



GL/KK Dimension and Fact Job Aid

The purpose of this job aid is to provide an explanation of dimensional data modeling and of using dimensions and facts to build analyses within the GL/KK Subject Areas.

Dimensional Data Model

The dimensional model is comprised of a fact table and many dimensional tables and is used for calculating summarized data. Since Business Intelligence reports are used in measuring the facts (aggregates) across various dimensions, dimensional data modeling is the preferred modeling technique in a BI environment.

STARS - OBI data model is based on Dimensional Modeling. The underlying database tables are separated as Fact Tables and Dimension Tables. The dimension tables are joined to fact tables with specific keys. This is usually called Star Schema.

The star schema separates business process data into facts, which hold the measurable, quantitative data about a business, and dimensions which are descriptive attributes related to fact data.

Examples of fact data include budget amount, expense amount, transaction amount etc.

Related dimension attribute examples include department, fund, SID, time etc.

Fact Tables:

Fact tables record measurements or metrics for a specific event. Fact tables generally consist of numeric values and foreign keys to dimensional data where descriptive information is kept. Fact tables are designed to a low level of uniform detail (referred to as "granularity" or "grain"), meaning facts can record events at a very atomic level. This can result in the accumulation of a large number of records in a fact table over time. Fact tables are generally assigned a surrogate key to ensure each row can be uniquely identified.

Dimension Tables:

Dimension tables have a relatively small number of records compared to fact tables, but each record may have a very large number of attributes to describe the fact data. Dimensions can define a wide variety of characteristics, but some of the most common attributes defined by dimension tables include

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- Time
- Employee
- Department



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Dimension tables are generally assigned a surrogate primary key, usually a single-column integer data type, mapped to the combination of dimension attributes that form the natural key.

Star Schema:

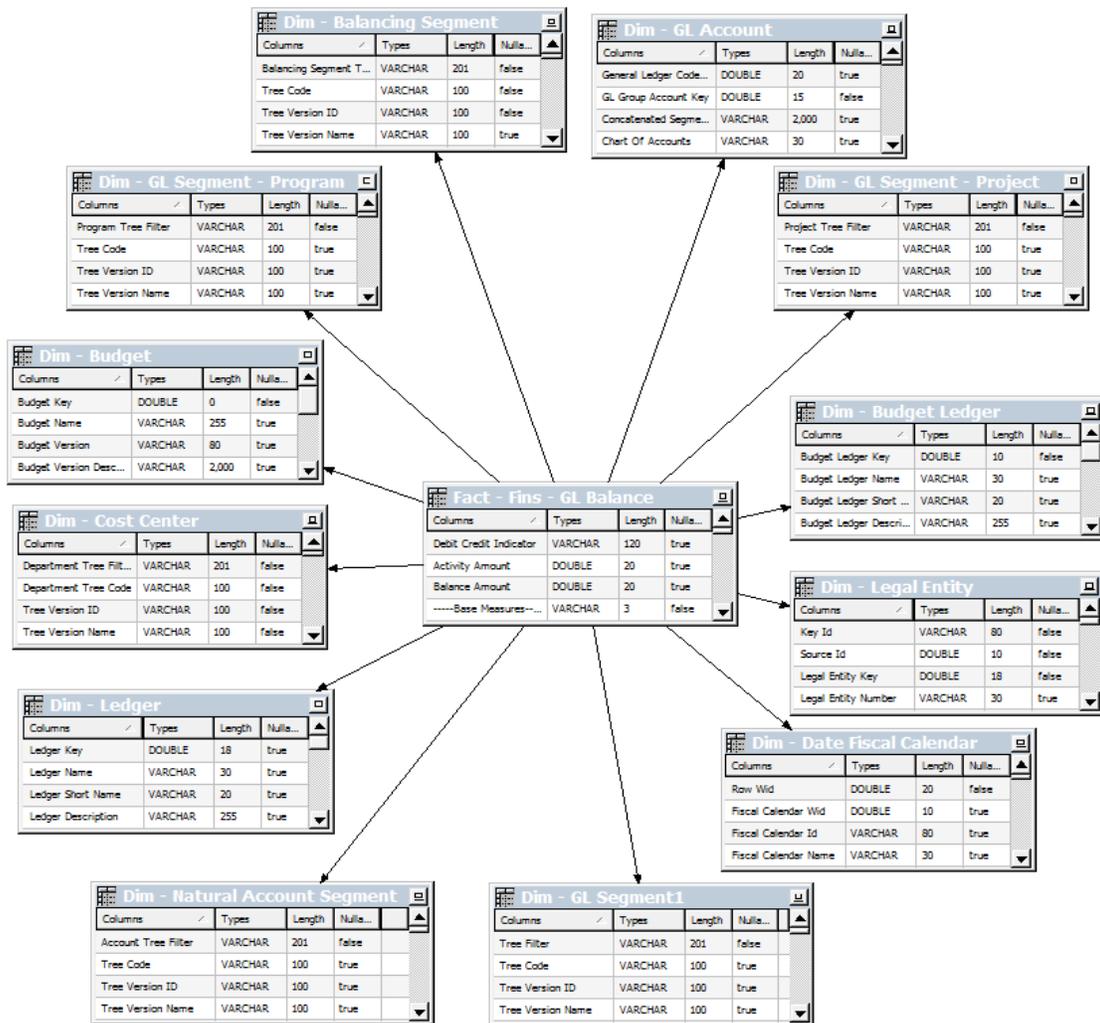
Star schemas are optimized for querying large data sets and are used in data warehouses and data marts to support OLAP cubes, business intelligence analytic applications, and ad hoc queries.

Within the data warehouse or data mart, a dimension table is associated with a fact table by using a foreign key relationship. The dimension table has a single primary key that uniquely identifies each member record (row). The fact table contains the primary key of each associated dimension table as a foreign key. Combined, these foreign keys form a multi-part composite primary key that uniquely identifies each member record in the fact table.

The Fact Table name in **STARS - OBI** Subject Areas is usually preceded with the name **FACT**. This is done to distinguish the Fact tables from the Dimension Tables.

In the example provided below, the underlying Dimension Tables in this Subject Area are joined to the Fact table to form the star schema.

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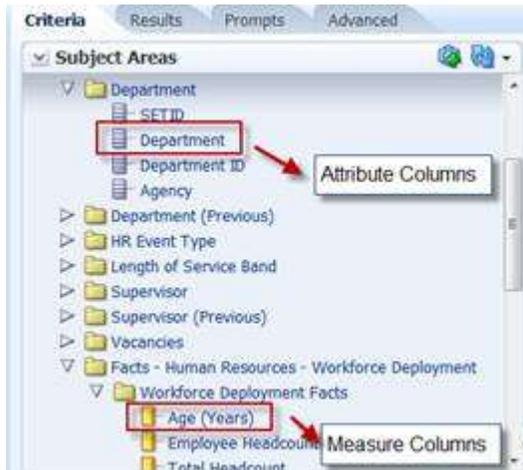


Using Dimensions and Facts in Subject Areas to create an Analysis

Subject Area:

A subject area contains folders; attribute columns (Dimensions) and measure columns (Facts) that represent information about the areas of an organization's business or about groups of users within an organization. Subject areas usually have names that correspond to the types of information that they contain, such as Financials - GL Budget and Expenses, Financials - Budgetary Control – Expense, Financials - AP Voucher Accounting, etc.

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There are common **Dimensions Tables** across Financial Subject Areas such as Time, Ledger and Chartfields. These common Dimensions are followed by Subject Area specific Dimensions such as GL Details, AP Details, AR and Fixed Assets Details. There are **FACT Tables** across specific Subject Areas.

Financial Subject Areas

General Ledger Subject Areas

The general ledger is the master set of accounts that summarize the sub-ledger transactions. It is used to create financial statements and reports. The General Ledger Subject Areas are the master subject areas that have the information posted to them from different sources (Sub-Ledgers) like Accounts Payable, Accounts Receivable, Purchasing etc.,

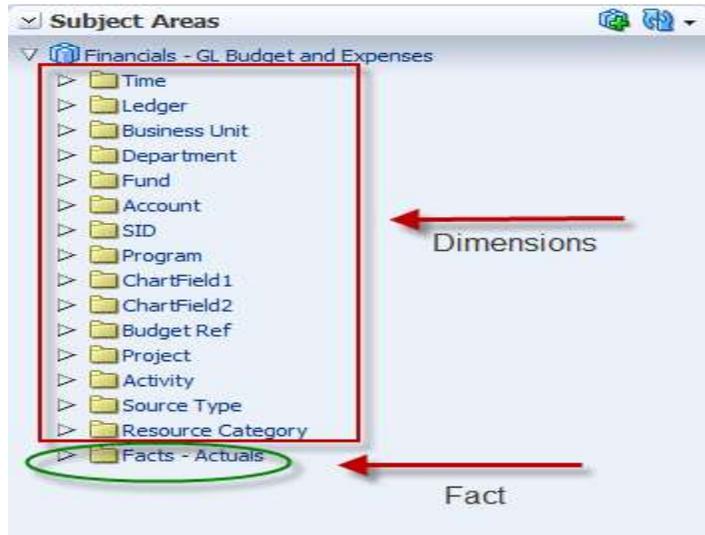
There are two subject Areas in STARS that represent the General Ledger module in CORE-CT.

- **Financials – GL Budget and Expenses** Subject Area
- **Financials - GL Detail Transactions** Subject Area

If you want to create a summarized report that shows the amounts posted to different Ledgers and expenditures by Account codes, then you need to use the **Financials – GL Budget and Expenses** Subject Area. Similarly if you want to create a report that displays the detailed Journal ID related information use the **Financials - GL Detail Transactions** Subject Area.

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Using Dimensions and Facts to create an analysis:



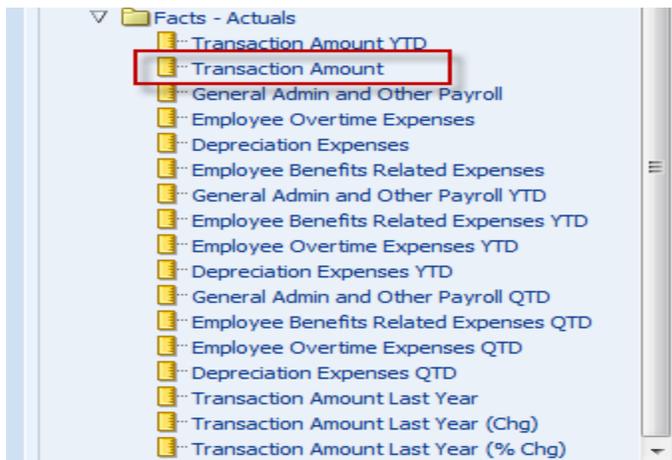
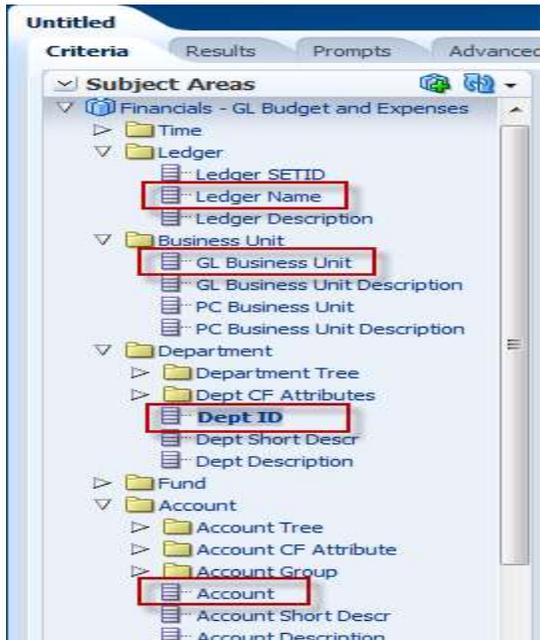
These objects in the left pane are based on database tables in the backend and the data model behind these subject area tables is dimensional modeling.

The tables listed from Time, Ledger and Business Unit through Resource Category are the **Dimension Tables** in this subject area.

There is one Fact table for this Subject Area and it is called **Facts – Actuals**. The Fact Table name in STARS subject areas is usually preceded with the name **FACT**. This is done to distinguish the Fact tables from the Dimension Tables.

Here is an example of a **Financials – GL Budget and Expenses** Subject Area analysis:

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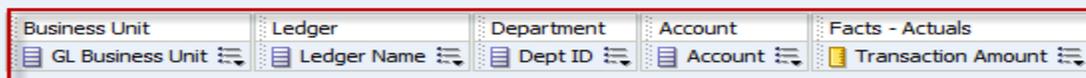


Criteria Tab

Selected Columns

Selected Columns

Double click on column names in the Subject Areas pane to add them to the analysis. Once added, drag-and-drop column



Dimensions

Fact

Selected Filters



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Filters

Add filters to the analysis criteria by clicking on Filter option for the specific column in the Selected Columns pane

- GL Business Unit **is equal to / is in** STATE
- AND** Ledger Name **is equal to / is in** MOD_ACCRL
- AND** Dept ID **is equal to / is in** DAS23010; DAS23121; DAS23122
- AND** Account **is LIKE (pattern match)** 5%

Results Tab

GL Business Unit	Ledger Name	Dept ID	Account	Transaction Amount
STATE	MOD_ACCRL	DAS23121	50110	2,036,654.78
STATE	MOD_ACCRL	DAS23122	50110	188,271.28
STATE	MOD_ACCRL	DAS23121	50160	32,117.06
STATE	MOD_ACCRL	DAS23122	50160	2,118.31
STATE	MOD_ACCRL	DAS23121	50170	153.86
STATE	MOD_ACCRL	DAS23121	50190	40.86
STATE	MOD_ACCRL	DAS23121	50410	49.61
STATE	MOD_ACCRL	DAS23122	50410	203.50
STATE	MOD_ACCRL	DAS23121	50420	2,845.40
STATE	MOD_ACCRL	DAS23122	50420	13,865.67
STATE	MOD_ACCRL	DAS23121	50430	75.08
STATE	MOD_ACCRL	DAS23122	50430	364.19
STATE	MOD_ACCRL	DAS23121	50441	1,790.14
STATE	MOD_ACCRL	DAS23122	50441	9,634.71
STATE	MOD_ACCRL	DAS23121	50442	418.66
STATE	MOD_ACCRL	DAS23122	50442	2,321.01

On the **General Ledger Dashboard – Overview** Page the delivered reports include:

- Total Expenditure Trend
- Expenditure by Category
- Agencies by Expenditure

Commitment Control and Budget Subject Areas

The Budgetary Control subject areas are targeted at executives managing overall budgets and senior level managers managing budgets by Departments, funds, programs, projects and accounts. Reports created from the commitment Control Subject areas provide key analysis pertaining to expense budgets including budget amounts, encumbrances, Pre-Encumbrances and expenditures.

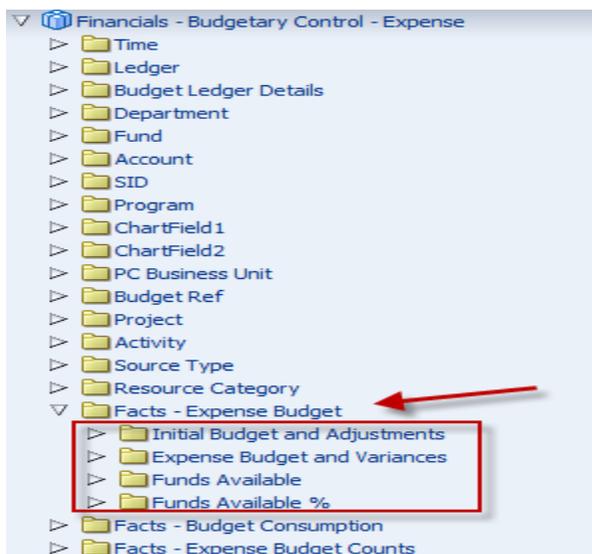
There are two Subject Areas in STARS that represent the Commitment Control Module in CORE-CT:

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- Financials - Budgetary Control - Expense
- Financials - Budgetary Control - Detail Transactions

The **Financials - Budgetary Control – Expense** Subject Area is used to report on Key Performance Indicators pertaining to budgets including budget amounts, amounts Carried forward, budget adjustments and Funds Available by budget period, Budget Ledger and different Chartfields.

This is a summary level subject area that includes all the metrics related to expense budgets including budget amounts, funds available, variances, Encumbrances, Pre-Encumbrances, expenditures, Spending, and counts of budgets overspent. Where applicable, metrics are for Budget Period, Fiscal Year, Fiscal Quarter, Fiscal Period, To-Date (ITD, YTD, QTD), and Ago (Budget Period Ago, Year Ago, Quarter Ago, Period Ago).



The **Financials - Budgetary Control – Detail Transactions** Subject Area provides detail level data that includes the budget transaction details to provide key analysis pertaining to budget transactions.

This Subject Area is designed to provide key analysis pertaining to Encumbrances transactions, Pre-Encumbrances transactions, other transactions and expenditure transactions as well as cross-drills to requisition details, purchase order details, fixed asset details, accounts payable details and accounts receivable details. The details listed are at the least granular level (e.g., the Journal ID, Journal Date etc.)



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Financials - Budgetary Control - Detail Transactions

- Time
- Ledger
- Budget Ledger Details
 - Budgetary Line Details**
 - Journal ID
 - Journal Line Number
 - Budget Transaction Type Indicator
 - Journal Date
 - KK Journal Date
 - GL Transaction ID
 - Budget Period
 - KK Process Status
 - KK Source Tran
 - Budget Hdr Status
 - Budget Line Status
 - Descr
 - Descr254
 - Journal Hdr Status
 - Journal Line Status
 - Unpost Seq
 - OPR ID
 - Source
 - Status
 - Transaction Type
- Department
- Fund
- Account
- SID
- Program
- ChartField1
- ChartField2
- PC Business Unit
- Budget Ref
- Project
- Activity
- Source Type
- Resource Category
- Facts - Detail Transactions