Contents

Introduction

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 Fixed Asset 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 Current Cost, Acquisition amount, Depreciation amount etc.

Related dimension attribute examples include Asset Details, GL Details, 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 –

- Time

- Department

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.
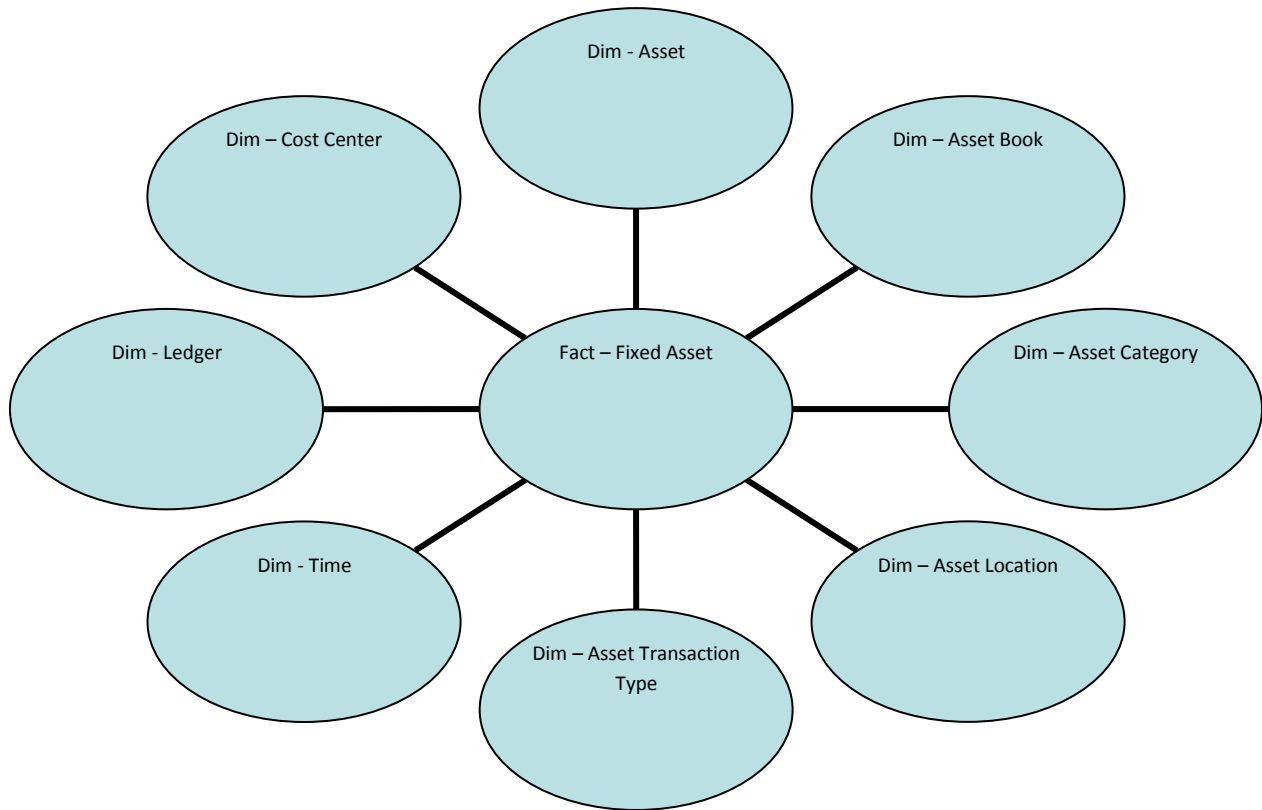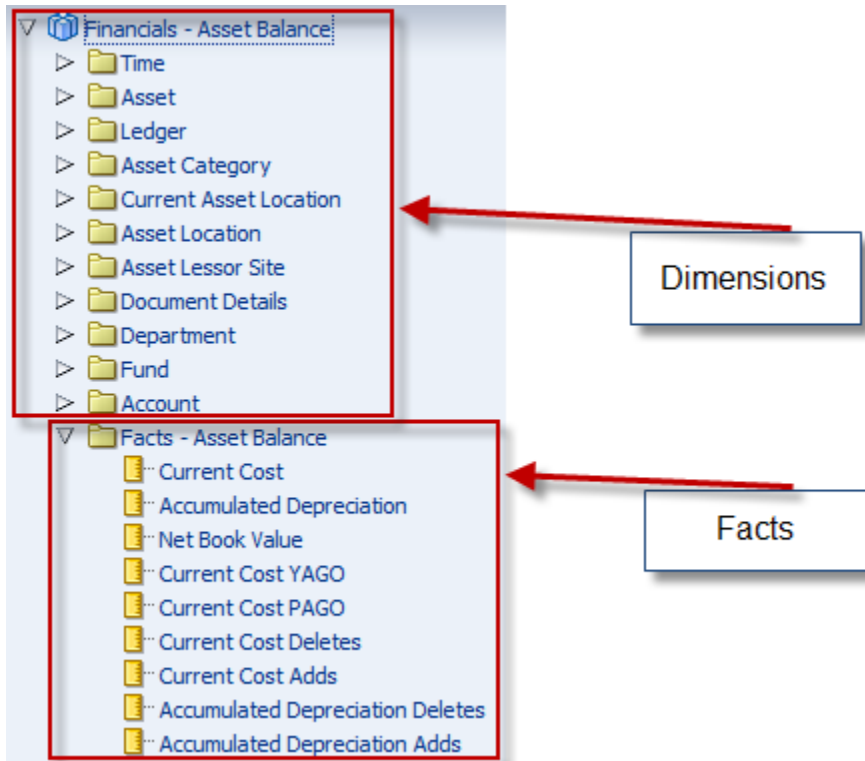
Subject Area:

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 – Asset Depreciation, Financials – Asset Acquisition, Financials – Asset Balance, etc.

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

Fixed Asset Subject Areas

Fixed Assets is the subject area where we keep track of State of CT asset additions, changes and retirements that happen in a life of an asset. It is used to create asset evaluation reports. The Fixed Asset Subject Areas are the master subject areas that have the information posted to them from different sources like Acquisitions, Depreciations and Retirements etc...

There are five Subject Areas in STARS that represent the Fixed Asset module in CORE-CT.
- **Financials – Asset Overview** Subject Area
- **Financials – Asset Balance** Subject Area
- **Financials – Asset Acquisition** Subject Area
- **Financials – Asset Depreciation** Subject Area
- **Financials – Asset Retirement** Subject Area

Financials – Asset Overview: This is a summary level subject area that provides key statistics on the fixed assets functions including Gross Book Value, Accumulated Depreciation Amount and Net Book Value.

Financials - Asset Balance: This is a summary level subject area that contains point in time asset balance information such as Current Cost, Fiscal YTD Depreciation Amount, Gross Fixed Asset Cost Ratio, etc.

Financials - Asset Acquisition: This subject area includes all the metrics related to asset additions posted through new acquisitions within a given period and both activity and to date (PTD, QTD, and YTD)

Financials - Asset Depreciation: This subject area includes all the metrics related to asset depreciation expense that can be analyzed using several dimensions such as asset book, category, cost center, etc.

Financials - Asset Retirement: This subject area includes all the metrics related to asset retirement such as Cost Retired, Cost of Removal, Proceeds of Sale, Gain/Loss Amount, etc.

Using Dimensions and Facts to create an analysis:
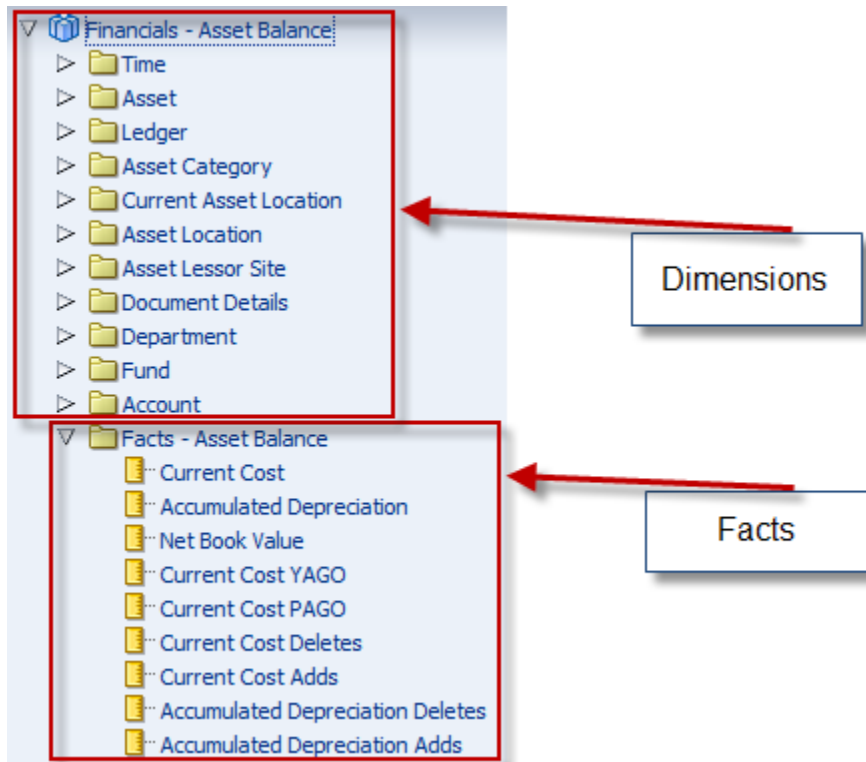
These objects in the left pane are based on database tables in the backend, and the data model behind these subject area tables is dimensional modeling.

The tables listed from Time, Asset, Ledger, Asset Category, Asset Location, Asset Details, Department, Fund and Account are the Dimension Tables in this subject area.
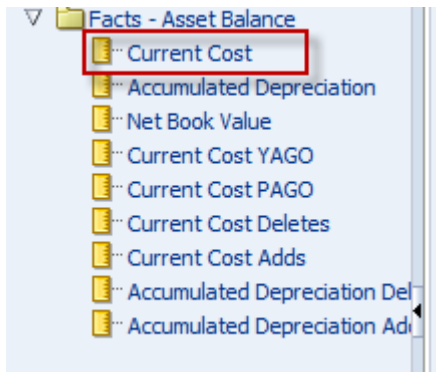
There is one Fact table for this Subject Area and it is called **Facts – Asset Balance**. The Fact Table name in STARS subject areas is usually preceded with the name **FACT.** This is done to distinguish the Fact tables from the Dimension Tables.

Here is an example of a **Financials – Asset Balance** Subject Area analysis:
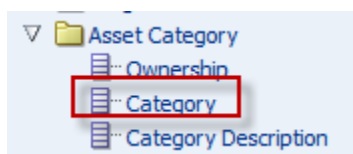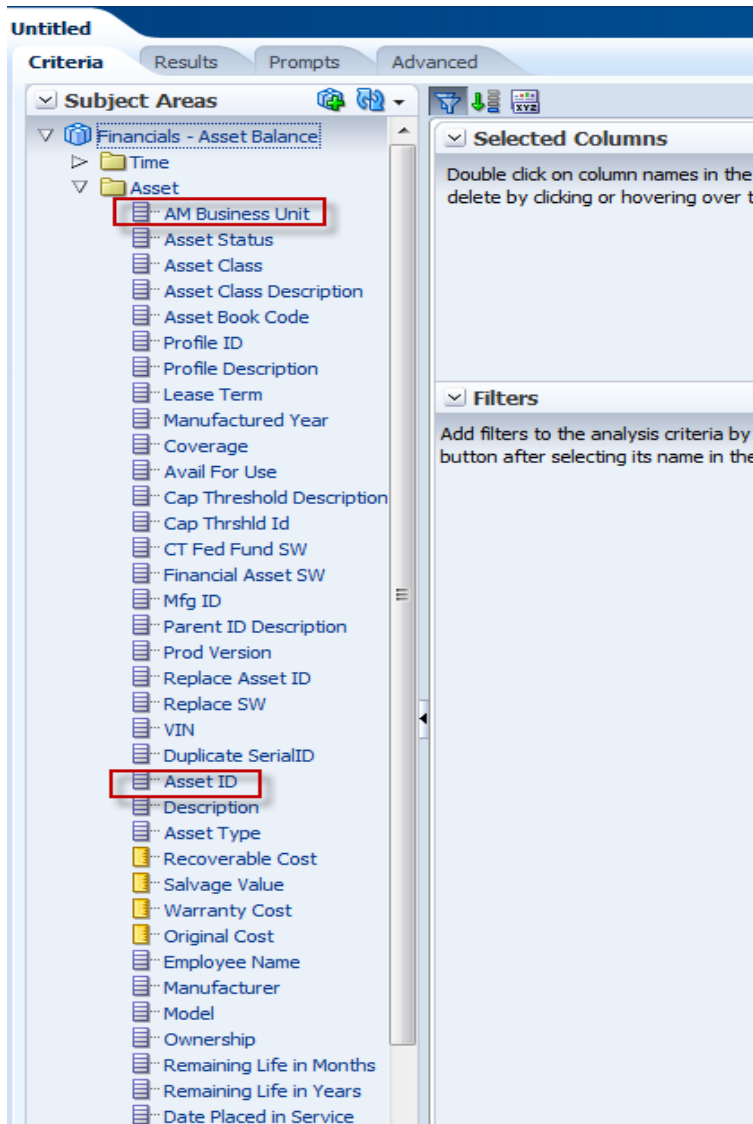
Criteria Tab

Selected Columns

Selected Filters

Results Tab

Financials – Asset Overview Subject Area:

The **Financials – Asset Overview** Subject Area is used to report on Key Performance Indicators pertaining to Assets including Acquisition, Depreciation, Retirement and Balance Available by Asset Category, Business Unit and other chart fields.

This is a summary level subject area that provides key statistics on the fixed assets functions including Gross Book Value, Accumulated Depreciation Amount and Net Book Value. Where applicable, metrics are for Asset Business Unit, Asset Category, Fiscal Year, Fiscal Quarter, and Fiscal Period, To-Date (PTD, YTD, and QTD).
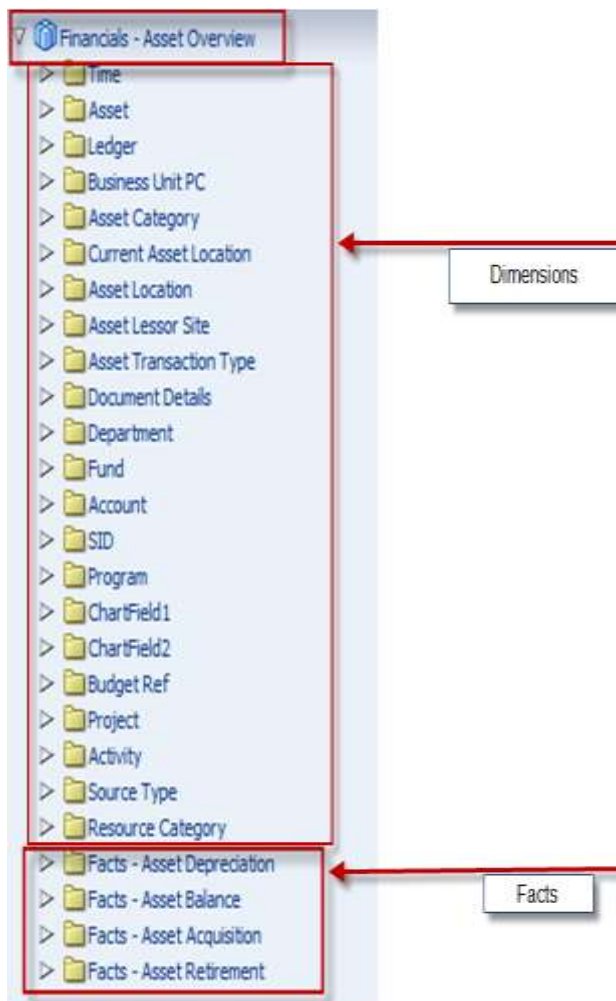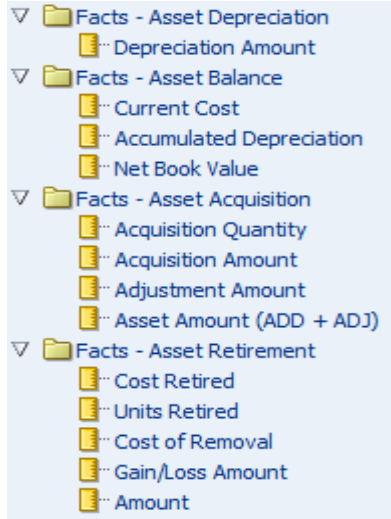
Facts – Asset Acquisition Metrics:

Acquisition Amount: It's the amount from PS_Dist_ln with trans_type as ' ADD ' for Capitalized assets and it's the amount from PS_COST_NON_CAP table with trans_type as ' ADD '.

Adjustment Amount: It's the amount from PS_Dist_ln with trans_type as ' ADJ ' for Capitalized assets and it's the amount from PS_COST_NON_CAP table with trans_type as ' ADJ '.

Asset Amount: Asset Amount is combination of Acquisition amount and Adjustment amount.

Facts – Asset Depriciation Metrics:
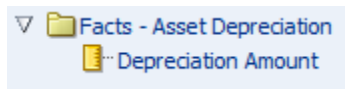
Depreciation Amount: it's the amount with trans_type as ' DPR ' and ' PDP ' and distribution type = ' DE '

Facts Asset Retirement Measures Definitions:

Cost Retired: It's the total cost of an asset at the time of retirement.

   Capitalized Asset: It is the amount with transaction type as ' RET ' or ' REI ' in PS_DIST_LN and distribution type = ' FA '.

   Non Capitalized Asset: It is the amount from PS_Retirement_NF.

Cost of removal: Cost associated with the removal of an asset when it is retired or removed.

Units Retired: This metric shows how many units have been retired.

Gain/Loss Amount: This metric shows the Gain and loss amount of an retirement.

Amount:

   Capitalized Assets - It's the retirement amount from PS_DIST_LN with transaction type as 'RET' and 'REI' in PS_DIST_LN and Distribution type in (' AD ' or ' FA ' or ' GA ' or ' GL ' or ' RM ' or ' CA '). Non Capitalized Assets – It's the retirement amount from PS_Retirement_NF table.

Facts Asset Balance Measures Definitions:

Current Cost: Cost of an asset with DISTRIBUTION_TYPE = 'FA' and trans_type in (' ADD ', ' ADJ ', ' RCT ', ' REI ', ' RET ', ' TRF ')

Accumulated Depreciation: Total Depreciated value for an asset.

Net Book Value: Current Cost minus Depreciation amount.

To create an analysis out of multiple areas in Fixed Assets; like acquisition, depreciation and retirements, Use the **Asset Overview Subject area**.
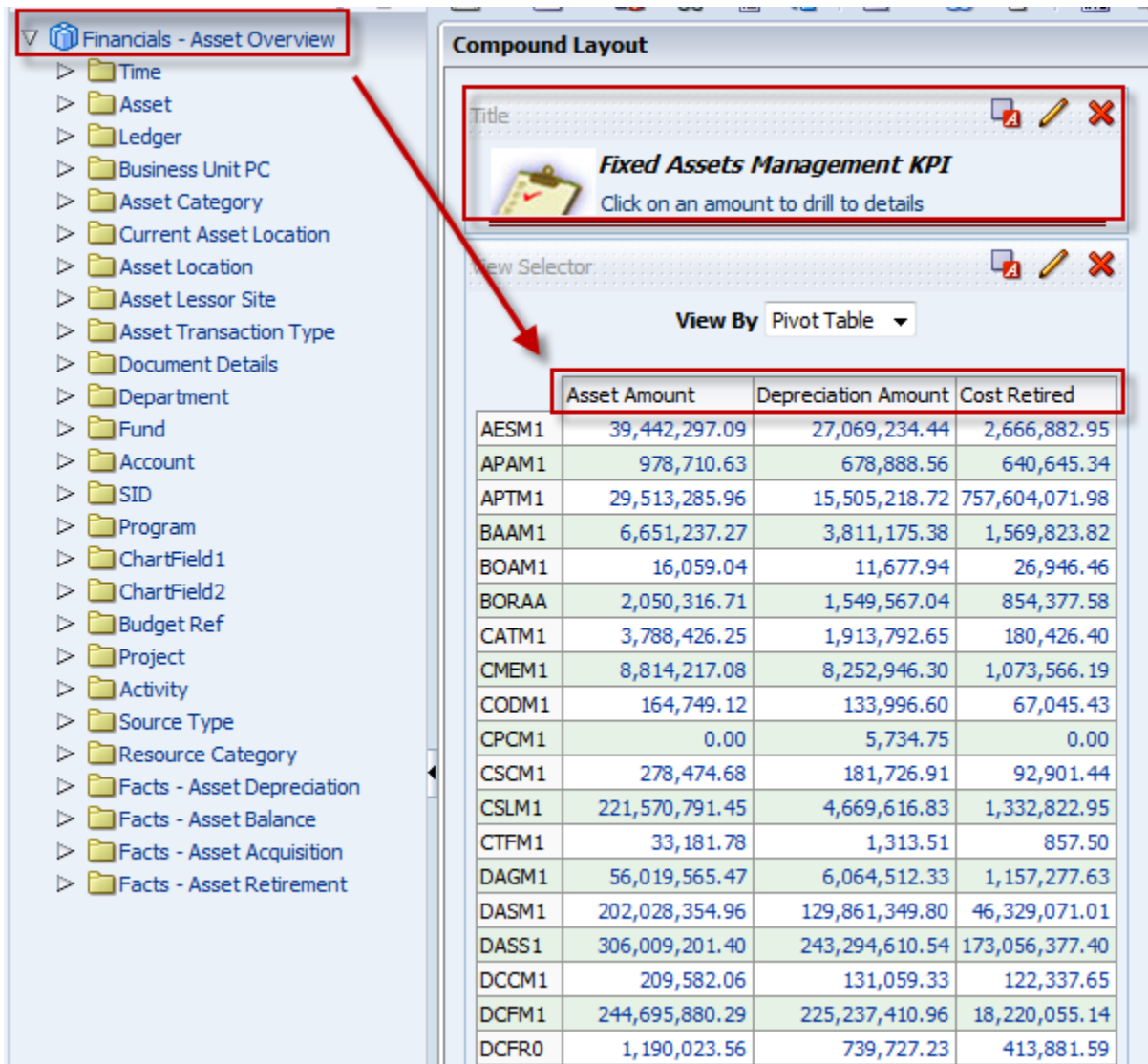
Example:

Compound Layout View:

Compound Layout view allows us to assemble different views for display on a dashboard.

This is an example of Title and View Selector on the Compound Layout.

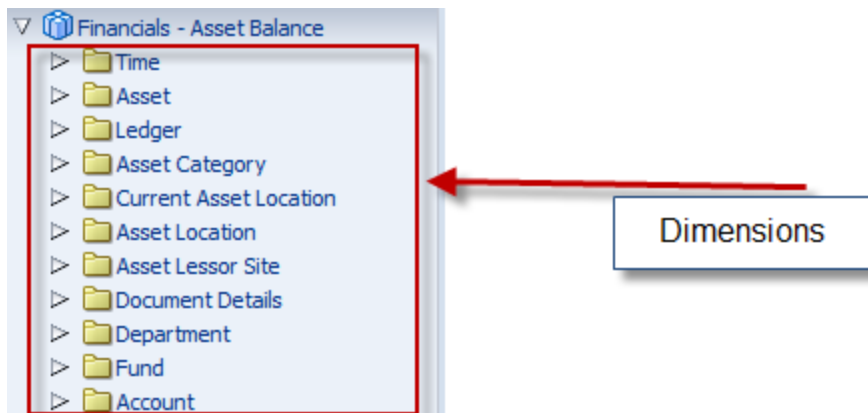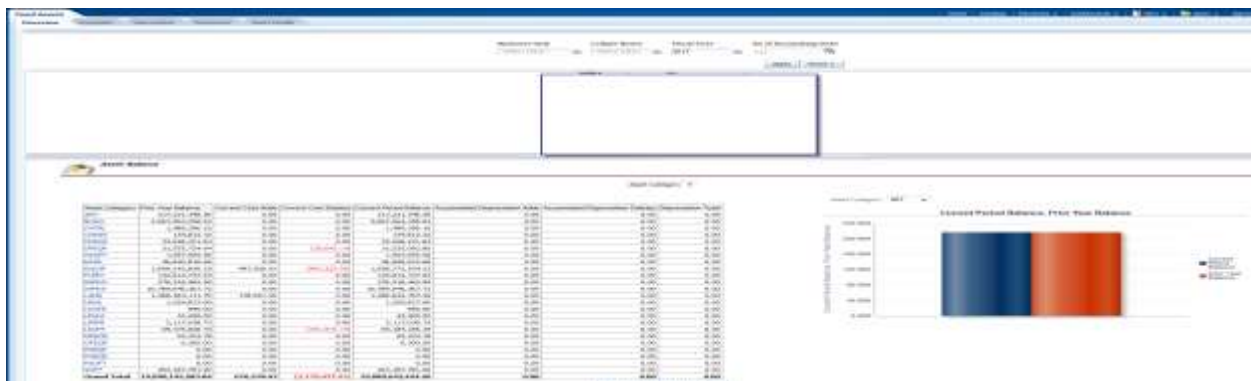View Selector gives users the option to choose a display of information from list of choices (View) presented to them.

Financials – Asset Balance Subject Area:

This is a summary level subject area that contains point in time asset balance information such as Current Cost, Accumulated Depreciation Amount, net book value, etc.

To create an analysis based on point in time asset balances, or current cost based reports, use the **Asset Balance Subject Area**.

Asset Balance Subject Area Dimensions

Asset Balance Subject Area Fact

Fact – Measures Defintions:

Current Cost: Cost of an asset with DISTRIBUTION_TYPE = ' FA ' and trans_type in (' ADD ', ' ADJ ', ' RCT ', ' REI ', ' RET ', ' TRF ')

Accumulated Depreciation: Total Depreciated value for an asset.

Net Book Value: Current Cost minus Depreciation amount.

Example:

Compound Layout View:

Compound Layout view allows us to assemble different views for display on a dashboard.

This is an example of Title, Column Selector and Table View on the Compound Layout

Column Selector gives users the option to choose a display of information from list of choices (Columns) presented to them.

Dashboard View:

## Financials – Asset Acquisition Subject Area:

This subject area includes all the metrics related to asset additions posted through new acquisitions in a given period and both activity.

To create an analysis to show all assets that have been acquired and any adjustments (cost adjustment, Re-categorizing, and/or transfers) to the asset since the original purchase of the asset, use the **Asset Acquisition Subject Area.**

Asset Acquisition - Dimensions
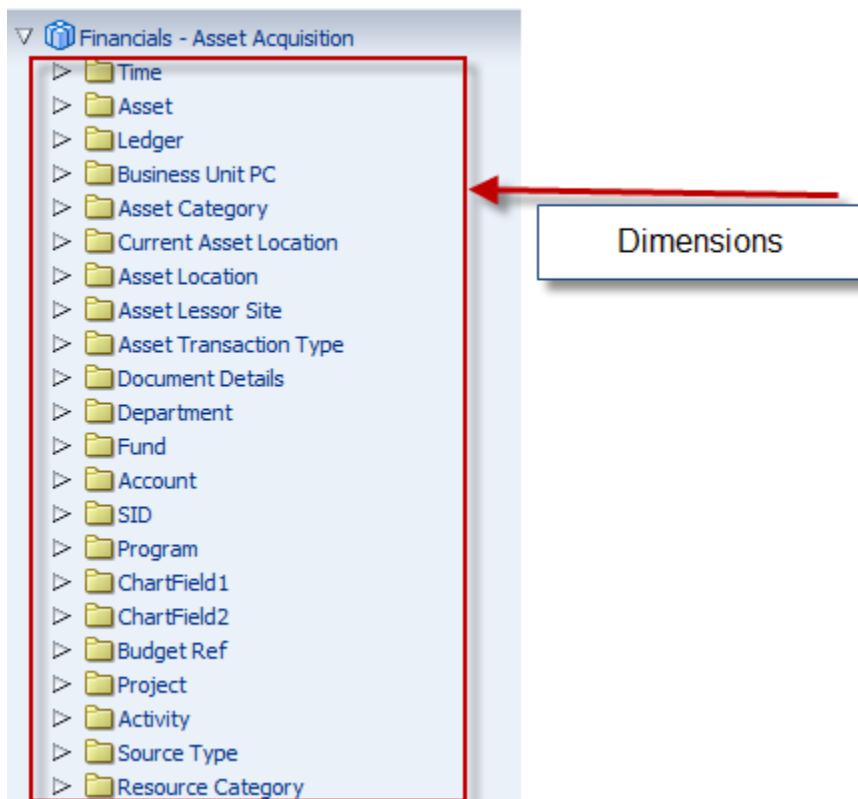
Asset Acquisition - Fact
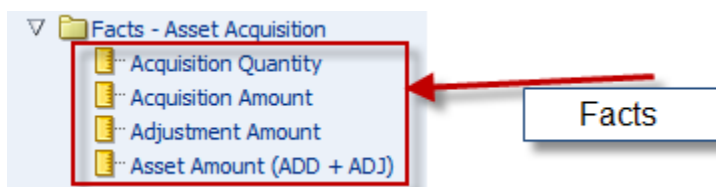
Fact – Measures Defintions:

Acquisition Amount: It's the amount from PS_Dist_ln with trans_type as ' ADD ' for Capitalized assets and it's the amount from PS_COST_NON_CAP table with trans_type as ' ADD '.

Adjustment Amount: It's the amount from PS_Dist_ln with trans_type as ' ADJ ' for Capitalized assets and it's the amount from PS_COST_NON_CAP table with trans_type as ' ADJ '.

Asset Amount: Asset Amount is the combination of Acquisition amount and Adjustment amount.

Example:

Compound Layout View:

Compound Layout view allows us to assemble different views for display on a dashboard.

This is an example of Title and View Selector on the Compound Layout.

View Selector gives users the option to choose a display of information from list of choices (View) presented to them.

Dashboard View:

## Financials – Asset Depreciation Subject Area:

This subject area includes all the metrics related to asset depreciation expense that can be analyzed using several dimensions such as asset book, category, cost center, etc.

To create an analysis to show all assets that have been depreciated by asset category, use **Asset Depreciation Subject Area.**

Asset Depreciation Dimensions
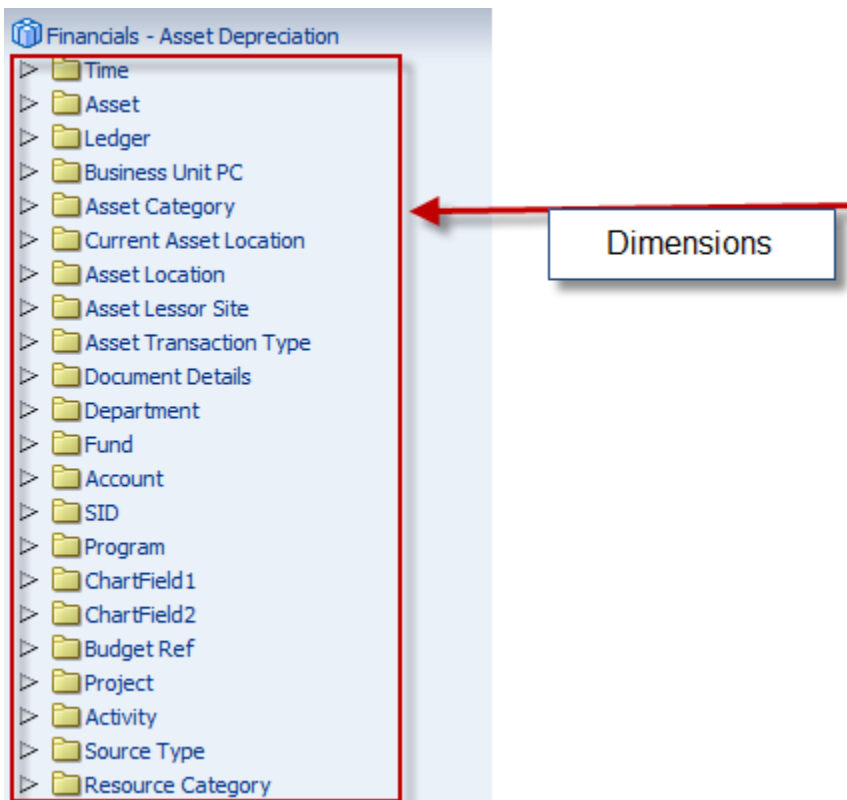
Asset Depreciation Fact
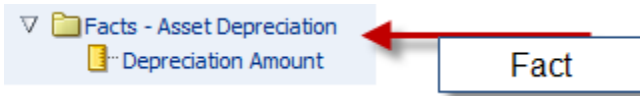
Fact – Measures Defintions:

Depreciation Amount: it's the amount with trans_type as ' DPR ' and ' PDP ' and distribution type in ' DE '

Example:

Compound Layout View:

Compound Layout view allows us to assemble different views for display on a dashboard.

This is an example of Title and Table View on the Compound Layout.

Dashboard View:
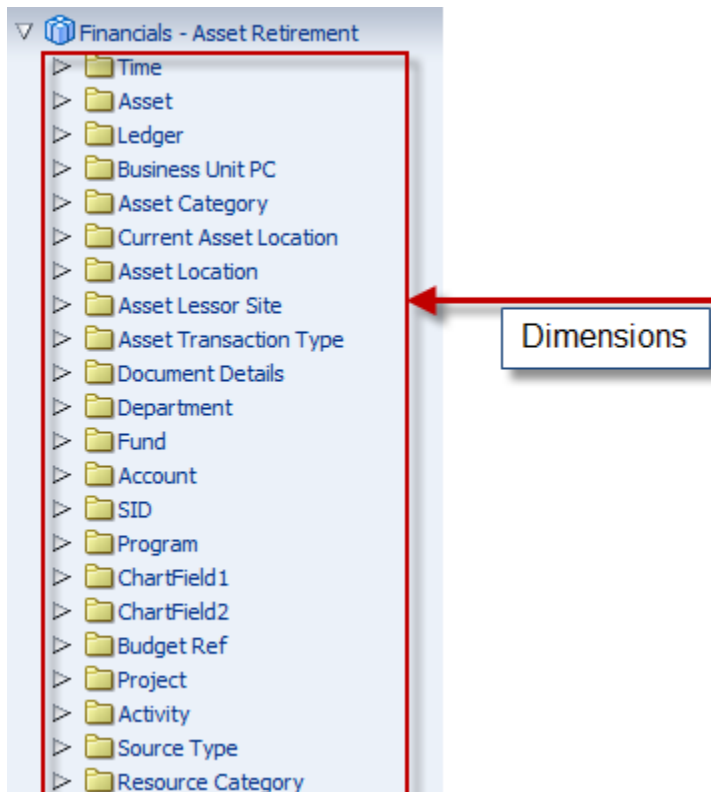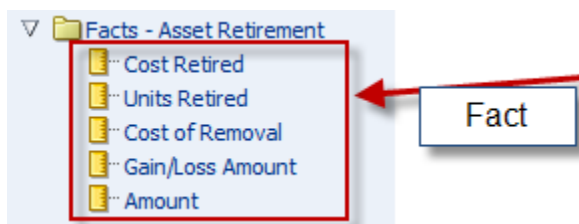
Financials - Asset Retirement:

This subject area includes all the metrics related to asset retirement such as Cost Retired, Cost of Removal, Gain/Loss Amount, etc.

To create an analysis to show asset cost retired by asset category, use **Asset Retirement Subject Area**.

Asset Retirement Dimensions

Asset Retirement Fact

Fact – Measures Defintions:

Cost Retired: It's the total cost of an asset at the time of retirement.

Capitalized Asset: It is the amount with transaction type as ' RET ' or ' REI ' in PS_DIST_LN and distribution type = ' FA ' .

Non Capitalized Asset: It is the amount from PS_Retirement_NF.

Cost of removal: Cost associated with the removal of an asset when it is retired or removed.

Units Retired: This metric shows how many units have been retired.

Gain/Loss Amount: This metric shows the Gain and Loss amount of an retirement.

Amount:

Capitalized Assets - It's the retirement amount from PS_DIST_LN with transaction type as ' RET ' and ' REI ' in PS_DIST_LN and Distribution type in (' AD ' or ' FA ' or ' GA ' or ' GL ' or ' RM ' or ' CA '.

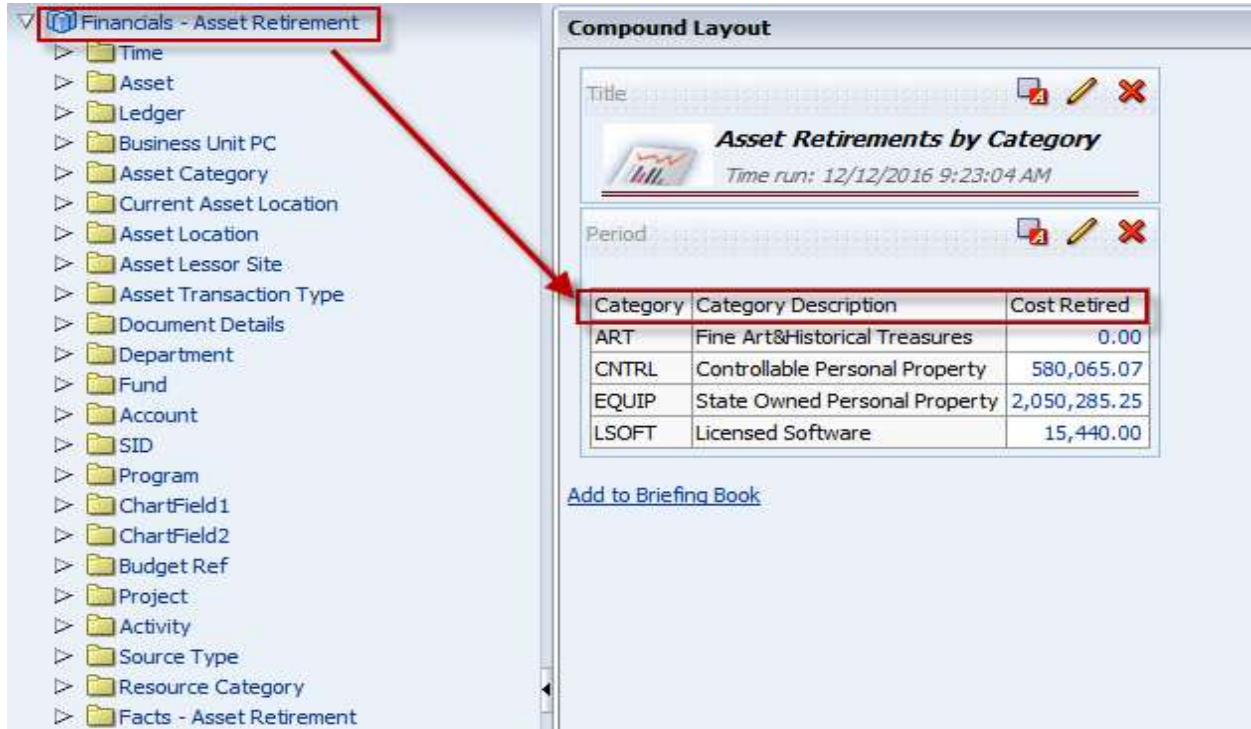Non Capitalized Assets – It's the retirement amount from PS_Retirement_NF table.

Example:

Compound Layout:

Compound Layout view allows us to assemble different views for display on a dashboard.

This is an example of Title and Table View on the Compound Layout.

Dashboard View: