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TODAY'S PRESENTATION

Course Description:

This course explores:

We will discuss our needs for data, and how we can share our data with our institution's vast data resources. Facilities Management energy, maintenance, financial, space management and other data is fast becoming another sought-after campus utility that should be available to the entire institution in an integrated, globally acceptable manner. To do our jobs, it's not enough to just know how to use data applications, we need to understand how an integrated, easily accessible "data warehouse" can optimize the performance of those applications.

Learning Objectives:

- 1. Become familiar with database structures
- 2. Become familiar with integrating databases
- Learn how this can be useful to those who work in FM
 Think about how to convert data into information
- Begin to think about how the various sources of data in your institution can be integrated and used.

AGENDA

- What is data?
- Database versus Data Warehouse
- Data Integration
- Group Discussion
- If time permits, Converting data into information
 - Metrics, kpiExample applications

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WORDS OF WISDOM

Knowing that a tomato is a fruit? That's Data.

Knowing not to put one in a fruit salad? That's Knowledge.

With apologies to Brian O'Driscoll

DEFINITION

What is data?

Raw facts that are persistently collected and stored for conversion into information used to inform business processes.

It must be accurate, documented, and managed on an ongoing basis to ensure its value to the organization.

It must be delivered to the institution on a continuous, asneeded basis.





- Technique for assembling and managing data from various sources for the purpose of answering interrelated questions, allowing for decisions that were not previously easily reached.
- A decision support (analytics) database maintained separately from the organization's operational databases

CHARACTERISTICS OF DATA WAREHOUSE

- **Subject oriented.** Data are organized based on how the users refer to them.
- Integrated. All inconsistencies regarding naming convention and value representations are removed.
- **Nonvolatile**. Data are stored in read-only format and do not change over time.
- **Time variant**. Data are not current but normally time series.

CHARACTERISTICS OF DATA WAREHOUSE

- **Summarized** Operational data are stored in a decision-usable format
- Large volume. Time series data sets are normally quite large.
- Metadata. Data about data are stored.
- Data sources. Data come from internal and external unintegrated operational systems.

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THE METADATA

- The name suggests some high-level technological concept, but it really is fairly simple. Metadata is "data about data".
- With the emergence of the data warehouse as a decision support structure, the metadata are considered as much a resource as the business data they describe.
- Metadata are abstractions -- they are high level data that provide concise descriptions of lower-level data.

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DATA INTEGRATED

- Integration –consistency in naming conventions and measurement attributes, accuracy, and common terms.
- Establishment of a common unit of measure for all synonymous data elements from dissimilar databases.
- The data must be stored in the DW in an integrated, globally acceptable manner













INTERACT-QUERY

• What do you do?

- What data do you gather (or should gather), and who uses it?
- What data does your function need?
- What data is most important to your particular function?
 - Is some or all of it gathered by some other function?
 - How easy is it to get/use?

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INTERACT-SUMMARIZE

- What data is most used?
- What data is most required for our various functions?
- What are the most common reasons why the data is needed?
- Who gathers most of the data?

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INTERACT-SYNTHESIZE

- What data is collected by other functions in your organization that you can/want to use?
- What data is collected institutionally that can be used to meet your needs?
- What formats does the data require, i.e. spreadsheet, dashboard, formal reports, etc.?
- How can we convert the data into information in the required format(s)?













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SUMMARY

Data-> Integration-> Information -> Knowledge: Convert DATA into INFORMATION Convert INFORMATION into KNOWLEDGE

- Gather dispersed and disparate application data from multiple sites, multiple suppliers and different multiple databases.
- Validate the data and manage missing or erroneous data.
- Convert the raw data into usable management information, particularly meaningful Key Performance Indicators (KPIs).
- Generate meaningful, added-value reports that include the analysis of trends and exceptions.
- Distribute the analyses and reports across multiple sites, internally and externally, in a fimely fashion.

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