5-2 Milestone Four: Enhancement 3: Databases

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# Introduction

This is the sequence I used to recreate my database for Enhancement 3. For this enhancement, I will be using Oracle Live SQL and performing CRUD functionality. This will demonstrate my ability to create, read, update, and delete various functions within a SQL database. To begin, navigate to livesql.oracle.com, then sign in, and navigate to SQL Worksheet. From there, follow the code as I detail below to recreate Enhancement 3. The code can be seen and run via this link: <https://livesql.oracle.com/apex/livesql/s/nabhihcthg8fsipn71mhwytgv>

# Step One

Start by creating the three tables as per the original artifact using the SQL data below:

CREATE TABLE PERSON (

"PERSON\_ID" NUMBER(25) NOT NULL PRIMARY KEY,

"FIRST\_NAME" VARCHAR(25) NOT NULL,

"LAST\_NAME" VARCHAR(25) NOT NULL

);

CREATE TABLE CONTACT\_LIST (

"CONNECTION\_ID" NUMBER (15) NOT NULL PRIMARY KEY,

"PERSON\_ID" NUMBER(8) NOT NULL,

"CONTACT\_ID" NUMBER (8) NOT NULL,

"FAVORITE" VARCHAR(10) NULL

);

CREATE TABLE MESSAGES (

"SENDER\_FIRST\_NAME" VARCHAR(25) NOT NULL,

"SENDER\_LAST\_NAME" VARCHAR(25) NOT NULL,

"RECEIVER\_FIRST\_NAME" VARCHAR(25)NOT NULL,

"RECEIVER\_LAST\_NAME" VARCHAR(25) NOT NULL,

"MESSAGE\_ID" NUMBER(8) NOT NULL PRIMARY KEY,

"MESSAGE" CHAR(500) NOT NULL,

"MESSAGE\_TIMESTAMP" CHAR(50) NOT NULL

);

Graphical user interface, text, application

Description automatically generated

# Step Two

Add the original data to each table per the “INSERT INTO…” statements below. This will add data to each of the three tables I created originally:

INSERT INTO PERSON VALUES (1, 'MICHAEL', 'PHELPS');

INSERT INTO PERSON VALUES (2, 'KATIE', 'LEDECKY');

INSERT INTO PERSON VALUES (3, 'USAIN', 'BOLT');

INSERT INTO PERSON VALUES (4, 'ALLYSON', 'FELIX');

INSERT INTO PERSON VALUES (5, 'KEVIN', 'DURANT');

INSERT INTO PERSON VALUES (6, 'DIANA', 'TAURASI');

INSERT INTO CONTACT\_LIST VALUES (1, 1, 2, '');

INSERT INTO CONTACT\_LIST VALUES (2, 1, 3, '');

INSERT INTO CONTACT\_LIST VALUES (3, 1, 4, '');

INSERT INTO CONTACT\_LIST VALUES (4, 1, 5, '');

INSERT INTO CONTACT\_LIST VALUES (5, 1, 6, '');

INSERT INTO CONTACT\_LIST VALUES (6, 2, 1, '');

INSERT INTO CONTACT\_LIST VALUES (7, 2, 3, '');

INSERT INTO CONTACT\_LIST VALUES (8, 2, 4, '');

INSERT INTO CONTACT\_LIST VALUES (9, 3, 1, '');

INSERT INTO CONTACT\_LIST VALUES (10, 3, 4, '');

INSERT INTO CONTACT\_LIST VALUES (11, 4, 5, '');

INSERT INTO CONTACT\_LIST VALUES (12, 4, 6, '');

INSERT INTO CONTACT\_LIST VALUES (13, 5, 1, '');

INSERT INTO CONTACT\_LIST VALUES (14, 5, 6, '');

INSERT INTO MESSAGES VALUES ('MICHAEL', 'PHELPS', 'KATIE', 'LEDECKY', 1, 'CONGRATS ON WINNING THE 800M FREESTYLE!', '2016-12-25 09:00:00');

INSERT INTO MESSAGES VALUES ('KATIE', 'LEDECKY', 'MICHAEL', 'PHELPS', 2, 'CONGRATS ON WINNING 23 GOLD MEDALS', '2016-12-25 09:01:00');

INSERT INTO MESSAGES VALUES ('USAIN', 'BOLT', 'MICHAEL', 'PHELPS', 3, 'YOU ARE THE GREATEST SWIMMER EVER', '2016-12-25 09:02:00');

INSERT INTO MESSAGES VALUES ('MICHAEL', 'PHELPS', 'USAIN', 'BOLT', 4, 'THANKS! YOU ARE THE GREATEST SPRINTER EVER', '2016-12-25 09:04:00');

INSERT INTO MESSAGES VALUES ('MICHAEL', 'PHELPS', 'ALLYSON', 'FELIX', 5, 'GOOD LUCK ON YOUR RACE', '2016-12-25 09:05:00');

# Step Three

To satisfy the read portion of CRUD, verify that all three tables are created and have been populated with the correct information by running the following commands:

SELECT \* FROM PERSON;

SELECT \* FROM CONTACT\_LIST;

SELECT \* FROM MESSAGES;

Table

Description automatically generated

# Step Four

I will now begin to expand upon the original artifact while performing the update function of CRUD.

INSERT INTO PERSON VALUES (7, 'Simone', 'Biles');

INSERT INTO PERSON VALUES (8, 'Nyjah', 'Huston');

INSERT INTO PERSON VALUES (9, 'Naomi', 'Osaka');

INSERT INTO PERSON VALUES (10, 'Alex', 'Morgan');

SELECT \* FROM PERSON;

Graphical user interface, text, application

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# Step Five

Now that I have expanded the list of athletes, I want to add a new column for each individual sex, and the event(s) they compete in. Add the following code into livesql to update the table:

ALTER TABLE PERSON ADD "SEX" VARCHAR(6);

ALTER TABLE PERSON ADD "EVENT" VARCHAR(25);

UPDATE PERSON SET SEX = 'MALE' WHERE PERSON\_ID = '1';

UPDATE PERSON SET SEX = 'FEMALE' WHERE PERSON\_ID = '2';

UPDATE PERSON SET SEX = 'MALE' WHERE PERSON\_ID = '3';

UPDATE PERSON SET SEX = 'FEMALE' WHERE PERSON\_ID = '4';

UPDATE PERSON SET SEX = 'MALE' WHERE PERSON\_ID = '5';

UPDATE PERSON SET SEX = 'FEMALE' WHERE PERSON\_ID = '6';

UPDATE PERSON SET SEX = 'FEMALE' WHERE PERSON\_ID = '7';

UPDATE PERSON SET SEX = 'MALE' WHERE PERSON\_ID = '8';

UPDATE PERSON SET SEX = 'FEMALE' WHERE PERSON\_ID = '9';

UPDATE PERSON SET SEX = 'FEMALE' WHERE PERSON\_ID = '10';

UPDATE PERSON SET EVENT = 'SWIMMING' WHERE PERSON\_ID = '1';

UPDATE PERSON SET EVENT = 'SWIMMING' WHERE PERSON\_ID = '2';

UPDATE PERSON SET EVENT = 'TRACK AND FIELD' WHERE PERSON\_ID = '3';

UPDATE PERSON SET EVENT = 'TRACK AND FIELD' WHERE PERSON\_ID = '4';

UPDATE PERSON SET EVENT = 'BASKETBALL' WHERE PERSON\_ID = '5';

UPDATE PERSON SET EVENT = 'BASKETBALL' WHERE PERSON\_ID = '6';

UPDATE PERSON SET EVENT = 'GYMNASTICS' WHERE PERSON\_ID = '7';

UPDATE PERSON SET EVENT = 'SKATEBOARDING' WHERE PERSON\_ID = '8';

UPDATE PERSON SET EVENT = 'TENNIS' WHERE PERSON\_ID = '9';

UPDATE PERSON SET EVENT = 'SOCCER' WHERE PERSON\_ID = '10';

SELECT \* FROM PERSON;

Graphical user interface, text, application

Description automatically generated

# Step Five

Once all the updates have been made, I will delete the four entries I added to bring the table back to its original athletes, and thus satisfying the Delete functionality in CRUD.

DELETE FROM PERSON WHERE PERSON\_ID = '7';

DELETE FROM PERSON WHERE PERSON\_ID = '8';

DELETE FROM PERSON WHERE PERSON\_ID = '9';

DELETE FROM PERSON WHERE PERSON\_ID = '10';

SELECT \* FROM PERSON;

Graphical user interface, text

Description automatically generated

# Step Six

Now that the PERSON table is complete and all CRUD functionality is complete, we will move to the CONTACT\_LIST table. As previously completed, the C and R functions were already completed. We will begin by performing the U in CRUD and update the table with more columns and rows and then verify the changes have been made.

UPDATE CONTACT\_LIST SET FAVORITE = 'YES' WHERE CONTACT\_ID = 1;

UPDATE CONTACT\_LIST SET FAVORITE = 'NO' WHERE CONTACT\_ID <> 1;

INSERT INTO CONTACT\_LIST VALUES (15, 7, 2, 'YES');

INSERT INTO CONTACT\_LIST VALUES (16, 8, 4, 'YES');

INSERT INTO CONTACT\_LIST VALUES (17, 9, 1, 'YES');

SELECT \* FROM CONTACT\_LIST ORDER BY CONNECTION\_ID;

Table

Description automatically generated with medium confidence

# Step Seven

To show a more complex form of altering the table, rather than removing a contact based on the primary key “CONNECTION\_ID,” I will remove multiple rows using the “FAVORITE” column to remove all contacts that do not have a “YES” in the FAVORITE column. This will remove all but six of the initial rows.

DELETE (SELECT \* FROM CONTACT\_LIST)

WHERE FAVORITE = 'NO';

SELECT \* FROM CONTACT\_LIST ORDER BY CONNECTION\_ID;

Graphical user interface, table

Description automatically generated with medium confidence

# Step Eight

Moving to the final table “MESSAGES” I wanted to rearrange the table to put “MESSAGE\_ID” first so that the data looks more like a text message. I will also add five additional messages to expand upon the original list. Once that is complete, I will delete all the messages with the most recent date.

DROP TABLE MESSAGES;

CREATE TABLE MESSAGES (

"MESSAGE\_ID" NUMBER(8) NOT NULL PRIMARY KEY,

"SENDER\_NAME" VARCHAR(25) NOT NULL,

"RECEIVER\_NAME" VARCHAR(25)NOT NULL,

"MESSAGE" CHAR(500) NOT NULL,

"MESSAGE\_TIMESTAMP" CHAR(50) NOT NULL

);

INSERT INTO MESSAGES VALUES (1, 'MICHAEL PHELPS', 'KATIE LEDECKY', 'CONGRATS ON WINNING THE 800M FREESTYLE!', '2016-12-25 09:00:00');

INSERT INTO MESSAGES VALUES (2, 'KATIE LEDECKY', 'MICHAEL PHELPS', 'CONGRATS ON WINNING 23 GOLD MEDALS', '2016-12-25 09:01:00');

INSERT INTO MESSAGES VALUES (3, 'USAIN BOLT', 'MICHAEL PHELPS', 'YOU ARE THE GREATEST SWIMMER EVER', '2016-12-25 09:02:00');

INSERT INTO MESSAGES VALUES (4, 'MICHAEL PHELPS', 'USAIN BOLT', 'THANKS! YOU ARE THE GREATEST SPRINTER EVER', '2016-12-25 09:04:00');

INSERT INTO MESSAGES VALUES (5, 'KEVIN DURANT', 'ALLYSON FELIX', 'GOOD LUCK ON YOUR RACE', '2016-12-25 09:05:00');

INSERT INTO MESSAGES VALUES (6, 'ALLYSON FELIX', 'KEVIN DURANT', 'THANK YOU I AM SO NERVOUS', '2016-12-25 09:06:00');

INSERT INTO MESSAGES VALUES (7, 'DIANA TAURASI', 'SIMONE BILES', 'BRING HOME THE GOLD', '2016-12-26 09:05:00');

INSERT INTO MESSAGES VALUES (8, 'SIMONE BILES', 'DIANA TAURASI', 'ONLY IF YOU BRING HOME ONE FIRST', '2016-12-26 09:05:00');

INSERT INTO MESSAGES VALUES (9, 'NYJAH HUSTON', 'NAOMI OSAKA', 'SHE DIDNT STAND A CHANCE AGAINST YOU', '2016-12-26 09:05:00');

INSERT INTO MESSAGES VALUES (10, 'NAOMI OSAKA', 'NYJAH HUSTON', 'GOOD THING I DIDNT GET SERENA HAHA', '2016-12-26 09:05:00');

SELECT \* FROM MESSAGES;

Graphical user interface, text, application, email

Description automatically generated

DELETE MESSAGES WHERE MESSAGE\_TIMESTAMP > '2016-12-25 09:05;00';

SELECT \* FROM MESSAGES;

Graphical user interface, text, application, email

Description automatically generated