

SCT Banner Advancement

Technical Training – Part 1

Who is in Attendance?

◆ Introductions:

- Instructor
- Participants
 - ◆ Banner Experience
 - ◆ Relational Database Experience
 - ◆ Other Relevant Experience
 - ◆ Responsibilities

Advancement Technical Performance Objective

- ◆ To prepare the technical staff to support Advancement in the implementation and the operations of the Banner Advancement product

**Advancement Technical
Task Objectives**

- ◆ Query the Banner Advancement tables
- ◆ Identify tables and fields for data conversion
- ◆ Identify tables and fields for migration to the production database
- ◆ Follow key Advancement processes

**Advancement Technical
Agenda**

- ◆ Part I
 - Banner/Oracle System Configuration
 - Naming Convention, Product Owners, Data Dictionaries
 - Validation Tables, Constraints

**Advancement Technical
Agenda**

- ◆ Part II
 - General Person Tables
 - Key Advancement Tables by Module
- ◆ Part III
 - Conversion and Migration Strategies
 - Alumni Interfaces to other Banner Systems
 - Views and Temporary Tables
 - Troubleshooting

Advancement Technical Visits

- ◆ Initial Advancement Technical Training
- ◆ Advancement Data Mapping Support (optional)
- ◆ Advancement Conversion and Migration Support (optional)

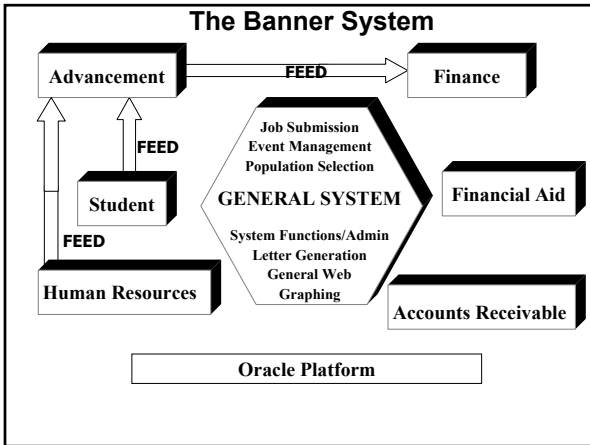
Advancement Technical Reference Materials

- ◆ Technical Reference Manuals (TRM)
 - Banner General
 - Banner Advancement Supplement
 - Banner Advancement Conversion Guide
- ◆ User Manuals
 - Banner Advancement
 - Using Banner General

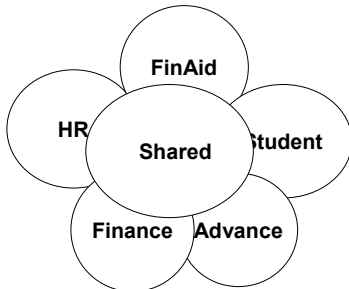
SCT Banner Basics

Banner System Overview

- ◆ Relational Database Management System with many tools
- ◆ Oracle Platform
- ◆ Where does Banner Advancement fit into the entire Banner system?



Integrated System = Shared Data



Shared modules, tables, views, processes, forms...

Banner Objects

- ◆ Refer to SCT Banner Technical Reference - Chapter 1 and Chapter 3
 - Forms, Reports, Jobs, and Processes
 - Tables
 - Views
 - Columns
 - Indexes
 - Constraints

Banner Objects Naming Convention:

- ◆ All Banner objects adhere to a seven-character naming convention

Position Locations: 1 2 3 4 5 6 7
 - - - - -

Example: S P R I D E N

- ◆ Characters identify a particular quality or attribute of the object

Banner Objects Naming Convention: Position Location 1

Position 1 – identifies the primary SYSTEM owning the object

- | | |
|--------------------------------|-------------------------------|
| ◆ A - Advancement | ◆ S - Student |
| ◆ F - Finance | ◆ T - Accounts Receivable |
| ◆ G - General | ◆ V - Voice Response |
| ◆ N - Position Control | ◆ H - New Products (Web) |
| ◆ P - HR / Payroll / Personnel | |
| ◆ R - Financial Aid | ◆ Y, Z - Reserved for Clients |

Product Owners

- ◆ Each primary system corresponds to a Banner product
- ◆ Each product has its own 'schema' in the ORACLE database
- ◆ Each schema has a unique name

Product Owners

General GENERAL
General Person SATURN
Student SATURN
Advancement ALUMNI
Finance FISMGR
Accounts Receivable TAISMGR
Position Control POSNCTL
Payroll PAYROLL
Financial Aid FAISMGR
Security BANSECR
Procedures, Functions, Views BANINST1

Banner Objects Naming Convention: Position Location 2

- ◆ Position 2 – identifies the system MODULE of the object
- ◆ Position 2 differs for each Banner system

**Banner Objects Naming Convention:
Position 2 for Advancement**

If Position 1 = 'A', the Position 2 MODULE is:

- | | |
|------------------------------------|----------------------------------|
| A - Membership | M - Prospect Management |
| D - Designation | O - Organization |
| E - Event Management | P - Constituent (Con/Org shared) |
| F - Campaign | S - Solicitor Organization |
| G - Pledge and Gift/Pledge Payment | T - Validation Table/Form |
| L - Label | U - Utility |
| | Y, Z - Reserved for Clients |

**Banner Objects Naming Convention:
Position Location 3**

Identifies the OBJECT TYPE

- A - Application Form
- B - Base Table or Batch COBOL Process
- I - Inquiry Form
- P - Process/Report
- R - Repeating Table, Rule Table or Report/Process
- T - Temporary Table
- V - Validation Table or View

**Banner Objects Naming Convention:
Position Locations 4 thru 7**

Last four characters are descriptive name for object

Example: SPRIDEN

- | | |
|------|------------------|
| S | Student/Common |
| P | Person |
| R | Repeating table |
| IDEN | "Identification" |

**Banner Objects Naming Convention:
Examples**

Other Examples:

APANAME	ATVDONR
A Advancement	A Advancement
P Constituent	T Validation Table
A Application Form	V Validation Table
NAME "Names"	DONR "Donor Category"

**Banner Objects Naming Convention:
Client-Developed Items**

- ◆ Applications
 - Position 1 - W, Y and Z
- ◆ Forms, reports, tables and modules
 - Position 1 – System Identifier
e.g. A for Advancement
 - Position 2 – Y or Z

Banner Objects Naming Convention

Self Check



Column Naming Convention

Columns

- ◆ Start with the table name
- ◆ Ending in
 - _PIDM refers to Personal Identification Master, an internal system ID number
 - _CODE references a validation table
 - _IND refers to indicators
 - _ACTIVITY_DATE is date stamp of last update

Column Naming Convention

Seven-character table name_column name

tablename_descriptive_name → SPRIDEN_LAST_NAME
tablename_PIDM → APBCONS_PIDM
tablename_abcd_CODE → APRCATG_DONR_CODE
tablename_ACTIVITY_DATE → AOBORGN_ACTIVITY_DATE
tablename_USER → APRCHLD_USER

Column Naming Convention: Exercises

```
SQL> DESC aprcatg
```

PIDMs

- ◆ Entity-related records (persons and non-persons) identified by internal key field called a Personal Identification Master, or PIDM
- ◆ Primary key or part of primary key
- ◆ Links entity-related tables
- ◆ Used instead of ID numbers to facilitate ID number changes

PIDMs

- ◆ Oracle generated unique one-up sequence number
- ◆ Max sequence number stored in SOBSEQN
- ◆ The PIDM is not viewable to users in Banner forms

SOBSEQN

```
SQL> DESC sobseqn
```

```
SQL> SELECT * FROM sobseqn;
```

Note SOBSEQN_MAXSEQNO for the row where SOBSEQN_FUNCTION = 'PIDM'.

When the next new record is entered in Banner, what will its PIDM number be?

ID Numbers

- Viewable to users in Banner forms
- Stored only in SPRIDEN

- Oracle generated ID's are unique, one-up numbers
- Stored in SOBSEQN

SOBSEQN

```
SQL> DESC sobseqn
```

```
SQL> SELECT * FROM sobseqn;
```

A system generated SPRIDEN_ID is nine characters

- SOBSEQN_SEQNO_PREFIX concatenated with the
- SOBSEQN_MAXSEQNO, left padded zeros:

```
SOBSEQN_SEQNO_PREFIX || lpad(SOBSEQN_MAXSEQNO,8,0)
```

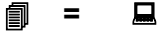
SOBSEQN Exercises

Self Check



Validation Table Naming Convention

Validation Table Name \leftrightarrow Validation Form Name



Position 1 is the system identifier

Positions 2 and 3 are 'TV'

- Examples:
 - ATVDONR
 - STVATYP

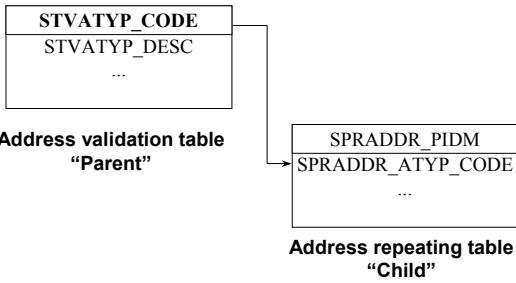
Dynamic Help Query

With the cursor in the desired field, select
Help -> Dynamic Help Query from the
main menu.

Referential Integrity

- Oracle enforces relationships between tables through the use of Primary and Foreign key constraints
- SCT Banner uses naming conventions for these constraints

Referential Integrity



Constraints Naming Convention:

- ◆ Five common constraint types used in Banner:
 - ◆ Primary Key
 - ◆ Foreign Key
 - ◆ Check
 - ◆ Unique
 - ◆ Not Null

Constraints Naming Convention: Primary Keys

- ◆ Designates a column or combination of columns whose values create a unique combination for each record

Primary keys must be defined as follows:

PK_ppppppp

where PK denotes Primary Key

ppppppp = primary key table name

**Constraints Naming Convention:
Primary Keys**

Examples:

PK_APBCONS → PK is APBCONS_PIDM

PK_APREHIS → PK is APREHIS_PIDM +
APREHIS_SEQ_NO

**Constraints Naming Convention:
Foreign Keys**

• FOREIGN KEYS can be defined in the following two situations:

- Referential integrity constraints referencing the VALIDATION TABLE
- Referential integrity constraints for APPLICATION HIERARCHY (Parent – Child)

**Constraints Naming Convention:
Foreign Keys – Validation Tables**

• Defining referential integrity constraints referencing the validation tables

FKn_fffff_INV_ppppppp_CODE

FK denotes Foreign Key

n = one-up number

fffff = foreign key table name

ppppppp = primary key table name

CODE denotes reference to a validation table

**Constraints Naming Convention:
Foreign Keys – Validation Tables**

Example:

A foreign key for table APRADEG, column
APRADEG_MAJR_CODE is

FK1_APRADEG_INV_STVMAJR_CODE

APRADEG_MAJR_CODE values must be in the
validation table STVMAJR, column STVMAJR_CODE

**Constraints Naming Convention:
Foreign Keys – Application Hierarchy**

◆ Defining referential integrity constraints
for application hierarchy

FKn_ffffff_INV_ppppppp_KEY

FK denotes Foreign Key

n = one-up number

ffffff = foreign key table name

ppppppp = primary key table name

KEY denotes a reference to another table

**Constraints Naming Convention:
Foreign Keys – Application Hierarchy**

Example:

The foreign key for table APREHIS, column
APREHIS_PIDM is

FK1_APREHIS_INV_APBCONS_KEY

APREHIS_PIDM values must be in the APBCONS
table — a person must have a record in the
APBCONS table before they can have a record in
APREHIS.

**Constraints Naming Convention:
Check Constraints**

- ◆ Explicitly defining a condition

CCn_cccccccccc

CC denotes Check Constraint

n = one-up number

cccccccc = column name

**Constraints Naming Convention:
Unique Constraints**

- ◆ No two rows in the table can have the same value for the unique key

UKn_ppppppp_ddddddddd

UK denotes Unique Constraint

n = one-up number

ppppppp = unique key table

dddddddd = descriptive name

**Naming Conventions:
For More Information on...**

- ◆ Database Programming Object Naming Standards (e.g. triggers, packages, functions, cursors)
- ◆ Banner Forms Architecture
- ◆ COBOL Standards
- ◆ C Standards

See Banner General TRM, Chapter 1

Data Dictionary Views

- ◆ A set of tables and views that are used as a read-only reference about the database
- ◆ Stores information about both the logical and physical structure of the database *
- ◆ Structure and content of Tables, Views, Users, Indexes, Constraints, Functions, Procedures, and more

* Oracle Server Concepts

Data Dictionary Views

- ◆ USER_ -- shows objects/events owned by user
- ◆ ALL_ -- shows objects/events to which the user has access
- ◆ DBA_ -- restricted; assigned only to DBA role

Data Dictionary Views

Examples:

ALL_OBJECTS Object list and information
ALL_TABLES Table list and information
ALL_TAB_COMMENTS . Table description
ALL_TAB_COLUMNS . . Column list and information
ALL_COL_COMMENTS . Column description
ALL_CONSTRAINTS . . Constraint list and definitions
ALL_CONS_COLUMNS . Constraint columns

Data Dictionary Views

Examples (continued):

ALL_VIEWS View list and definitions
ALL_INDEXES Index list and information
ALL_IND_COMMENTS Index columns
ALL_SOURCE Source information for objects
(e.g. functions)

```
SQL> SELECT * FROM dict
      WHERE table_name LIKE 'ALL_%' ;
```

Data Dictionary Views

ALL_TAB_COMMENTS lists Table descriptions

```
SQL> DESC all_tab_comments
```

```
SQL> SELECT table_name, comments
      FROM all_tab_comments
      WHERE owner = 'ALUMNI' ;
```

Data Dictionary Views

ALL_CONSTRAINTS lists constraint names.

```
SQL> DESC all_constraints
```

```
SQL> SELECT *
      FROM all_constraints
      WHERE table_name = 'APRCATG' ;
```

Data Dictionary Views

ALL_CONS_COLUMNS lists column names of constraints.

```
SQL> DESC all_cons_columns
```

```
SQL> SELECT *  
       FROM all_cons_columns  
       WHERE table_name = 'APRCATG';
```

Data Dictionary Views

ALL_VIEWS stores names of views

Data Dictionary Views Exercise

Self Check



SCT Banner Tables

A list of the Banner tables can be found in:

- ◆ Advancement Tables

```
SQL> SELECT table_name, comments
       FROM all_tab_comments
       WHERE owner = 'ALUMNI'
       ORDER BY table_name;
```

- ◆ Banner General Tables

SCT Banner General Technical Reference Manual,
Chapter 6

Oracle Database Tools to Help You

- ◆ TOAD – Tool for Oracle Application Developers
<http://www.quest.com>
- ◆ AQT – Advanced Query Tool
<http://querytool.com>
- ◆ OTN - Oracle Technology Network
<http://otn.oracle.com>
- ◆ Banner User Websites
a simple Google search for “SCT Banner” listed over 15,500 links, with many excellent sites sharing code, scripts, experiences and tips.
