



SQL for the *Non-* Technician

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Today's Topics

- An Introduction to Databases
- Structured Query Language
- Data Definition and Data Manipulation
- SQL versus SQL*Plus
- PL/SQL
- Database Security

What the Heck is a Database?

- Data
 - ◆ Set of Elements
 - ◆ Set of Operations
- Database
 - ◆ Data Definition
 - ◆ Data Manipulation



Structured Query Language

- Standard Set of Commands
- Provides means for
 - ◆ Data Definition (DDL)
 - ◆ Data Manipulation (DML)



Data Manipulation

- Select Statements
- Insert Statements
- Update Statements
- Delete Statements
- Data Conversion

SELECT Statements

SELECT

column1, column2, ... column x

FROM

table, ...

view, ...

WHERE

where condition

GROUP BY

group condition

ORDER BY

ordering criteria

SELECT Statements

SELECT

Segment1 'Company',
Segment2 'Division',
Segment3 'Account',
Segment4 'Sub-Account'

FROM

GL_Code_Combinations

WHERE

Enabled_Flag = 'N'

ORDER BY

Segment1, Segment2, Segment3, Segment4;

INSERT Statements

```
INSERT INTO  
    table_name  
VALUES  
    (list of values);
```

```
INSERT INTO  
    table_name  
    (list of columns)  
VALUES  
    (list of values);
```



INSERT Statements

```
INSERT INTO  
    table_name  
select_statement;
```

```
INSERT INTO  
    table_name  
    (list of columns)  
select_statement;
```

INSERT Statements

```
INSERT INTO  
  FND_USER  
  (user_name, end_date)  
VALUES  
  ('WALSHJ', SYSDATE + 365);
```

UPDATE Statements

UPDATE

table_name

SET

column = value,

column = select_statement

column, column = value ...

WHERE

where condition;

UPDATE Statements

```
UPDATE
  AP_Selected_Invoice_Checks
SET
  Vendor_Name = 'Charles Keating'
WHERE
  Payment_Amount > 5000;
```



DELETE Statements

```
DELETE FROM  
    table_name  
WHERE  
    where_condition;
```



DELETE Statements

```
DELETE FROM  
    FND_User  
WHERE  
    User_Name = 'WALSHJ';
```



Data Definition

- Create Table
- Create View
- Create Sequence



Data Types

- Character
- Numbers
- Dates
- Binary Objects
- File Pointers

Create Table

```
CREATE TABLE  
  table_name  
(column datatype,  
 column datatype, ...);
```

```
CREATE TABLE  
  table_name  
AS select_statement;
```

Create Table

```
CREATE TABLE
  Legacy_Vendors
(Vendor_Name      VARCHAR2(50),
 Vendor_Number    VARCHAR2(10),
 Address1         VARCHAR2(50),
 Address2         VARCHAR2(50),
 City             VARCHAR2(25),
 State            VARCHAR2(2),
 Zip_Code         VARCHAR2(10));
```

Create Table

```
CREATE TABLE
    Payroll_Code_Combinations
AS
SELECT
    Segment1 Company,
    Segment2 Division,
    Segment3 Account,
    Segment4 SubAccount
FROM
    GL_Code_Combinations
WHERE
    Segment3 LIKE '45%';
```



Create View

```
CREATE VIEW OR REPLACE
```

```
    view_name
```

```
AS
```

```
    select_statement;
```

Create View

```
CREATE VIEW OR REPLACE  
    Payroll_Code_Combinations_V  
AS  
SELECT  
    Segment1 Company,  
    Segment2 Division,  
    Segment3 Account,  
    Segment4 SubAccount  
FROM  
    GL_Code_Combinations  
WHERE  
    Segment3 LIKE '45%';
```



Create Sequence

```
CREATE SEQUENCE  
sequence_name;
```

```
CREATE SEQUENCE  
sequence_name  
INCREMENT BY  
increment  
START WITH  
starting_point;
```

Create Sequence

```
CREATE SEQUENCE  
Library_Card_Number;
```

```
CREATE SEQUENCE  
TAR_Number  
INCREMENT BY  
10  
START WITH  
100000.6;
```

Data Conversion

- Character to Numbers
 - ◆ `to_number('string')`
- Character to Dates
 - ◆ `to_date('string', 'format')`
- Dates to Characters
 - ◆ `to_char(date, 'format')`
- Numbers to Characters
 - ◆ `to_char(number, 'format')`

SQL versus SQL*Plus

- SQL is a Standard
- SQL*Plus extends standard SQL
 - ◆ Editing
 - ◆ DECODE
 - ◆ COLUMN
 - ◆ SET



PL/SQL

- Procedural Language
- Provides Structures
 - ◆ Sequence
 - ◆ Iteration
 - ◆ Alternation
- Create Procedures, Functions, Packages
- Store Code in Database



Database Objects

- Tables
- Views
- Sequences
- Procedures
- Functions
- Packages
- Package Bodies



Dropping Objects

- Drop Table `table_name`;
- Drop View `view_name`;
- Drop Sequence `sequence_name`;
- Drop Package `package_name`;
- Drop Procedure `procedure_name`;
- Drop Function `function_name`;

Database Security

- Privileged Users
 - ◆ SYS
 - ◆ SYSTEM
 - ◆ APPLSYS
 - ◆ APPS
- Users with Critical Data
 - ◆ GL, AP, AR, etc.

Database Security

- Oracle Applications Tables Columns
 - ◆ Creation_Date
 - ◆ Created_By
 - ◆ Last_Update_Date
 - ◆ Last_Updated_By



Database Security

- Holes In Security
 - ◆ Copy of Production for Development/Test
 - ◆ Discoverer
 - ◆ Express Analyzer
 - ◆ Third Party Applications that require DBA



Database Security

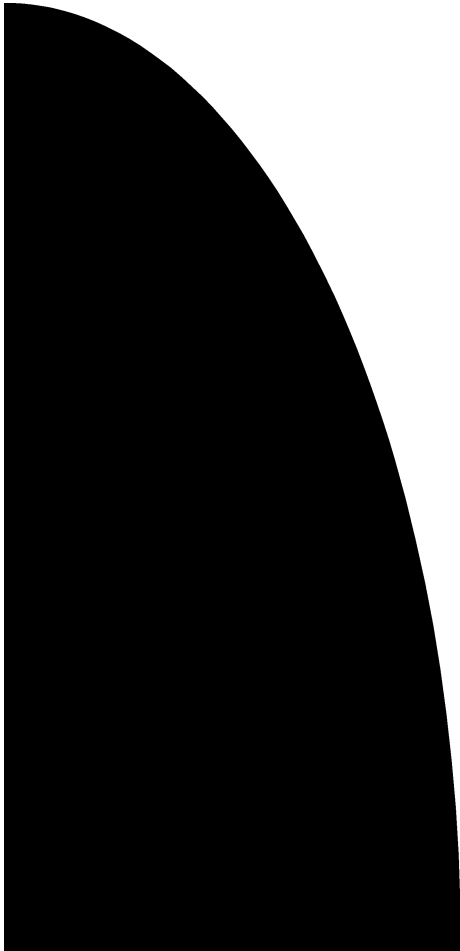
- Plugging the Holes
 - ◆ Protect Passwords
 - ◆ Separate DBAs
 - ◆ Archive Logs

Things We Didn't Discuss

- Sets (Union, Intersection, Minus)
- Joins
- Indexes
- Triggers
- Grants
- Constraints
- Data Dictionary
- Database Administration

The Next Step

- Get A Book
 - ◆ Oracle Press
 - ✦ Oracle8 The Complete Reference
 - ◆ For Dummies Series
 - ◆ O'Reilly & Associates
- Get Personal Oracle8
- Attend Classes
- Practice



Questions?