

## check foriegn key constraints

-- Step 1: Add Foreign Key constraints for club\_roster and student\_roster

-- Foreign key between club\_roster and student (club\_roster references student)

```
ALTER TABLE club_roster
ADD CONSTRAINT fk_club_roster_student FOREIGN KEY (STUDENT_ID_NUM)
REFERENCES student(STUDENT_ID)
ON DELETE CASCADE;
```

-- Foreign key between student\_roster and student

```
ALTER TABLE student_roster
ADD CONSTRAINT fk_student_roster_student FOREIGN KEY (ID_NUM)
REFERENCES student(STUDENT_ID)
ON DELETE CASCADE;
```

-- Step 2: Add Check constraint to phone\_purpose for valid phone types

```
ALTER TABLE phone_purpose
ADD CONSTRAINT chk_phone_type CHECK (PHONE_TYPE IN ('cell', 'home', 'work'));
```

-- Step 3: Test the inserts and deletes

-- Inserting valid data in student\_roster, club\_roster, and student

```
INSERT INTO student (STUDENT_ID, NAME, DOB) VALUES (4, 'Alice', TO_DATE('05-SEP-99', 'DD-MON-YY'));
INSERT INTO student_roster (ID_NUM, STUDENT_NAME, DATEOFBIRTH) VALUES (4, 'Alice', TO_DATE('05-SEP-99', 'DD-MO
INSERT INTO club_roster (DATE_JOINED, STUDENT_ID_NUM, NAME_OF_CLUB) VALUES (SYSDATE, 4, 'chess');
```

-- Inserting invalid data that violates foreign key

```
INSERT INTO club_roster (DATE_JOINED, STUDENT_ID_NUM, NAME_OF_CLUB) VALUES (SYSDATE, 999, 'climbing'); -- This
```

-- Test deleting a student and see if it cascades to student\_roster and club\_roster

```
DELETE FROM student WHERE STUDENT_ID = 4;
```

-- Check if the records in club\_roster and student\_roster are also deleted

```
SELECT * FROM student_roster;
SELECT * FROM club_roster;
```

## Outputs of constraint checking

table CLUB\_ROSTER altered.

table STUDENT\_ROSTER altered.

ID_NUM	STUDENT_NAME	STUDENT_ALIAS_NAME	DATEOFBIRTH
1	John		07-SEP-00
2	Jane		09-FEB-95
3	Mary		01-JAN-02

no rows selected

table PHONE\_PURPOSE altered.

1 rows inserted.

1 rows inserted.

1 rows inserted.

Error starting at line : 31 in command -

```
INSERT INTO club_roster (DATE_JOINED, STUDENT_ID_NUM, NAME_OF_CLUB) VALUES (SYSDATE, 999, 'climbing')
```

Error report -

SQL Error: ORA-02291: integrity constraint (STUDENT.FK\_STUDENT) violated - parent key not found

02291. 00000 - "integrity constraint (%s.%s) violated - parent key not found"

\*Cause: A foreign key value has no matching primary key value.

\*Action: Delete the foreign key or add a matching primary key.

1 rows deleted.

ID_NUM	STUDENT_NAME	STUDENT_ALIAS_NAME	DATEOFBIRTH
1	John		07-SEP-00
2	Jane		09-FEB-95
3	Mary		01-JAN-02

no rows selected