Data Literacy Primer

by David Wells

Module 0. About the course

Module 1. The Basis of Data

- Kinds of Data
    - Quantative Data
    - Qualitative Data
    - Categorical Variables
    - Identifiers
    - Event and Reference Data
    - Structured and Unstructured Data
- Kinds of Databases
    - What is (and isn't) a database?
    - Files
    - Spreadsheet
    - Relational Database
        - Tables, Rows & Columns
        - Keys & Relationships
        - Structured Query Language
        - SQL SELECT Statement
        - NoSQL Databases: Key-Value Store
        - NoSQL Databases: Document Store
        - NoSQL Databases: Graph Database
- Data and You

Module 2: Data Management

- What is Metadata?
- Using Metadata
- Data Governance
    - Managing Data as an Asset
    - What, How & Who?
    - What & Why?
    - Sensitive Data
- Data Ethics Hard Questions
- Data Management and You

Module 3: Data Recourses

- What are Data Resources?
- Kinds of Data Resources
    - Operational Data
    - Data Warehouse
    - Data Warehouse with Multidimensional Data
    - Multidimensional Data and OLAP
    - Data Lake
    - Data Warehouse vs. Data Lake
    - Master Data Management (MDM)
- Data and You

Module 4: Data Analysis

- The Analysis Process
- Analysis Techniques
- Problem Framing
- Finding Data
    - Data Requirements
    - Crowdsourcing
    - Data Catalog
    - Data Acquisition
- Evaluating Data
- Exploring Data
    - Column Profiling
    - Table Profiling
    - Cross Table Profiling
    - Visualize Distribution
    - Visualize Relationship
- Preparing Data
    - Data Cleansing
    - File Structure
    - Data Blending
    - Data Enrichment
    - Data Formatting

- Analyzing Data
  - Analysis Techniques
    - The Basics
    - Finding Value & Meaning
  - Analysis Techniques & Data Analyst
- Acting on Analysis
- Data Analysis and You

Module 5: Data Visualization

- Data Visualization Functions
- Common Charts and Graphs
- Visual Composition
- Creating Data Visualizations
- Reading Data Visualizations
- Data Visualization and You

Module 6: Data Literacy and You

- Data in Your Work Life
- Data in Your Personal Life
- Working with Data
- Data Literacy
- Self-Assessment