Banner Technical Basics

- A Discussion About Banner Tables, Fields, Data, etc.
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Presentation Overview

- In this presentation, Banner technical staff will gain a better understanding of Banner Tables, Views, Fields, Data, etc. This includes How-To's, ERD's, SQL queries, and Discussion, which will expand the attendee's knowledge and understanding of foundational database concepts of the Banner system.
- This presentation is geared towards technical staff learning to support Banner in their organization.



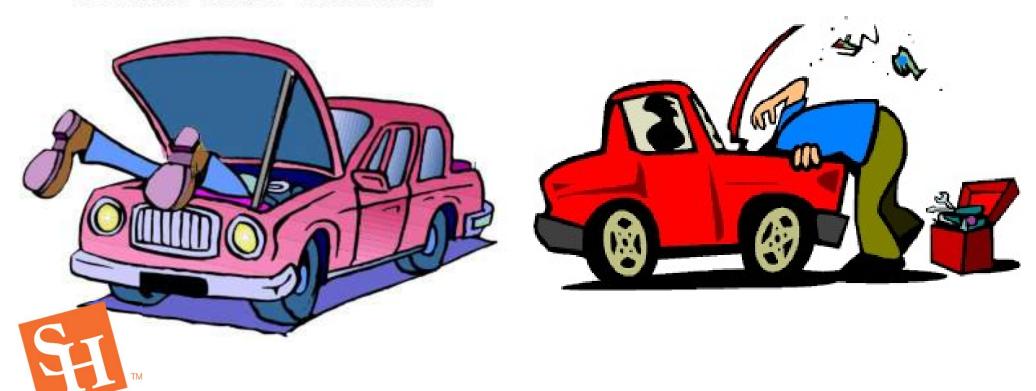
Learning Objectives

- Describe Banner Table/View/Field Naming Conventions
- Describe Banner Tables Schemas/Owners
- Provide technical 'How-To's' related to Tables, Views, Fields, Data, etc.
- Provide technical resources for further research.
- Provide an open discussion of topics discussed.



Banner – Under The Hood

A look under the hood



Tables - The Basics

Banner Table Naming Conventions

• The unique seven- or eight-character names of Banner tables are assigned according to a set of conventions. Each name is built from the same four components:

• System identifier (one or two characters).

Module identifier (one character).

Object type code (one character).

Unique identifier (four characters).



Ex. SPRIDEN

Banner Table Naming Conventions – cont'd.

SPRIDEN

- System Identifier
 - First 1-2 characters of table name.
 - Identifies primary system that owns the table.
 - A Advancement
 - F Finance
 - G General
 - N Position Control
 - P HR/Payroll
 - **R** Financial Aid
 - **S** Student
 - T Accounts Receivable
 - For a full list, refer to the Banner Getting Started Guide.

Banner Table Naming Conventions — cont'd.

SPRIDEN

Module Identifier

- Typically, the ^{2nd} character of table name.
- Identifies primary module that owns the table, within the system identified by the previous character(s).
 - A Admissions
 - C Catalog
 - **E S**upport Services
 - F Registration/Fee Assessment
 - **G** General Student
 - H Grades/Academic History
 - I Faculty Load
 - L Local Management
 - M CAPP
 - O Overall
 - Person
 - R Recruiting
 - S Schedule
 - **T** Validation Table
 - U Utility





Banner Table Naming Conventions – cont'd.

SPRIDEN

- Object Type Code
 - Typically, the 3rd character of table name.
 - Identifies the type of table.
 - **B** Base Table
 - R Repeating/Rule Table
 - **T** Temporary Table
 - V Validation Table or View
 - For a full list, refer to the Banner Getting Started Guide.



Banner Table Naming Conventions – cont'd.

SPRIDEN - Student Person Repeating IDEN tification Table

Unique Identifier

- Typically, the last 4 characters of table name.
- Uniquely Identifies the table, within the System & Module.
 - IDEN Identification Table
- Examples
 - FEED Feed
 - PERS Person
 - TELE Telephone
 - ADDR Address
 - EMPL Employee
 - POSN Position
 - STAT Status
 - GENL General Ledger
 - TRND Transaction Detail



Table Schema/Owner

- Each Table has a **Schema** or **Owner**, which basically owns that table and all its related objects, such as Indexes, Triggers, etc. within the database. Usually the **Schema/Owner** corresponds with the **System Identifier** used in the table name.
- Some Common Owners/Schemas are:
 - **ALUMNI** Advancement Schema Owner
 - BANSECR Security Schema Owner
 - FAISMGR Financial Aid Schema Owner
 - **FIMSMGR** Finance Schema Owner
 - GENERAL General Schema Owner
 - PAYROLL Payroll Schema Owner
 - **POSNCT**L Position Control Schema Owner
 - SATURN Student Schema Owner
 - TAISMGR Accounts Receivable Schema Owner
 - TXCNMGR TCC Schema Owner



Table Talk – Tell Me More!

Common Questions About Tables

- What's the purpose of this table?
- Who owns this table?
- What kind of data does it store?
- What are the fields in this table?
- What do the field names mean?
- How is the table structured?
- What other tables relate to this table?
- What other tables have similar fields?
- What's the impact of changing data in this table or field?
- What triggers, procedures, packages update this table or field?
- Where do I go from here?



Where Can I Find The Answers?

- What are Some Sources of Table Information
 - Ellucian Banner Manuals Maybe, but I kinda doubt it.
 - Google It! Maybe, but results may be out-of-date or inaccurate.
 - Use SQL's desc tablename Gonna get you a little info, but...
 - <u>Use SQL Developer and navigate to it</u> *That may help some, but not very easy to navigate to.*
 - IKEA, Ashley's, Rooms To Go... That's what my wife would tell you.
 - ERD's (Entity Relationship Diagrams), Cross-Ref Charts, Ellucian Support Search Now we're getting somewhere!
 - Oracle Data Dictionary Views (Use SQL) That's Cool!
 - Ask on the Ellucian Forums! Not a bad idea!
 - Use a combination of some of the above (except IKEA)— Home Run!!!!
- Other Sources of Table Information?

Use SQL Describe

Desc SPRIDEN;

Name	Null	L?	Туре
SPRIDEN_PIDM	NOT	NULL	NUMBER(8)
SPRIDEN_ID	NOT	NULL	VARCHAR2 (9 CHAR)
SPRIDEN_LAST_NAME	NOT	NULL	VARCHAR2 (60 CHAR)
SPRIDEN_FIRST_NAME			VARCHAR2 (60 CHAR)
SPRIDEN_MI			VARCHAR2 (60 CHAR)
SPRIDEN_CHANGE_IND			VARCHAR2 (1 CHAR)
SPRIDEN_ENTITY_IND			VARCHAR2 (1 CHAR)
SPRIDEN_ACTIVITY_DATE	NOT	NULL	DATE
SPRIDEN_USER			VARCHAR2 (30 CHAR)
SPRIDEN_ORIGIN			VARCHAR2 (30 CHAR)
SPRIDEN SEARCH LAST NAME			VARCHAR2 (60 CHAR)
SPRIDEN SEARCH FIRST NAME			VARCHAR2 (60 CHAR)
SPRIDEN SEARCH MI			VARCHAR2 (60 CHAR)
SPRIDEN SOUNDEX LAST NAME			CHAR (4 CHAR)
SPRIDEN SOUNDEX FIRST NAME			CHAR (4 CHAR)
SPRIDEN_NTYP_CODE			VARCHAR2 (4 CHAR)
SPRIDEN CREATE USER			VARCHAR2 (30 CHAR)
SPRIDEN CREATE DATE			DATE
SPRIDEN DATA ORIGIN			VARCHAR2 (30 CHAR)
SPRIDEN CREATE FDMN CODE			VARCHAR2 (30 CHAR)
SPRIDEN SURNAME PREFIX			VARCHAR2 (60 CHAR)
SPRIDEN SURROGATE ID	NOT	NULL	NUMBER (19)
SPRIDEN VERSION	NOT	NULL	NUMBER (19)
SPRIDEN_USER_ID			VARCHAR2 (30 CHAR)
SPRIDEN VPDI CODE			VARCHAR2 (6 CHAR)
SPRIDEN_NAME_ERROR_CODE			VARCHAR2 (30 CHAR)

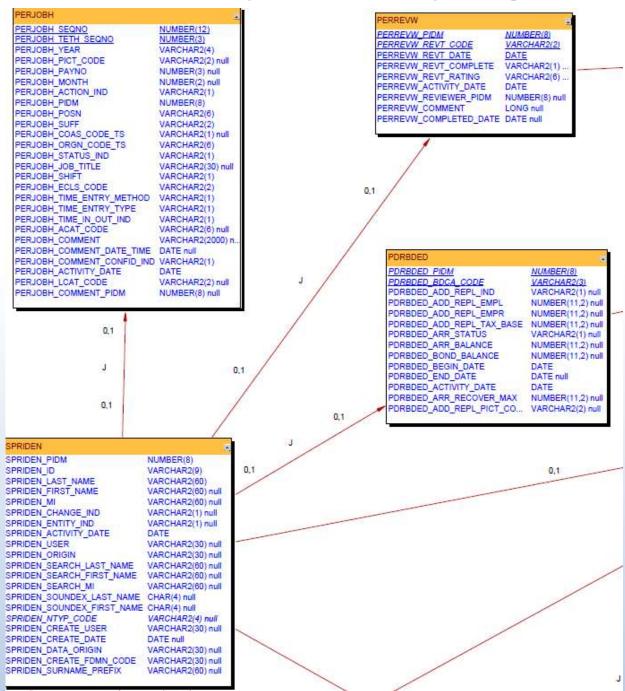


Use SQL Developer

⊕ COLUMN NAME	∯ DATA_TYPE	A NULL ARLE	DATA DEFAULT	∯ COLUMN_ID ∯ COMMENTS
SPRIDEN PIDM	NUMBER(8,0)	No	(null)	1 Internal identification number of the person.
SPRIDEN ID		No	(null)	2 This field defines the identification number u
SPRIDEN LAST NAME	VARCHAR2 (60 CHAR)		(null)	3 This field defines the last name of person.
SPRIDEN FIRST NAME	VARCHAR2 (60 CHAR)		(null)	4 This field identifies the first name of person
SPRIDEN MI	VARCHAR2 (60 CHAR)		(null)	5 This field identifies the middle name of person
SPRIDEN CHANGE IND	VARCHAR2 (1 CHAR)		(null)	6This field identifies whether type of change m
SPRIDEN ENTITY IND	VARCHAR2 (1 CHAR)		(null)	7 This field identifies whether record is person
SPRIDEN ACTIVITY DATE	DATE	No	(null)	8 This field defines the most current date recor
SPRIDEN USER	VARCHAR2 (30 CHAR)	Yes	(null)	9USER: The ID for the user that most recently a
SPRIDEN ORIGIN	VARCHAR2 (30 CHAR)		(null)	10 ORIGIN: The name of the Banner Object that was
SPRIDEN SEARCH LAST NAME	VARCHAR2 (60 CHAR)		(null)	11 The Last Name field with all spaces and punct
SPRIDEN SEARCH FIRST NAME			(null)	12 The First Name field with all spaces and punct
SPRIDEN SEARCH MI	VARCHAR2 (60 CHAR)		(null)	13 The MI (Middle Initial) field with all spaces
SPRIDEN SOUNDEX LAST NAME	CHAR (4 CHAR)	Yes	(null)	14 The Last Name field in SOUNDEX phonetic format
SPRIDEN SOUNDEX FIRST NAME		Yes	(null)	15 The First Name field in SOUNDEX phonetic forma
SPRIDEN_NTYP_CODE		Yes	(null)	16 NAME TYPE CODE: The field is used to store the
SPRIDEN CREATE USER	VARCHAR2 (30 CHAR)	Yes	(null)	17 Record Create User: This field contains Banner
SPRIDEN CREATE DATE	DATE	Yes	(null)	18 Record Create Date: This field contains date n
SPRIDEN DATA ORIGIN	VARCHAR2 (30 CHAR)	Yes	(null)	19 DATA SOURCE: Source system that generated the
SPRIDEN CREATE FDMN CODE	VARCHAR2 (30 CHAR)	Yes	(null)	20 PII DOMAIN: PII Domain of the user who created
SPRIDEN SURNAME PREFIX	VARCHAR2 (60 CHAR)	Yes	(null)	21 SURNAME PREFIX: Name tag preceding the last na
SPRIDEN_SURROGATE_ID	NUMBER (19,0)	No	(null)	22 SURROGATE ID: Immutable unique key
SPRIDEN_VERSION	NUMBER (19,0)	No	(null)	23 VERSION: Optimistic lock token.
SPRIDEN USER ID	VARCHAR2 (30 CHAR)	Yes	(null)	24 USER ID: The user ID of the person who inserte
SPRIDEN VPDI CODE	VARCHAR2 (6 CHAR)		(null)	25 VPDI CODE: Multi-entity processing code.
SPRIDEN NAME ERROR CODE	VARCHAR2 (30 CHAR)		(null)	26 (null)



Use ERD's – Entity Relationship Diagrams





Use Oracle Data Dictionary Views

Common Views Related to Tables & Fields

- ALL_TABLES Lists all tables
- ALL_VIEWS Lists all views
- ALL_TAB_COLUMNS Describes the columns of the tables & views
- ALL_TAB_COMMENTS Displays comments for the tables & views
- ALL_COL_COMMENTS Displays comments for columns in tables
 & views
- ALL_SOURCE Contains source code for all PL/SQL objects, including functions, procedures, packages, and package bodies.
- Other views also exist for the Data Dictionary, such as
 - ALL_PROCEDURES, ALL_TRIGGERS, ALL_OBJECTS

Other Variants of the Views

- DBA Views for all objects in the database
- ALL Views for all objects in the database accessible to user
- USER Views for all objects owned by the user

Data Dictionary Queries

```
-- Details about Tables
select *
from ALL_TABLES
where TABLE_NAME = 'SPRIDEN';
```

OWNER	↑ TABLESPACE_NAME	\$ CLUSTER_NAME		♦ STATUS	PCT_FREE	PCT_USED		♦ MAX_TRANS ♦ I
1 SATURN SPRIDEN	DEVELOPMENT	(null)	(null)	VALID	10	(null)	1	255



-- List of Tables by Owner

	♦ OWNER	↑ TABLE	♦ STATUS		∯ ROWS
1	TXCNMGR	EXCEPTIONS	VALID	13-JAN-19	0
2	TXCNMGR	FZBWRNT	VALID	09-NOV-21	365772
3	TXCNMGR	FZRHUBV	VALID	01-MAY-22	317
4	TXCNMGR	FZRINVA	VALID	18-APR-22	1308030
5	TXCNMGR	FZRINVC	VALID	11-OCT-21	1053491
6	TXCNMGR	FZRINVT	VALID	04-MAY-22	1590
7	TXCNMGR	FZRJVAU	VALID	13-JAN-19	0
8	TXCNMGR	FZRJVUD	VALID	13-JAN-19	0
9	TXCNMGR	FZRLVLS	VALID	03-MAY-22	65205
10	TXCNMGR	FZRPCA1	VALID	09-OCT-21	10



-- List The Fields in a Table

select T1.COLUMN NAME "FIELD NAME",

SUBSTR(T1.DATA_TYPE||'('||T1.DATA_LENGTH||')', 0, 20) type,
T1.NULLABLE,
T2.COMMENTS

from ALL_TAB_COLUMNS T1

left outer join ALL_COL_COMMENTS T2

on T1.TABLE_NAME = T2.TABLE_NAME
and T1.COLUMN_NAME = T2.COLUMN_NAME

where T1.TABLE_NAME = 'SPRIDEN'
order by COLUMN ID;



	∯ FIELD NAME	∜ TYPE	♦ NULLABLE	
1	SPRIDEN_PIDM	NUMBER (22)	N	Internal identification number of the person.
2	SPRIDEN_ID	VARCHAR2 (36)	N	This field defines the identification number used to access perso
3	SPRIDEN_LAST_NAME	VARCHAR2 (240)	N	This field defines the last name of person.
4	SPRIDEN_FIRST_NAME	VARCHAR2 (240)	Y	This field identifies the first name of person.
5	SPRIDEN_MI	VARCHAR2 (240)	Y	This field identifies the middle name of person.
6	SPRIDEN_CHANGE_IND	VARCHAR2 (4)	Y	This field identifies whether type of change made to the record w
7	SPRIDEN_ENTITY_IND	VARCHAR2 (4)	Y	This field identifies whether record is person or non-person reco
8	SPRIDEN_ACTIVITY_DATE	DATE(7)	N	This field defines the most current date record is created or cha
9	SPRIDEN_USER	VARCHAR2 (120)	Y	USER: The ID for the user that most recently updated the record.
10	SPRIDEN_ORIGIN	VARCHAR2 (120)	Y	ORIGIN: The name of the Banner Object that was used most recently
11	SPRIDEN_SEARCH_LAST_NAME	VARCHAR2 (240)	Y	The Last Name field with all spaces and punctuation removed and a
12	SPRIDEN_SEARCH_FIRST_NAME	VARCHAR2 (240)	Y	The First Name field with all spaces and punctuation removed and
13	SPRIDEN_SEARCH_MI	VARCHAR2 (240)	Y	The MI (Middle Initial) field with all spaces and punctuation rem
14	SPRIDEN_SOUNDEX_LAST_NAME	CHAR (16)	Y	The Last Name field in SOUNDEX phonetic format.
15	SPRIDEN_SOUNDEX_FIRST_NAME	CHAR (16)	Y	The First Name field in SOUNDEX phonetic format.
16	SPRIDEN_NTYP_CODE	VARCHAR2 (16)	Y	NAME TYPE CODE: The field is used to store the code that represen

-- List All Tables with Particular Fields

-- and Owned by a Particular Owner

```
select *
from ALL_TAB_COLUMNS
where COLUMN_NAME like '%PIDM%'
    and owner = 'TXCNMGR'
order by OWNER, TABLE_NAME, COLUMN_NAME;
```

	♦ OWNER	↑ TABLE_NAME	COLUMN_NAME	⊕ DATA_TYPE			DATA_LENGTH	DATA_PRECISION & DA
1	TXCNMGR	FZRJVUD	FZRJVUD_VENDOR_PIDM	NUMBER	(null)	(null)	22	8
2	TXCNMGR	FZRTINS	FZRTINS_PIDM	NUMBER	(null)	(null)	22	8
3	TXCNMGR	FZRUCLR	FZRUCLR_VEND_PIDM	NUMBER	(null)	(null)	22	8
4	TXCNMGR	FZRUDTL	FZRUDTL_VEND_PIDM	NUMBER	(null)	(null)	22	8
5	TXCNMGR	FZRUSAS	FZRUSAS_VEND_PIDM	NUMBER	(null)	(null)	22	8
6	TXCNMGR	FZTHUBP	FZTHUBP_PIDM	NUMBER	(null)	(null)	22	8
7	TXCNMGR	FZTHUBT	FZTHUBT_PIDM	NUMBER	(null)	(null)	22	8
8	TXCNMGR	MLOG\$_SZBPGCC	SZBPGCC_PIDM	NUMBER	(null)	(null)	22	8
9	TXCNMGR	MLOG\$_SZRCBM9	SZRCBM9_PIDM	NUMBER	(null)	(null)	22	8
10	TXCNMGR	MLOG\$_SZRCBMS	SZRCBMS_PIDM	NUMBER	(null)	(null)	22	8
11	TXCNMGR	MLOG\$_SZRFACU	SZRFACU_PIDM	NUMBER	(null)	(null)	22	8
12	TXCNMGR	MLOG\$_SZRGCUG	SZRGCUG_PIDM	NUMBER	(null)	(null)	22	8
13	TXCNMGR	MLOG\$_SZRHEMB	SZRHEMB_PIDM	NUMBER	(null)	(null)	22	8
14	TXCNMGR	MLOG\$_SZRHEVA	SZRHEVA_PIDM	NUMBER	(null)	(null)	22	8
15	TVCNIACD	MT ACC CONDUCTED	פיזחטשיים הדהא	MILIMORD	/mm11)	(mul1)	າາ	0



Details about Views select * from ALL_VIEWS where OWNER = 'BANINST1' order by VIEW_NAME;

	♦ OWNER		↑ TEXT_LENGTH	TEXT			
1	BANINST1	AF_ACCOUNT_DETAIL_VIEW	960	SELECT	FRBGBIL_PMSC_CODE,	TRRACCD	GRNT_CODE,
2	BANINST1	AF_ACCTG_DISTRIBUTION_ANALYSIS	9452	select	fabinvh_vend_pidm,	fabinvh_code, fa	binvh_multipl
3	BANINST1	AF_ACCT_ATTRIBUTES_PROFILE	948	SELECT	ftracta_coas_code,	ftvcoas_title	, 'ACCT', f
4	BANINST1	AF_ACTV_ATTRIBUTES_PROFILE	948	SELECT	ftracva_coas_code,	ftvcoas_title	, 'ACTV', f
5	BANINST1	AF_ATTRIBUTE_SETS_PROFILE	643	SELECT	ftvatts_coas_code,ft	tvcoas_title,ftv	atts_code,ftv
6	BANINST1	AF_ATYP_ATTRIBUTES_PROFILE	948	SELECT	ftratya_coas_code,	ftvcoas_title	, 'ATYP', f
7	BANINST1	AF_BILLING_DETAIL_VIEW	1023	SELECT	FRBGBIL_PMSC_CODE,	FRRBDET	GRNT_CODE,
8	BANINST1	AF_BUDGET_AVAILABILITY	9866	select	substr(to_char(to_c	date(fgbbavl_fsy	r_code,'RR'),
9	BANINST1	AF_BUDGET_DEVELOPMENT	13625	select	fbvbldl_obud_code,	ftvobud_budg_ti	tle, fbvbldl_
10	BANINST1	AF_CHART_ATTRIBUTES_PROFILE	417	SELECT	ftvattt_coas_code,ft	tvcoas_title,ftv	attt_code,ftv
11	BANINST1	AF_DISBURSEMENT_ANALYSIS	3173	SELECT	fabinvh_vend_pidm		
12	BANINST1	AF_ENDOWMENT_DISTR_PROFILE	2820	SELECT	FNVENDW_COAS_COI	DE, FNVENDW_P	OOL_CODE,
13	RANTNST1	AF FNDOWMENT FINDS PROFILE	2674	SFT.FCT	FNVFNDW COAS COI	ם שחמשעשים שח	OOT. CODE



```
-- Locate PL/SQL Code
```

-- Where PIDM is used

-- In TCC Code

select OWNER, TYPE, NAME, LINE, TEXT
from ALL_SOURCE
where upper(TEXT) like '%PIDM%'
 and OWNER = ('TXCNMGR')
order by OWNER, TYPE, NAME, LINE;

	♦ OWNER	∯ TYPE	∜ NAME	∯ LINE	∯ TEXT
1	TXCNMGR	TRIGGER	PT_TCC_PZBESTD	10	pzbestd_pidm,
2	TXCNMGR	TRIGGER	PT_TCC_PZBESTD	20	:new.pebempl_pidm,
3	TXCNMGR	TRIGGER	PT_TCC_PZBESTD	34	pzbestd_pidm,
4	TXCNMGR	TRIGGER	PT_TCC_PZBESTD	44	:old.pebempl_pidm,
5	TXCNMGR	TRIGGER	PT_TCC_PZBESTD	55	pzbestd_pidm
6	TXCNMGR	TRIGGER	PT_TCC_PZBESTD	57	WHERE pzbestd_pidm = :old.pebempl_pidm);
7	TXCNMGR	TRIGGER	PT_TCC_PZBESTD	62	WHERE pzbestd_pidm = :old.pebempl_pidm;
8	TXCNMGR	TRIGGER	SZRTXSI_ROW_SPRHOLD	70	WHERE sprhold_pidm = :NEW.szrtxsi_pidm
9	TXCNMGR	TRIGGER	SZRTXSI_ROW_SPRHOLD	84	<pre>gb_hold.p_create(p_pidm => :NEW.szrtxsi_pidm,</pre>
10	TXCNMGR	TRIGGER	SZRTXSI_ROW_SPRHOLD	108	where sprhold_pidm = :NEW.szrtxsi_pidm
11	TXCNMGR	TRIGGER	T_PZRACCR	13	pzraccr_pidm ,
12	TXCNMGR	TRIGGER	T_PZRACCR	26	:new.phraccr_pidm,
13	TXCNMGR	TRIGGER	T PZRACCR	44	WHERE pzraccr pidm = :old.phraccr pidm



Misc. Data Dictionary Queries



from **ALL_TRIGGERS**where owner = 'TXCNMGR'
order by OWNER, TRIGGER_NAME;

Procedures Owned by TCC

select *
from ALL_PROCEDURES
where owner = 'TXCNMGR'
order by OWNER, OBJECT_NAME;

All Database Objects Owned by TCC

select *

from **ALL_OBJECTS**where owner = 'TXCNMGR'
order by OWNER, OBJECT_NAME,
OBJECT_TYPE;



Reference Materials

- Banner General Technical Reference Manual
- Banner Getting Started Guide
- Banner Transformed: Getting Started With...
- Ellucian Support Search for:
 - Table or Field Name
 - Entity Relationship Diagram
 - ERD
- eCommunities Search or just ask the question
- Oracle Documentation
 - Locate section on Data Dictionary Views
- YouTube Yes, you heard me right!
 - Search for "Oracle Data Dictionary"
- Google
 - Search for Table or Field Name
 - Use discretion with the results
 - May be old or inaccurate



Final Thoughts

- Questions?
- Other Table Wisdom?
- Comments, Suggestions, Closest IKEA?
- Barry Stubbs <u>bstubbs@shsu.edu</u>

