

DMSTEX Business Solutions

DDGS Presentation 4

Generated Subtypes

Sponsored by DMSTEX Business Solutions

- Founded 2010
- 25 Years Oracle Experience
- Database Design and Generation Service
 - Oracle Database Schema
 - PL/SQL Application Programming Interfaces
 - Application Specific Test Data
 - APEX Data Maintenance Forms

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Database Design and Generation Service (DDGS) Presentations

A Series of 5 Presentations

1. DDGS Deliverables
2. DDGS Generated API
3. DDGS Generated Data Handling
4. **DDGS Generated Subtypes**
5. DDGS Generated History and Audit

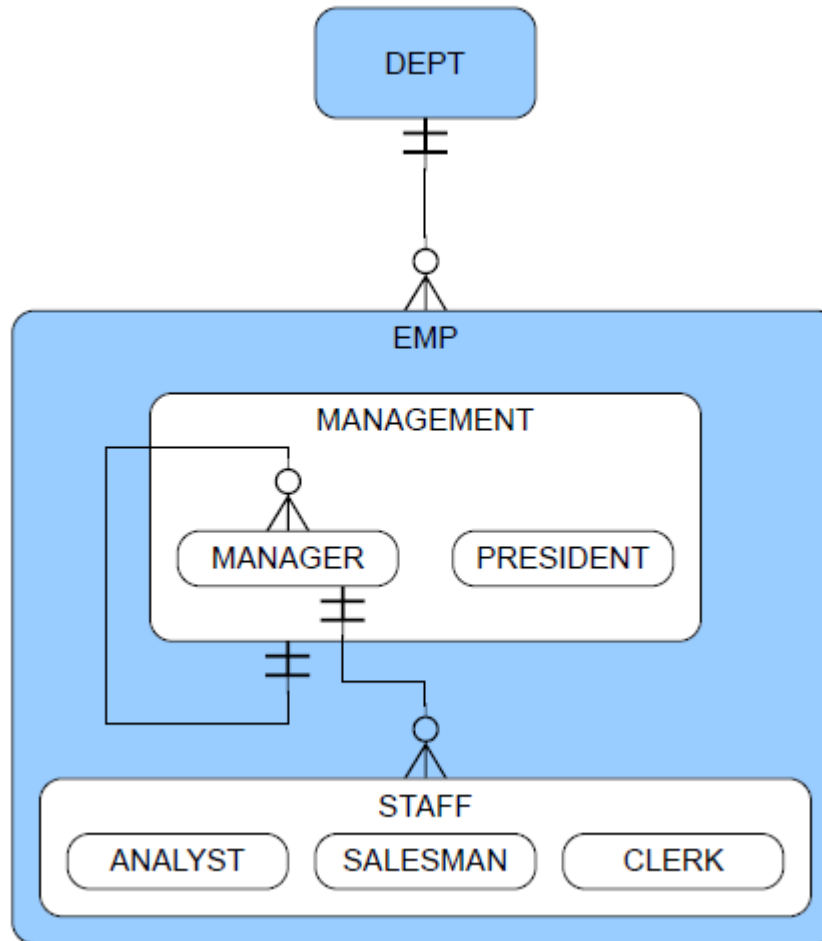
Presentations do not cover all functionality

4. DDGS Generated Subtypes

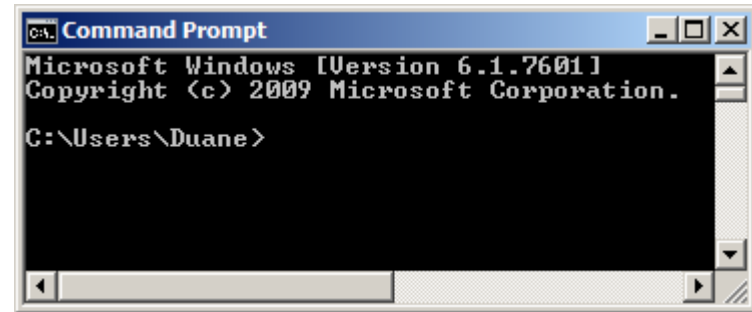
- Documentation and Setup (2 slides)
- Subtype Introduction
- Subtype Database Objects
- Subtype Data Maintenance Forms
- Required vs Optional Subtypes
- Subtype/Domain Validation

Documentation

E-R Diagram



Setup



- Text Editor
- Command Prompt
- Oracle Database 11g
- P4 Deliverables
- Web Browser
- Adobe Reader

4. DDGS Generated Subtypes

- Documentation and Setup
- Subtype Introduction
 - Column Comments
 - Configuration Addendum
- Subtype Database Objects
- Subtype Data Maintenance Forms
- Required vs Optional Subtypes
- Subtype/Domain Validation

Subtype Introduction - Column Comments

COLUMN_NAME	COMMENTS
-----	-----
ID	Surrogate Primary Key for these emp
EMP_SUB_TYPE	Sub-type for these emp
ENAME	Employee Name
CM_EMP_ID	(manager Sub-type) Surrogate Key of Employee's Company Manager
DM_EMP_ID	(staff Sub-type) Surrogate Key of Employee's Department Manager
HIREDATE	Date the Employee was hired
SAL	Employee's Salary
COMM	(salesman Sub-type) Salesman's Commission
SPECIALIZATION	(analyst Sub-type) Analyst Specialization
DEPT_ID	Surrogate Key of Employee's Department

Subtype Introduction

Configuration Addendum

SUBTYPE HIERARCHY (One of the "*" subtypes is required):

-) management
 -) *president
 -) *manager: cm_emp_id
-) staff: dm_emp_id
 -) *analyst: specialization
 -) *salesman: comm
 -) *clerk

4. DDGS Generated Subtypes

- Documentation and Setup
- Subtype Introduction
- Subtype Database Objects
 - EMP Table
 - ANALYST View
 - ANALYST_ACT View
 - "P4" Views
- Subtype Data Maintenance Forms
- Required vs Optional Subtypes
- Subtype/Domain Validation

Subtype Database Objects

EMP Table

Name	Null?	Type
-----	-----	-----
ID	NOT NULL	NUMBER (38)
EMP_SUB_TYPE		VARCHAR2 (25)
ENAME	NOT NULL	VARCHAR2 (30)
CM_EMP_ID		NUMBER (38)
DM_EMP_ID		NUMBER (38)
HIREDATE	NOT NULL	DATE
SAL	NOT NULL	NUMBER (7, 2)
COMM		NUMBER (7, 2)
SPECIALIZATION		VARCHAR2 (10)
DEPT_ID	NOT NULL	NUMBER (38)

Subtype Database Objects

ANALYST View

Name	Null?	Type
-----	-----	-----
ID	NOT NULL	NUMBER (38)
ENAME	NOT NULL	VARCHAR2 (30)
DM_EMP_ID		NUMBER (38)
HIREDATE	NOT NULL	DATE
SAL	NOT NULL	NUMBER (7, 2)
SPECIALIZATION		VARCHAR2 (10)
DEPT_ID	NOT NULL	NUMBER (38)

Subtype Database Objects

ANALYST_ACT View

Name	Null?	Type
-----	-----	-----
ID	NOT NULL	NUMBER (38)
ENAME	NOT NULL	VARCHAR2 (30)
DM_EMP_ID		NUMBER (38)
DM_ID_PATH		VARCHAR2 (4000)
DM_NK_PATH		CLOB
DM_EMP_NK1		VARCHAR2 (30)
HIREDATE	NOT NULL	DATE
SAL	NOT NULL	NUMBER (7, 2)
SPECIALIZATION		VARCHAR2 (10)
DEPT_ID	NOT NULL	NUMBER (38)
DEPT_NK1	NOT NULL	VARCHAR2 (14)

Subtype Database Objects - "P4" Views

VIEW_NAME

ANALYST

ANALYST_ACT

CLERK

CLERK_ACT

DEPT_ACT

EMP_A

EMP_ACT

MANAGER

MANAGER_ACT

PRESIDENT

PRESIDENT_ACT

SALESMAN

SALESMAN_ACT

4. DDGS Generated Subtypes

- Documentation and Setup
- Subtype Introduction
- Subtype Database Objects
- Subtype Data Maintenance Forms (3 slides)
- Required vs Optional Subtypes
- Subtype/Domain Validation

Subtype Data Maintenance Forms 1

Emp Form

127.0.0.1:8080/apex/f?p=204:1220:2107020458501427::NO::P1220_ID:13

Welcome: P4_USR Logout

Dept Form **Emp Form**

Home > Maintenance Menu > Emp Maint > Emp Form

Emp Form Cancel Delete Apply Changes Cancel Changes and Create NEW Record

Id: 13

Emp Sub Type: salesman - Department Salesman

Ename: MARTIN

Cm Emp Id (manager Sub-type):

Cm Id Path (manager Sub-type):

Cm Nk Path (manager Sub-type):

Cm Emp Nk1 (manager Sub-type):

Dm Emp Id (staff Sub-type): 11

Dm Id Path (staff Sub-type): 11

Dm Nk Path (staff Sub-type): ALLEN

Dm Emp Nk1 (staff Sub-type): ALLEN

Hiredate: 28-SEP-1981

Sal: 1250

Comm (salesman Sub-type): 1400

Subtype Data Maintenance Forms 2

Emp Form

127.0.0.1:8080/apex/f?p=204:1220:2107020458501427::NO::P1220_ID:13

Welcome: P4_USR Logout

Dept Form **Emp Form**

Home > Maintenance Menu > Emp Maint > Emp Form

Emp Form Cancel Delete Apply Changes Cancel Changes and Create NEW Record

Id: 13

Emp Sub Type: manager - Department Manager

Ename: MARTIN

Cm Emp Id (manager Sub-type):

Cm Id Path (manager Sub-type):

Cm Nk Path (manager Sub-type):

Cm Emp Nk1 (manager Sub-type):

Dm Emp Id (staff Sub-type): 11

Dm Id Path (staff Sub-type): 11

Dm Nk Path (staff Sub-type): ALLEN

Dm Emp Nk1 (staff Sub-type): ALLEN

Hiredate: 28-SEP-1981

Sal: 1250

Comm (salesman Sub-type): 1400

Subtype Data Maintenance Forms 3

Emp Form

127.0.0.1:8080/apex/f?p=204:1220:2107020458501427::NO::P1220_ID:13

Welcome: P4_USR Logout

Dept Form **Emp Form**

Home > Maintenance Menu > Emp Maint > Emp Form

Emp Form Cancel Delete Apply Changes Cancel Changes and Create NEW Record

Id: 13

Emp Sub Type: manager - Department Manager

Ename: MARTIN

Cm Emp Id (manager Sub-type): 11

Cm Id Path (manager Sub-type): 1:9:11

Cm Nk Path (manager Sub-type): KING:BLAKE:ALLEN

Cm Emp Nk1 (manager Sub-type): ALLEN

Dm Emp Id (staff Sub-type):

Dm Id Path (staff Sub-type):

Dm Nk Path (staff Sub-type):

Dm Emp Nk1 (staff Sub-type):

Hiredate: 28-SEP-1981

Sal: 1250

Comm (salesman Sub-type):

4. DDGS Generated Subtypes

- Documentation and Setup
- Subtype Introduction
- Subtype Database Objects
- Subtype Data Maintenance Forms
- Required vs Optional Subtypes
- Subtype/Domain Validation

Required vs Optional Subtypes

SUBTYPE HIERARCHY (One of the "*" subtypes is required):

-) management
 -) *president
 -) *manager: cm_emp_id
-) staff: dm_emp_id
 -) *analyst: specialization
 -) *salesman: comm
 -) *clerk

4. DDGS Generated Subtypes

- Documentation and Setup
- Subtype Introduction
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- Subtype Data Maintenance Forms
- Required vs Optional Subtypes
- Subtype/Domain Validation
 - APEX (2 slides)
 - SQL/API
 - Configuration Addendum Report

Subtype/Domain Validation - APEX 1

The screenshot shows a web browser window with the URL `127.0.0.1:8080/apex/f?p=204:1220:2107020458501427:☆`. The page title is "Emp Form". In the top right corner, it says "Welcome: P4_USR Logout".

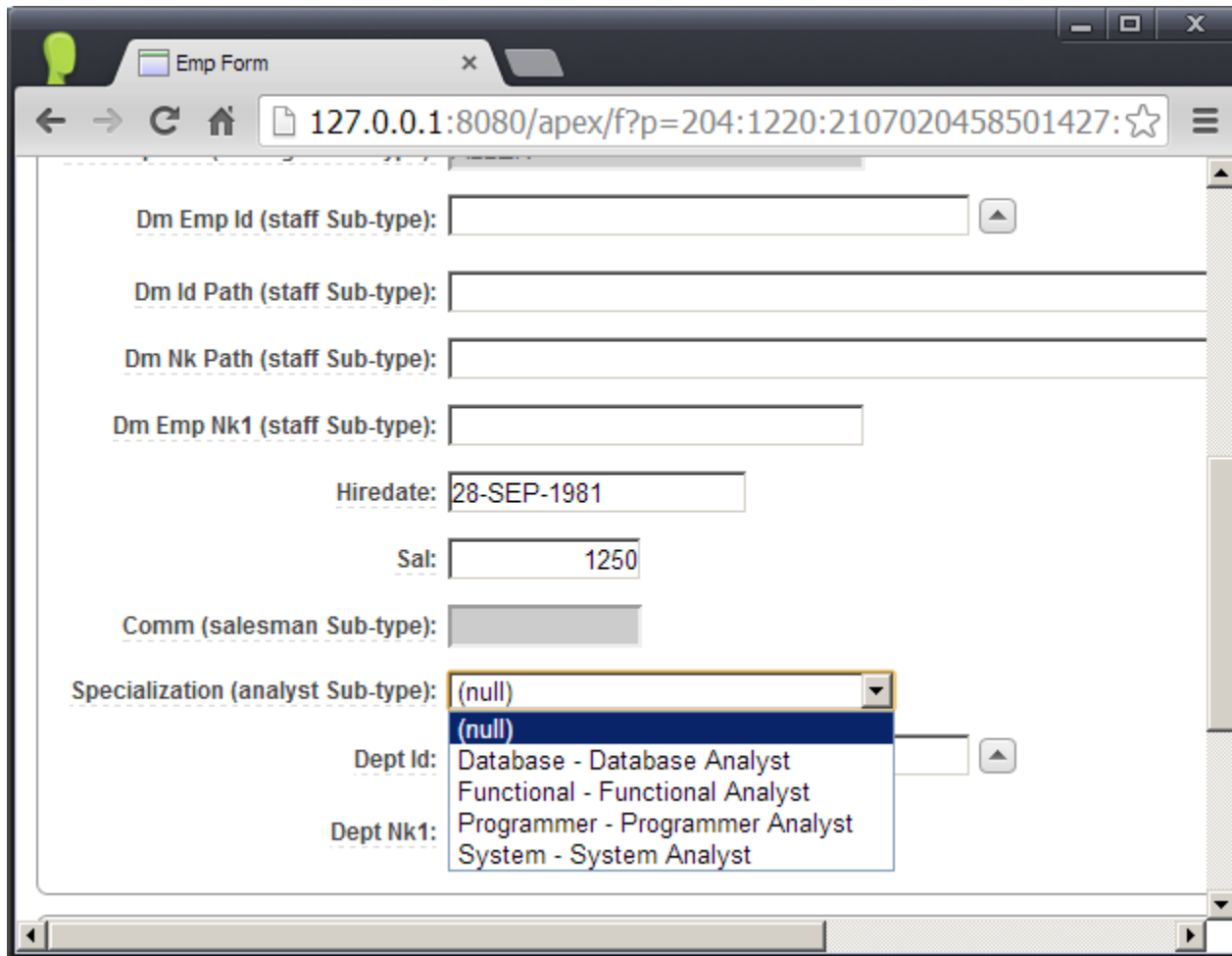
Navigation tabs include "Dept Form" and "Emp Form" (which is highlighted in red). A breadcrumb trail shows "Home > Maintenance Menu > Emp Maint > Emp Form".

Form controls include buttons for "Emp Form", "Cancel", "Delete", "Apply Changes", and "Cancel Changes and Create NEW Record".

The form content includes:

- Id: 13
- Emp Sub Type: A dropdown menu with the following options: "manager - Department Manager", "(null)", "analyst - Department Analyst", "clerk - Department Clerk", "manager - Department Manager" (highlighted), "president - Company President", and "salesman - Department Salesman".
- Ename: A text input field.
- Cm Emp Id (manager Sub-type): A text input field with a dropdown arrow.
- Cm Id Path (manager Sub-type): A text input field.
- Cm Nk Path (manager Sub-type): A text input field containing "KING:BLAKE:ALLEN".
- Cm Emp Nk1 (manager Sub-type): A text input field containing "ALLEN".

Subtype/Domain Validation - APEX 2



The screenshot shows a web browser window with the title "Emp Form". The address bar displays the URL "127.0.0.1:8080/apex/f?p=204:1220:2107020458501427:☆". The form contains several input fields and a dropdown menu:

- Dm Emp Id (staff Sub-type):** An empty text input field.
- Dm Id Path (staff Sub-type):** An empty text input field.
- Dm Nk Path (staff Sub-type):** An empty text input field.
- Dm Emp Nk1 (staff Sub-type):** An empty text input field.
- Hiredate:** A date input field containing "28-SEP-1981".
- Sal:** A numeric input field containing "1250".
- Comm (salesman Sub-type):** A disabled (grayed out) text input field.
- Specialization (analyst Sub-type):** A dropdown menu with a blue border and a downward arrow. The menu is open, showing the following options:
 - (null)
 - (null)
 - Database - Database Analyst
 - Functional - Functional Analyst
 - Programmer - Programmer Analyst
 - System - System Analyst
- Dept Id:** An empty text input field.
- Dept Nk1:** An empty text input field.

Subtype/Domain Validation - SQL/API

```
SQL> select * from table(specialization_dom.table_recs);
```

```
VALUE          SEQ DESCRIPTION
```

```
-----
```

Database	1	Database Analyst
System	2	System Analyst
Programmer	3	Programmer Analyst
Functional	4	Functional Analyst

```
SQL> begin
```

```
  2     if specialization_dom.includes('System')
  3     then dbms_output.put_line('System is included');
  4     else dbms_output.put_line('System not included');
  5     end if; end;
  6 /
```

```
System is included
```


Subtype/Domain Validation

Configuration Addendum Report

Domain Configuration:

Name: Specialization

Abbreviation: SPEC

Case Fold: I

DESCRIPTION:

Analyst Specialization

DOMAIN VALUES:

- 1) Database - Database Analyst
- 2) System - System Analyst
- 3) Programmer - Programmer Analyst
- 4) Functional - Functional Analyst

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