

## **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
```

```

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