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Data Interoperability Workshop

Abstract:

Many organizations commonly face vexing data interoperability problems. For example:

A VP demands a consolidated customer sales report across product lines across different divisions. He wants it by the end of the week. Energetically you dig into the request just to discover that a sale is defined differently across the different products and across the divisions. Some have it as gross, some net before taxes, some after taxes. Worse yet, there are codes everywhere. Some have the same code name but there are different value sets with different meanings. Worse even still, you find that some record average daily sales, some by the sale, and some others you just cannot figure out. Of course the VP also wants it consolidated by customer. Right, what's a customer?

This problem is squarely faced by the Data Interoperability Workshop. This brochure describes the Data Interoperability Workshop that occurs over five days. By data interoperability we don't mean, can you merely add sales from one division and product line to another? But rather discern if these sales amounts for the same type of sales (i.e., gross vs net) with the same granularity (individual invoice, by salesman, product or organizational unit), precision (precise numbers, rounded, or averaged), and collection synchronization (i.e., daily, weekly, or real time)? That's understanding-based data interoperability. Until you have understanding-based data interoperability you won't really have a good consolidated sales report to show the VP.

The problem domain of this course is understanding based data interoperability across an enterprise. Enterprise data systems are likely to have been developed from hundreds, if not thousands, of IT systems. Failed interoperability anywhere within the enterprise, from front line operations to supporting infrastructure, may result in lost sales, business opportunities, or in some organizations injury and death to employees. None of these are desirable outcomes. Personal injury or death puts a realistic edge on the problem to be solved.

Built, understanding-based interoperable data models enable managers and developers of IT systems to be able to know of each other, know whether different IT systems have shareable data, and if so, whether the potentially shared data really is both the definitive source for that data and if the data's semantics really means that it's the right data.

Approach

To build the understanding-based interoperable data model, this workshop employs a combination of methodology and supporting Whitemarsh metabase, which is a CASE/Repository system that enables IT



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Data Interoperability Workshop Topical Outline

Developers to inventory, cross reference, and posit shared IT system artifacts and shared data.

During the workshop, the methodology is presented and then, in the Workshops version, proven via a series of student driven workshops that involve the direct use of the metabase system in a multi-user networked shared environment. The Lectures version only provides a process overview of each workshop.

Students create, based on supplied resource materials, missions, organizations and functions. They intersect these so that there could be a clear picture of the required shared data functions that potentially exist within their organizations in support of assigned missions. Students then create expressions of the information needed to fulfill their shared-data functions.

Database schemas from database applications are then loaded into the metabase system and examined to determine their overlapping areas with respect to the shared data needs. During this analysis, business facts that are determined to be commonly used across different database table columns are cast into an ISO 11179 data element form and entered into the metabase database. This enables ISO 11179 data element cross-referencing across the operational database schemas.

Students then determine their shared data schemas and build them through the data modeling facilities contained in the metabase.

Once the shared database designs are created, an operational database design of this database is generated. Once generated, the data model artifacts of this database are imported into the Clarion for Windows software generation environment and the shared data access system is automatically created.

The workshop accomplishes a full cycle from the positing of requirements for shared data, the discovery of the shared-database design, the creation of the shared database design and then finally building the software system that supports the storing and access to the shared data. This entire effort is completed by the students and requires only analysis and design skills. No programming skills are required.

Requirements

In the Workshops version, students work in groups of three with a Whitemarsh supplied laptop (Windows XP) and a Windows 2003 operating system server. Access to the sever is through a wireless, secure network.

Materials

All attendees receive a Lectures book. Workshop attendees additionally receive a workshops book. Workshop attendees also receive at class end a CD that contains single-user version of the metabase system, a developer version of the SQL DBMS engine, a complete set of PDF-based lecture and workshop books, and the Metabase user guides.

These materials enable the attendee to utilize the metabase system, with accompanying seminar information, on their work site with real data applications. Attendees are given the URL necessary to then download a backup version of the interoperable database actually built during class. Attendees are also provided a year-long membership to the Whitemarsh website from which they can download updates to all the materials including the metabase CASE/Repository system.



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