

Problem Statement: *Electric Scooter Charging Station Monitoring*

We have a task to building a PL/SQL procedure for **Electric Scooter Company** to monitor the status of multiple electric scooter charging stations. Each station has a unique ID, location, and a status indicating whether it's **Active**, **Inactive**, or **Faulty**. The system should:

- Use a **collection** to store multiple charging station records.
- Use a **record** to define the structure of each station.
- Use a **GOTO statement** to skip faulty stations during processing.

Concepts Demonstrated

- **PL/SQL Collections:** Using TABLE OF to store multiple station records.
- **PL/SQL Records:** Defining a custom record type for station details.
- **GOTO Statements:** Skipping faulty stations during iteration.

PL/SQL Code

DECLARE

-- Define a record type for a charging station

TYPE station_rec IS RECORD (

station_id NUMBER,

location VARCHAR2(50),

status VARCHAR2(10) -- 'Active', 'Inactive', 'Faulty'

);

-- Define a collection type of charging stations

TYPE station_table IS TABLE OF station_rec INDEX BY BINARY_INTEGER;

-- Declare the collection

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stations station_table;

-- Loop counter
i INTEGER := 1;

BEGIN

-- Populate the collection with sample data

stations(1) := station_rec(101, 'Kigali - Gasabo', 'Active');

stations(2) := station_rec(102, 'Kigali - Kicukiro', 'Faulty');

stations(3) := station_rec(103, 'Musanze', 'Inactive');

stations(4) := station_rec(104, 'Huye', 'Active');

-- Process each station

WHILE i <= stations.COUNT LOOP

    IF stations(i).status = 'Faulty' THEN

        GOTO skip_station;

    END IF;

    DBMS_OUTPUT.PUT_LINE('Processing Station ' || stations(i).station_id ||

        ' at ' || stations(i).location ||

        ' - Status: ' || stations(i).status);

    <<skip_station>>

    i := i + 1;

END LOOP;

END;

```

Expected Output

Processing Station 101 at Kigali - Gasabo - Status: Active

Processing Station 103 at Musanze - Status: Inactive

Processing Station 104 at Huye - Status: Active