Assignment-4

1. Download dataset from https://www.kaggle.com/datasets/krishujeniya/salary-prediction-of-data-professions?resource=download
2. Ingest the dataset from your local machine storage into postgresQL database
   Hint: use **copy command** in sql editor which will copy your csv file to postgres DB
   For ingesting csv you might also need to create table according to the column structure of your CSV file ahead of executing copy command

3. Once the table is populated please complete following queries:

```
create table Profession (
id serial primary key,
firstName varchar(50),
lastName varchar(50),
sex varchar(50),
doj date,
currentDate date,
designation varchar(50),
age int,
salary int,
unit varchar(50),
leavesUsed int,
leavesRemaining int,
ratings int,
pastExp int

);
```

```
copy Profession(firstName,lastName,sex,doj,currentDate,designation,age,salary,unit,leavesUsed,leavesRemaining,ratings,pastExp)
from 'D:\Web\Leapfrog\Fellowship\Database\Assignment-4\Salary Prediction of Data Professions.csv' DELIMITER ',' CSV header;
select * from Profession ;
```

| | id | firstname | lastname | sex | doj | currentdate | designation | age | salary | unit | leavesused | leavesremaining |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1 | TOMASA | ARMEN | F | 2014-05-18 | 2016-01-07 | Analyst | 21 | 44,570 | Finance | 24 | |
| 2 | 2 | ANNIE | [NULL] | F | [NULL] | 2016-01-07 | Associate | [NULL] | 89,207 | Web | [NULL] | |
| 3 | 4 | CHERRY | AQUILAR | F | 2013-04-03 | 2016-01-07 | Analyst | 22 | 45,550 | IT | 22 | |
| 4 | 5 | LEON | ABOULAHOUD | M | 2014-11-20 | 2016-01-07 | Analyst | [NULL] | 43,161 | Operations | 27 | |
| 5 | 6 | VICTORIA | [NULL] | F | 2013-02-19 | 2016-01-07 | Analyst | 22 | 48,736 | Marketing | 20 | |
| 6 | 7 | ELLIOT | AGULAR | M | 2013-09-02 | 2016-01-07 | Analyst | 22 | 40,339 | Marketing | 19 | |
| 7 | 8 | JACQUES | AKMAL | M | 2013-12-05 | 2016-01-07 | Analyst | [NULL] | 40,058 | Marketing | 29 | |
| 8 | 9 | KATHY | ALSOP | F | 2014-06-29 | 2016-01-07 | Senior Analyst | 28 | 63,478 | Operations | 20 | |
| 9 | 10 | LILIAN | APELA | F | 2014-11-11 | 2016-01-07 | Analyst | 22 | 43,110 | Finance | 15 | |
| 10 | 11 | BELLE | ARDS | F | 2014-03-10 | 2016-01-07 | Analyst | 24 | 41,590 | Marketing | 22 | |
| 11 | 12 | VIRGIL | ACKIES | M | 2010-02-01 | 2016-01-07 | Senior Manager | 36 | 160,613 | Finance | [NULL] | |
| 12 | 13 | WELDON | AIVAO | M | 2013-08-01 | 2016-01-07 | Analyst | 24 | 44,828 | Finance | 15 | |
| 13 | 14 | BOYD | AFTON | M | 2013-03-22 | 2016-01-07 | Analyst | 21 | 45,830 | Web | 23 | |
| 14 | 15 | BART | AGUILLERA | M | 2013-07-27 | 2016-01-07 | Analyst | 24 | 43,457 | Management | 30 | |

## Common Table Expressions (CTEs):

**Question 1:** Calculate the average salary by department for all Analysts.

```
with
avg_sal as (
select p.unit ,round(avg(p.salary))  from Profession p
 where  p.designation='Analyst' group by unit
)
select * from avg_sal;
```

| | unit | round |
|---|---|---|
| 1 | Operations | 45,187 |
| 2 | Finance | 44,978 |
| 3 | Web | 45,200 |
| 4 | Management | 44,975 |
| 5 | IT | 44,798 |
| 6 | Marketing | 45,054 |

**Question 2:** List all employees who have used more than 10 leaves.

```
with
leaves as(
select firstname,leavesUsed from profession where leavesUsed >10
)
select * from leaves;
```

| | firstname | leavesused |
|---|---|---|
| 1 | TOMASA | 24 |
| 2 | CHERRY | 22 |
| 3 | LEON | 27 |
| 4 | VICTORIA | 20 |
| 5 | ELLIOT | 19 |
| 6 | JACQUES | 29 |
| 7 | KATHY | 20 |
| 8 | LILIAN | 15 |

## Views:

**Question 3:** Create a view to show the details of all Senior Analysts.

```
create view seniorAnalyst as
select * from profession where profession.designation='Senior Analyst';
select * from seniorAnalyst
```

| | id | firstname | lastname | sex | doj | currentdate | designation | age | salary | unit | leavesused |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 9 | KATHY | ALSOP | F | 2014-06-29 | 2016-01-07 | Senior Analyst | 28 | 63,478 | Operations | 20 |
| 2 | 29 | SEYMOUR | ALBEN | M | 2014-12-21 | 2016-01-07 | Senior Analyst | 25 | 57,488 | Operations | 25 |
| 3 | 33 | FOSTER | ALDERMAN | M | 2014-05-22 | 2016-01-07 | Senior Analyst | 26 | 68,295 | Operations | 28 |
| 4 | 54 | CARI | ARENALES | F | 2014-04-10 | 2016-01-07 | Senior Analyst | 28 | 66,338 | Web | 24 |
| 5 | 58 | PAULINE | ALTSHULER | F | 2014-12-13 | 2016-01-07 | Senior Analyst | 28 | 61,647 | Finance | 28 |
| 6 | 69 | RILEY | AIKINS | M | 2013-06-16 | 2016-01-07 | Senior Analyst | 25 | 60,712 | Finance | 26 |
| 7 | 73 | MARYJANE | ARES | F | 2012-08-24 | 2016-01-07 | Senior Analyst | 25 | 65,212 | Management | 29 |
| 8 | 76 | MARY | ALMESTICA | F | 2013-10-12 | 2016-01-07 | Senior Analyst | 27 | 53,339 | Finance | 26 |
| 9 | 83 | WILMER | AKIONA | M | 2014-05-30 | 2016-01-07 | Senior Analyst | 25 | 50,739 | IT | 25 |

## Materialized Views:

**Question 4:** Create a materialized view to store the count of employees by department.

```
create materialized view  countEmployees as
select unit,count(unit) from profession group by unit;
select * from countEmployees;
```

| | unit | count |
|---|---|---|
| 1 | Operations | 438 |
| 2 | Finance | 446 |
| 3 | Web | 431 |
| 4 | Management | 425 |
| 5 | IT | 461 |
| 6 | Marketing | 438 |

## Procedures (Stored Procedures):

**Question 6:** Create a procedure to update an employee's salary by their first name and last name

```
select firstname,lastname,salary from profession order by id
```

| | | | |
|---|---|---|---|
| 1 | TOMASA | ARMEN | 44,570 |
| 2 | ANNIE | [NULL] | 89,207 |
| 3 | OLIVE | ANCY | 50,955 |

```
create or replace procedure updateSalary(
   first varchar(50),
   last varchar(50),
   amount int
)
language plpgsql
as $$
begin
update profession
set salary=salary+amount where firstname=first and lastname=last ;
commit;
    end;
$$;
call updateSalary('OLIVE','ANCY',10000);
```

| | firstname | lastname | salary |
|---|---|---|---|
| 1 | TOMASA | ARMEN | 44,570 |
| 2 | ANNIE | [NULL] | 89,207 |
| 3 | OLIVE | ANCY | 60,955 |

**Question 7:** Create a procedure to calculate the total number of leaves used across all departments.

```
create or replace procedure calcLeavesUsed()
language plpgsql
as $$
DECLARE
    total_leaves INTEGER;
begin
    create temporary table leavesTable as
    (select  SUM(leavesused) from profession
);
    end;$$;

call calcLeavesUsed();
select * from leavesTable;
```

| | sum |
|---|---|
| 1 | 59,314 |