PL/SQL and the Table API

Benefits of Server-Side Code
- Reduced network traffic
- Maintainability
- Data integrity

Older Editions of Designer
- Most constraints only enforced in application
- Server vulnerable to other access methods
- Application code references tables and generates network traffic

Database Trigger
- NOT a form trigger
  - When-enter-block, When-validate-item...
  - Occurs in server
  - Associated with Lock or DB modification
  - Before or After DB event
  - For every affected Row, or Statement

What Is a Database Trigger?
- When
  - Before DML
  - After DML
- What
  - Row
  - Statement
Database Trigger
Code that is implicitly executed when an INSERT, UPDATE, or DELETE statement is issued against its associated table or view

Triggers and Packages
- Triggers often call procedures in Packages
- Packages provide Scope for Variables shared by Procedures
- Each process gets own copy of Package Variables

Packages
- Specification
- Body
- Procedures
- Functions
- Public and Private Elements

PL/SQL in the Repository
- APPLICATION[1]
- TITLES
- Triggers
- TRIG1
- PL/SQL Definitions
- Trigger Definitions
- Trigger Header
- Definition
- PL/SQL Definition
- Complete
- Enabled
- Trigger:
- When Condition
- PL/SQL Block
- PL/SQL Logic

Defining Triggers
Slide 11
Opening the Logic Editor

- Drag the definition to the work surface

Slide 12
Using the Logic Editor

Slide 13
Generating PL/SQL Objects

- DDL file: CREATE OR REPLACE statements
  - Header
  - Data declarations
  - PL/SQL logic

- Use the utility as you would for other database objects

Slide 14
Fortunately ...

- You do not have to write most triggers or packages
- Designer writes them for you
- You give specifications
- You generate Table API
- All this code used to be in Applications

Slide 15
Table API Keeps Applications Thin

Slide 16
Table API Triggers

- Fire on insert, update, or delete
- Call the server packages

Slide 17
Table API Packages

- Are called by:
  - Applications
  - Triggers
- Perform DML operations
- Validate data
- Derive column values

Slide 18
Server Packages

Slide 19
Why API?

- Table API provides a Table Handler for each package
- Normal DML causes Triggers to Invoke Handlers
- Applications can call API procedures directly
  - Disabling recursive call of trigger

Slide 20
Applications and the API
Customization

- API handles many standard Requirements.
- You can add code to API for special Requirements.
- Even specify whether it is called before or after standard handling.