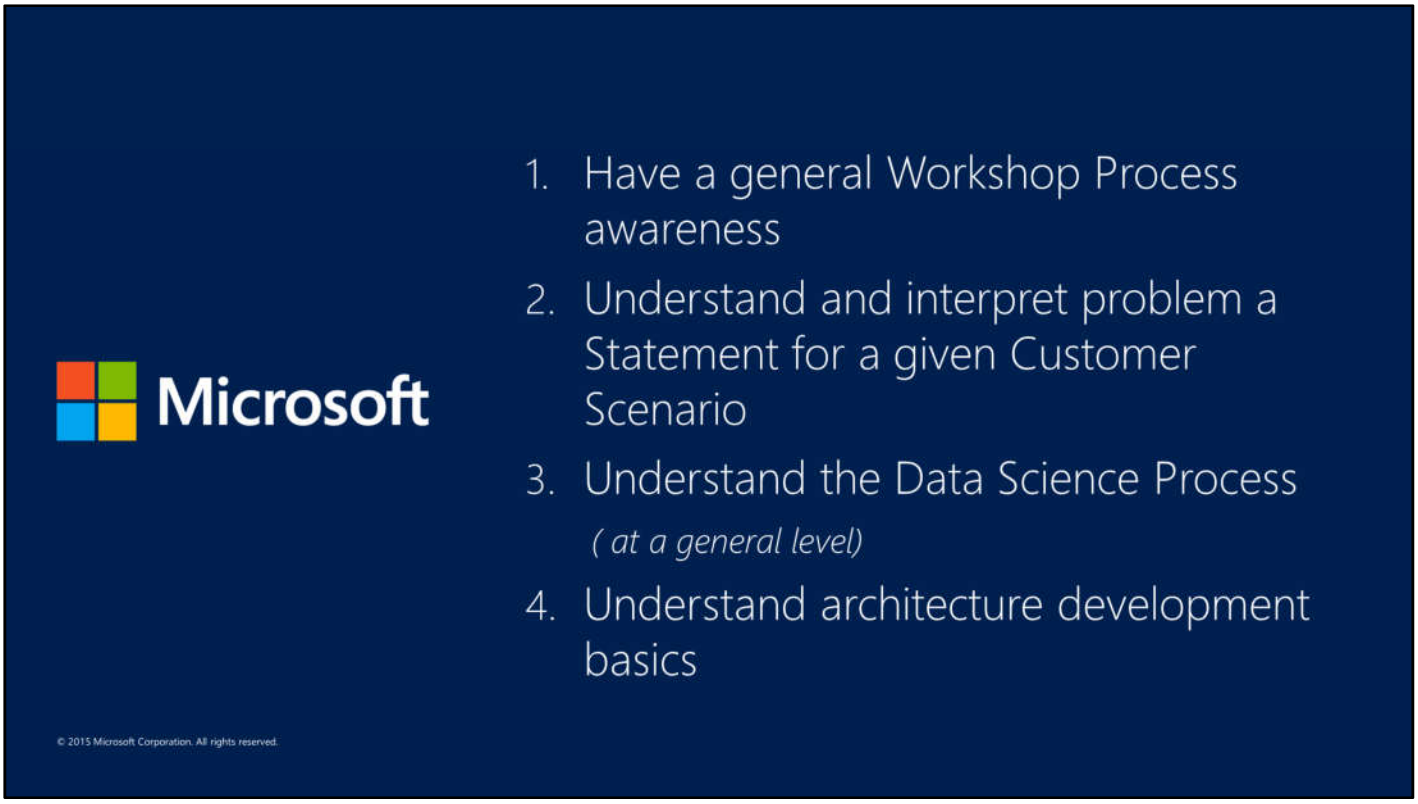
More on our in-house data: https://technet.microsoft.com/en-us/library/ms124501%28v=sql.100%29.aspx

1. The AdventureWorks Scenarios: https://technet.microsoft.com/en-us/library/ms124501%28v=sql.100%29.aspx



1. The Cortana Intelligence Process: https://azure.microsoft.com/en-us/documentation/learning-paths/cortana-analytics-process/
2. Microsoft Azure main page: http://microsoftazure.com

1. Using the business case stated, use the Architecture Creation Process to create a logical architecture.
2. Focus on the Logical architecture – do NOT include any technologies, just specify the data movement path and the requirements for the logical operations that will be performed.
3. Are there any questions you should ask the business at this point? Who should you ask?
4. Include as many variables as you think you need to ask the client to design a good solution.
5. Refer to pages 4, 5, and 6 for source material.


Microsoft
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