

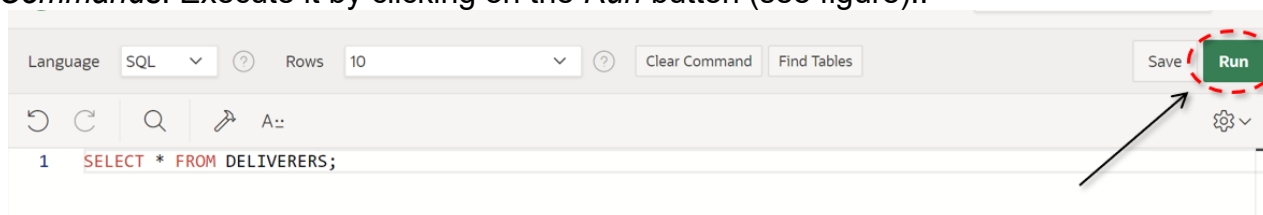
# Laboratory

## Write and execute SQL queries

### Goal

The objective of this practice is to write some SQL queries and execute them on an Oracle.

To write the SQL query on Oracle Apex, go to *SQLWorkshop* and then *SQL Commands*. Execute it by clicking on the *Run* button (see figure)..



## 1 Description of the *Delivery* database

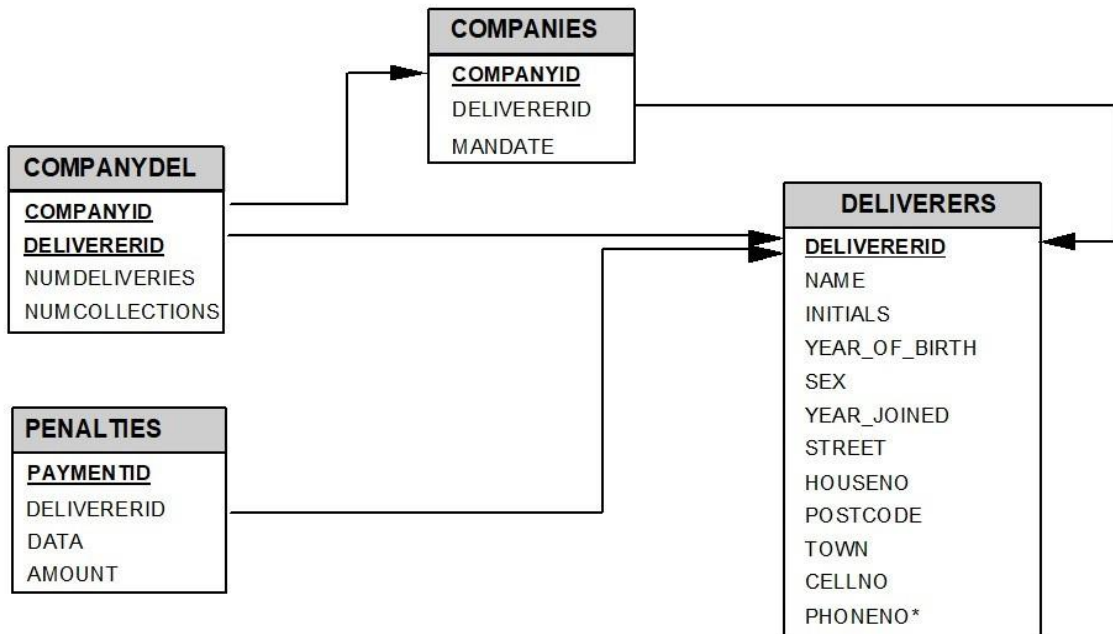
The *Delivery* database gathers information about the activities of a firm delivering and collecting goods for various customer companies.

The DELIVERERS table contains the personal data for the deliverers working at the firm. For each deliverer, the following information is available: identification code (DELIVERERID), last name, first name initials, year of birth, sex, year when she/he began working for the firm, street, house number, city, residence postal code, cellular phone number, and office phone number.

The COMPANYDEL table reports the total number of deliveries (NUMDELIVERIES) and collections (NUMCOLLECTIONS) made by each deliverer for each customer company. Note that the table only reports the deliverer-company pairs such that the deliverer performed at least one delivery or collection for the company.

The PENALTIES table reports the fines received by each deliverer. For each fine, the fine code (PENALTYID), the deliverer code, the fine date, and amount to be paid are stored.

The COMPANIES table reports, for each customer company, the company identification code (COMPANYID) and the identification code of the deliverer who is the company's current reference person. In addition, it reports the number of times (MANDATE) the deliverer held this position.



### 3 SQL Queries (Select: join, group by, having, in, not in)

1. Find the identification code, name and the first name initials (attribute INITIALS) of all the deliverers which never received a fine.

DELIVERERID	NAME	INITIALS
57	Brown	M
7	Wise	GWS
2	Everett	R
112	Bailey	IP
28	Collins	C
83	Hope	PK
95	Miller	P
39	Bishop	D
100	Parmenter	P

```

SELECT DELIVERERID, NAME, INITIALS
FROM DELIVERERS
WHERE DELIVERERID NOT IN
      (SELECT DELIVERERID
       FROM PENALTIES);
  
```

2. Find the identification code of all the deliverers which received at least one fine of 25€ and at least one of 30€.

DELIVERERID
44

```
SELECT DISTINCT DELIVERERID
FROM PENALTIES
WHERE AMOUNT = 25
AND DELIVERERID IN
  (SELECT DELIVERERID
   FROM PENALTIES
   WHERE AMOUNT = 30);
```

Alternative solution

```
SELECT DELIVERERID
FROM DELIVERERS
WHERE DELIVERERID IN
  (SELECT DELIVERERID
   FROM PENALTIES
   WHERE AMOUNT = 25)
AND DELIVERERID IN
  (SELECT DELIVERERID
   FROM PENALTIES
   WHERE AMOUNT = 30);
```

3. Find the identification code of the deliverers who have visited all companies listed in the table COMPANIES (note: the deliverers who have “visited” a company are those who have made at least one delivery or pickup at the respective company).

DELIVERERID
8

```
SELECT DELIVERERID
FROM COMPANYYDEL
GROUP BY DELIVERERID
HAVING COUNT (*) = (SELECT COUNT (*)
                   FROM COMPANIES);
```

4. Find the identification code of the deliverers who have made deliveries (or pickups) to at least one company where deliverer 57 has made deliveries (or pickups).

DELIVERERID
6
44
2
8
83

```
SELECT DISTINCT DELIVERERID
FROM COMPANYDEL
WHERE DELIVERERID <> 57
AND COMPANYID IN
    (SELECT COMPANYID
     FROM COMPANYDEL
     WHERE DELIVERERID = 57);
```

5. For each deliverer that has received at least two fines, find the identification code (of the deliverer), the date of the first fine and the date of the last fine.

```
SELECT DELIVERERID, MIN(DATA), MAX(DATA)
FROM PENALTIES
GROUP BY DELIVERERID
HAVING COUNT(*) >= 2;
```