**FACULTY OF COMPUTING**
UTM Johor Bahru

# SECD2523-01 PANGKALAN DATA (DATABASE)
# SQL 2 – DML 1 PART 1
# SEMESTER 1 (2023/2024)

| | |
|---|---|
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## Section 6 Lesson 4 Exercise 1:  Data Manipulation Language

**Use DML operations to manage database tables (S6L4 Objective 2)**

In this exercise you will populate and work with the data that is stored in the database system tables.

**Part 1: Running a script to populate the tables.**

You have to consider the order of the tables when populating them.  A table that has a foreign key field cannot be populated before the related table with the primary key.

1.  Use the table mapping document and list the order that you would use to populate the tables.

    inventory_list

    items

    price_history

    sales_representatives

    sales_rep_addresses

    teams

    customers

    customers_addresses

    orders

    ordered_items

2.  Open the "sports data.sql" and look at the order the data is being added there, does your list match?    This file can be found in the Section 6 Lesson 4 interaction (sports data.zip) and must first be extracted.

    Yes, it matches

3.   Run the "sports data.sql" script in APEX to populate your tables

4. Check that no errors occurred when you ran the script.

| Number ↑≞ | Elapsed | Statement | Feedback | Rows |
|---|---|---|---|---|
| 1 | 0.04 | INSERT INTO inventory_list (id, cost, units) VALUES('iI01023 | 1 row(s) inserted. | 1 |
| 2 | 0.00 | INSERT INTO inventory_list (id, cost, units) VALUES('iI01023 | 1 row(s) inserted. | 1 |
| 3 | 0.01 | INSERT INTO inventory_list (id, cost, units) VALUES('iI01023 | 1 row(s) inserted. | 1 |
| 4 | 0.00 | INSERT INTO inventory_list (id, cost, units) VALUES('iI01023 | 1 row(s) inserted. | 1 |
| 5 | 0.00 | INSERT INTO inventory_list (id, cost, units) VALUES('iI01023 | 1 row(s) inserted. | 1 |
| 6 | 0.04 | INSERT INTO items (itm_number, name, description, category, | 1 row(s) inserted. | 1 |
| 7 | 0.00 | INSERT INTO items (itm_number, name, description, category, | 1 row(s) inserted. | 1 |
| 8 | 0.00 | INSERT INTO items (itm_number, name, description, category, | 1 row(s) inserted. | 1 |
| 9 | 0.00 | INSERT INTO items (itm_number, name, description, category, | 1 row(s) inserted. | 1 |
| 10 | 0.00 | INSERT INTO items (itm_number, name, description, category, | 1 row(s) inserted. | 1 |
| 11 | 0.02 | INSERT INTO price_history (start_date, start_time, price, it | 1 row(s) inserted. | 1 |
| 12 | 0.00 | INSERT INTO price_history (start_date, start_time, price, en | 1 row(s) inserted. | 1 |
| 13 | 0.01 | INSERT INTO price_history (start_date, start_time, price, en | 1 row(s) inserted. | 1 |
| 14 | 0.00 | INSERT INTO price_history (start_date, start_time, price, it | 1 row(s) inserted. | 1 |
| 15 | 0.00 | INSERT INTO price_history (start_date, start_time, price, it | 1 row(s) inserted. | 1 |

Download

row(s) 1 - 15 of 47    Next ▶

| 47 | 47 | 0 |
|---|---|---|
| Statements Processed | Successful | With Errors |

**Part 2- Inserting rows to the system**

1. Add a new team to the system

| id | name | Number_of_players | discount |
|---|---|---|---|
| t004 | Jets | 10 | 5 |

INSERT INTO teams (id, name, number_of_players, discount)

VALUES('t004', 'Jets', 10, 5);

2. Add a new Customer with the following details to the system

| ctr number | email | First name | Last name | Phone number | Current balance | Loyalty card number | tem id | sre id |
|---|---|---|---|---|---|---|---|---|
| c02001 | brianrog@hootech.com | Brian | Rogers | 01654564898 | -5 | lc4587 | | |

INSERT INTO customers (ctr_number, email, first_name, last_name, phone_number, current_balance, loyalty_card_number, sre_id, tem_id)

VALUES('c02001', 'brianrog@hootech.com ', 'Brian', 'Rogers', '01654564898', -5.00, 'lc4587', null, null);

Script: **SPORTSDATA** ⓘ  Status: **Complete** ⓘ
View: ○ Detail ● Summary ⓘ  Rows 15 [Go]  [Create App] [Edit Script]

| Number ↑≣ | Elapsed | Statement | Feedback | Rows |
|---|---|---|---|---|
| 46 | 0.00 | INSERT INTO ordered_items (quantity_ordered, quantity_shippe | ORA-00001: unique constraint (WKSP_UTM123456.ORDERED_ITEM_PK) violated | - |
| 47 | 0.01 | INSERT INTO ordered_items (quantity_ordered, quantity_shippe | ORA-00001: unique constraint (WKSP_UTM123456.ORDERED_ITEM_PK) violated | - |
| 48 | 0.00 | INSERT INTO teams (id, name, number_of_players, discount) VA | ORA-00001: unique constraint (WKSP_UTM123456.TEAM_PK) violated | - |
| 49 | 0.01 | INSERT INTO customers (ctr_number, email, first_name, last_n | ORA-02290: check constraint (WKSP_UTM123456.CURRENT_BALANCE_CHECK) violated | - |

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◀ Previous   row(s) 46 - 49 of 49

| 49 | 0 | 49 |
|---|---|---|
| Statements Processed | Successful | With Errors |

faiqah0804@gmail.com   #utm123456   en
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Oracle APEX 23.2.0-17

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Object Browser   Schema [WKSP_UTM123456 ▾]

✓ **Row deleted**   ✕

🔍 Type to filter...  [+ ▾]

▦ **CUSTOMERS**

Columns | **Data** | Indexes | Constraints | Grants | Statistics | Triggers | Dependencies | DDL | Sample Queries

＋ Insert Row   ▥ Columns...   ▽ Filter...   ☰ Count Rows   ⬇ Load Data   ⬇ Download   ⟳ Refresh

∨ ▦ Tables
  [CUSTOMERS]
  CUSTOMERS_ADDRESSES
  INVENTORY_LIST
  ITEMS
  ORDERED_ITEMS
  ORDERS
  PRICE_HISTORY
  SALES_REPRESENTATIVES
  SALES_REP_ADDRESSES
  TEAMS
▦ Views
▷ ↓½ Indexes
▦ Sequences
▧ Types
▦ Packages
▦ Procedures

| | CTR_NUMBER | EMAIL | FIRST_NAME | LAST_NAME | PHONE_NUMBER | CURRENT_BALANCE | SRE_ID | TEM_ID | LOYALTY_CARD_NUM |
|---|---|---|---|---|---|---|---|---|---|
| ✎ | c00001 | bob.thornberry... | Robert | Thornberry | 01234567898 | 150 | sr01 | t001 | |
| ✎ | c00012 | Jjones@freemai... | Jennifer | Jones | 01505214598 | 0 | | | lc1015 |
| ✎ | c00101 | unknown@here.... | John | Doe | 03216547808 | 987.5 | sr01 | t002 | |
| ✎ | c00103 | MurciaA@global... | Andrew | Murcia | 07715246890 | 85 | | | lc2341 |
| ✎ | c01986 | margal87@delp... | Maria | Galant | 01442736589 | 125.65 | sr03 | t003 | |

1 cells selected

3. This information violates the check constraint that the current balance must not be less than zero.  Change the current balance to 50 and rerun the query.

INSERT INTO customers (ctr_number, email, first_name, last_name, phone_number, current_balance, loyalty_card_number, sre_id, tem_id)

VALUES('c02001', 'brianrog@hootech.com ', 'Brian', 'Rogers', '01654564898', 50.00, 'lc4587', null, null);

↑  SQL Scripts \ Results

Script: **SPORTSDATA** ⑦   Status: **Complete** ⑦

View:  ○ Detail  ● Summary ⑦   Rows  [ 15          ▼ ] ⑦  [ Go ]        [ Create App ]  [ Edit Script ]

| Number ↑≡ | Elapsed | Statement | Feedback | Rows |
|---|---|---|---|---|
| 46 | 0.00 | INSERT INTO ordered_items (quantity_ordered, quantity_shippe | ORA-00001: unique constraint (WKSP_UTM123456.ORDERED_ITEM_PK) violated | - |
| 47 | 0.00 | INSERT INTO ordered_items (quantity_ordered, quantity_shippe | ORA-00001: unique constraint (WKSP_UTM123456.ORDERED_ITEM_PK) violated | - |
| 48 | 0.00 | INSERT INTO teams (id, name, number_of_players, discount) VA | ORA-00001: unique constraint (WKSP_UTM123456.TEAM_PK) violated | - |
| 49 | 0.00 | INSERT INTO customers (ctr_number, email, first_name, last_n | 1 row(s) inserted. | 1 |

Download

◄ Previous   row(s) 46 - 49 of 49

|  | 49 |  | 1 |  | 48 |  |
|---|---|---|---|---|---|---|
|  | Statements Processed |  | Successful |  | With Errors |  |

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↑  **Object Browser**                                                    Schema  [ WKSP_UTM123456        ▼ ] ⑦

[ Type to filter... ]  [ + ∨ ]    ⊞ **CUSTOMERS**

Columns  **Data**  Indexes  Constraints  Grants  Statistics  Triggers  Dependencies  DDL  Sample Queries

∨ ⊞ Tables
  CUSTOMERS               + Insert Row   ⫼ Columns...  ▽ Filter...  ⊟ Count Rows  ⬆ Load Data  ⬇ Download  ↻ Refresh
  CUSTOMERS_ADDRESSES
  INVENTORY_LIST
  ITEMS
  ORDERED_ITEMS
  ORDERS
  PRICE_HISTORY
  SALES_REPRESENTATIVES
  SALES_REP_ADDRESSES
  TEAMS
⊞ Views
↓ᴬᶻ Indexes
≡ Sequences
⬡ Types
⬚ Packages
⬛ Procedures
ƒₓ Functions

| | CTR_NUMBER | EMAIL | FIRST_NAME | LAST_NAME | PHONE_NUMBER | CURRENT_BALANCE | SRE_ID | TEM_ID | LOYALTY_CARD_NU |
|---|---|---|---|---|---|---|---|---|---|
| ✎ | c00001 | bob.thornberry... | Robert | Thornberry | 01234567898 | 150 | sr01 | t001 | |
| ✎ | c00012 | Jjones@freemai... | Jennifer | Jones | 01505214598 | 0 | | | lc1015 |
| ✎ | c00101 | unknown@here.... | John | Doe | 03216547808 | 987.5 | sr01 | t002 | |
| ✎ | c00103 | MurciaA@global... | Andrew | Murcia | 07715246890 | 85 | | | lc2341 |
| ✎ | c01986 | margal87@delp... | Maria | Galant | 01442736589 | 125.65 | sr03 | t003 | |
| ✎ | c02001 | brianrog@hoote... | Brian | Rogers | 01654564898 | 50 | | | lc4587 |

1 cells selected                                                                                    1 - 6