Capstone Presentation – PL/SQL Automation Example
Automating Database Operations in Oracle APEX
Real Estate

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Content

- Demonstrates how SQL and PL/SQL can automate database operations.

- Automates creation of tables, sequences, and triggers.

- Focuses on:

  - Assigning unique IDs to agents automatically

  - Ensuring data integrity

  - Minimizing manual errors

- This project shows the power of PL/SQL in automating repetitive database tasks, making data management more reliable.

Key Concepts

- **Exception Handling:** Safe reruns without conflicts.

- **Database Automation:** Unique IDs generated automatically using sequences.

- **Trigger Logic:** IDs auto-assigned upon inserting new records.

- **Data Reliability:** Prevents duplicate IDs and human errors.

Script Component

Component	Purpose
Drop Objects	Safely remove previous objects to allow reruns
Create sequence	Generates unique AgentIDs automatically
Create Table	Defines structure for storing agent data
Trigger + Inserts	Automates ID assignment when new records are added

Example of Output

AgentID	AGENTNAME
1	Alice
2	Bob

- Trigger automatically assigns AgentIDs
- No manual input needed for IDs

Live Example – SQL Demo(Oracle Apex)

INSERT INTO Agents (AgentName) VALUES ('Charlie');

COMMIT;

SELECT * FROM Agents;

Expected output:

AgentID	AGENTNAME
1	Alice
2	Bob
3	Charlie

Reflection

- Automation reduces human error and increases efficiency.

- Exception handling ensures safe execution of scripts.

- Principles can scale to larger systems: HR, finance, or real estate databases.

- Sequences and triggers are essential tools for reliable database design.

THANK YOU

QUESTIONS? NEXT SLIDE FOR FULL OVERVIEW

↑   SQL Scripts \ **Results**

Script: **Agents_Setup.sql** ⑦   Status: **Complete** ⑦

View: ● Detail ● **Summary** ⑦   Rows [15 ▽] ⑦ [Go]   [Create App] [Edit Script]

Number ↑≝	Elapsed	Statement	Feedback	Rows
1	0.04	BEGIN EXECUTE IMMEDIATE 'DROP TRIGGER trg_agents_bi'; EX	Statement processed.	1
2	0.85	BEGIN EXECUTE IMMEDIATE 'DROP TABLE Agents CASCADE CONSTR	Statement processed.	1
3	0.03	BEGIN EXECUTE IMMEDIATE 'DROP SEQUENCE agents_seq2'; EXC	Statement processed.	1
4	0.03	CREATE SEQUENCE agents_seq2 START WITH 1 INCREMENT BY 1	Sequence created.	0
5	0.03	CREATE TABLE Agents (AgentID NUMBER PRIMARY KEY, Agen	Table created.	0
6	0.04	CREATE OR REPLACE TRIGGER trg_agents_bi BEFORE INSERT ON Ag	Trigger created.	0
7	0.03	INSERT INTO Agents (AgentName) VALUES ('Alice')	1 row(s) inserted.	1
8	0.00	INSERT INTO Agents (AgentName) VALUES ('Bob')	1 row(s) inserted.	1
9	0.00	COMMIT	Statement processed.	0
10	0.00	SELECT * FROM Agents	2 rows selected.	2

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row(s) 1 - 10 of 10

10	10	0
Statements Processed	Successful	With Errors