jupyter Tarea M41-CD – Isaac Heredia Diaz Last Checkpoint: hace unos segundos (autosaved)

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In [5]:
```
# importamos SQLITE3
# Creamos la coneccion a la BD

import sqlite3
conn = sqlite3.connect('RH.db')
```

In [13]:
```
# creamos el cursor

cur = conn.cursor()
```

In [8]:
```
# Lectura del archivo CSV

import os
import csv

os.chdir('C:/Users/Isaac/Desktop/IHD/EBAC DT/CIENCIA DE DATOS/M41 DS')
with open('recursos_humanos.csv') as f:
    reader = csv.reader(f)
    data = list(reader)
```

In [11]:
```
data
```

Out[11]:
```
[['satisfaction_level',
  'last_evaluation',
  'number_project',
  'average_montly_hours',
  'time_spend_company',
  'Work_accident',
  'left',
  'promotion_last_5years',
  'sales',
  'salary'],
 ['0.38', '0.53', '2', '157', '3', '0', '1', '0', 'sales', 'low'],
 ['0.8', '0.86', '5', '262', '6', '0', '1', '0', 'sales', 'medium'],
 ['0.11', '0.88', '7', '272', '4', '0', '1', '0', 'sales', 'medium'],
 ['0.72', '0.87', '5', '223', '5', '0', '1', '0', 'sales', 'low'],
 ['0.37', '0.52', '2', '159', '3', '0', '1', '0', 'sales', 'low'],
```

In [12]:
```
len(data)
```

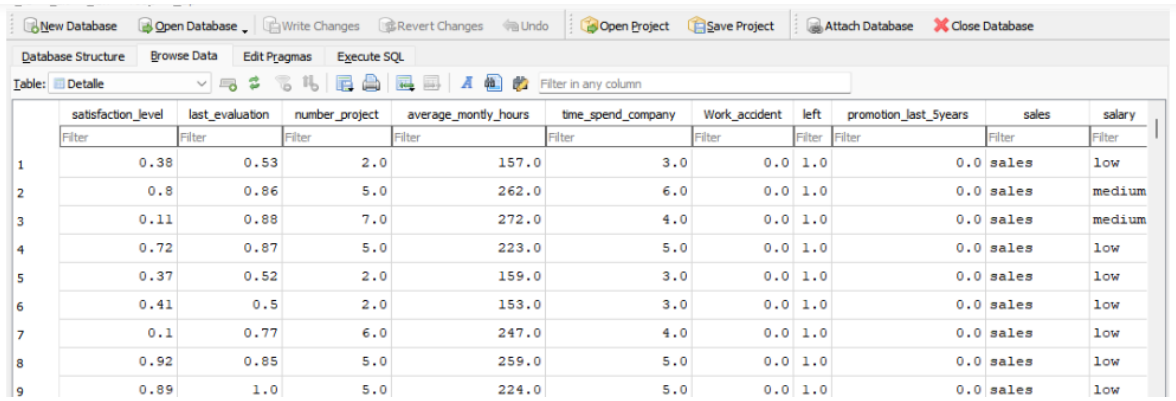
Out[12]:
```
15000
```

In [14]:
```
# creación de la tabla Detalle

cur.execute("""
    CREATE TABLE Detalle(
    satisfaction_level REAL,
    last_evaluation REAL,
    number_project REAL,
    average_montly_hours REAL,
    time_spend_company REAL,
    Work_accident REAL,
    left REAL,
    promotion_last_5years REAL,
    sales TEXT,
    salary TEXT);
""")
```

Out[14]:
```
<sqlite3.Cursor at 0x240716387c0>
```

In [15]:
```
# Insertamos registros

for renglon in range(1, len(data)):
    cur.execute("""
        INSERT INTO Detalle('satisfaction_level','last_evaluation','number_project','average_montly_hours',
        'time_spend_company','Work_accident','left','promotion_last_5years','sales','salary')
        VALUES(?,?,?,?,?,?,?,?,?,?)
    """, data[renglon])
```

In [16]:
```
conn.commit()
```



	satisfaction_level	last_evaluation	number_project	average_montly_hours	time_spend_company	Work_accident	left	promotion_last_5years	sales	salary
	Filter	Filter	Filter	Filter	Filter	Filter	Filter	Filter	Filter	Filter
1	0.38	0.53	2.0	157.0	3.0	0.0	1.0	0.0	sales	low
2	0.8	0.86	5.0	262.0	6.0	0.0	1.0	0.0	sales	medium
3	0.11	0.88	7.0	272.0	4.0	0.0	1.0	0.0	sales	medium
4	0.72	0.87	5.0	223.0	5.0	0.0	1.0	0.0	sales	low
5	0.37	0.52	2.0	159.0	3.0	0.0	1.0	0.0	sales	low
6	0.41	0.5	2.0	153.0	3.0	0.0	1.0	0.0	sales	low
7	0.1	0.77	6.0	247.0	4.0	0.0	1.0	0.0	sales	low
8	0.92	0.85	5.0	259.0	5.0	0.0	1.0	0.0	sales	low
9	0.89	1.0	5.0	224.0	5.0	0.0	1.0	0.0	sales	low

- Obtenga el nivel de satisfacción promedio (asociado a la columna “satisfaction_level”) de todos los empleados de la empresa.

In [17]:
```
cur.execute("""
    SELECT AVG(satisfaction_level)
    FROM Detalle
""")
res = cur.fetchall()
res
```

Out[17]:
```
[(0.6128335222348166,)]
```

- Determine quien tiene el nivel de satisfacción promedio más alto entre aquellos empleados que abandonan la empresa (con valor 1 en la columna "left") y los que deciden quedarse (con valor de 0 en la columna "left").

In [24]:
```
cur.execute("""
    SELECT left, AVG(satisfaction_level) AS AVG_Satisfaction
    FROM Detalle
    GROUP BY left
""")
res = cur.fetchall()
res
```

Out[24]:
```
[(0.0, 0.666809590479516), (1.0, 0.4400980117614091 7)]
```

- Determine el número promedio de horas de trabajo (asociado a la columna "average_monthly_hours") para todos aquellos empleados que tienen un nivel de salario bajo ("low" en columna "") o que tienen un nivel de salario medio ("medium").

In [39]:
```
cur.execute("""
    SELECT ROUND(AVG(average_montly_hours),2)
    FROM Detalle
    WHERE salary = 'low' OR salary = 'medium'
""")
res = cur.fetchall()
res
```

Out[39]:
```
[(201.16,)]
```

- Extraiga aquellos registros de empleados que obtuvieron una promoción en los últimos 5 años (esto es, renglones con un valor de "1" en la columna "promotion_last_5years") y que además abandonaron la empresa.

In [36]:
```
cur.execute("""
    SELECT *
    FROM Detalle
    WHERE promotion_last_5years = '1' AND left = '1'
""")
res = cur.fetchall()
res
```

Out[36]:
```
[(0.45, 0.51, 2.0, 160.0, 3.0, 1.0, 1.0, 1.0, 'sales', 'low'),
 (0.79, 0.59, 4.0, 139.0, 3.0, 0.0, 1.0, 1.0, 'management', 'low'),
 (0.41, 0.46, 2.0, 160.0, 3.0, 0.0, 1.0, 1.0, 'sales', 'low'),
 (0.11, 0.79, 6.0, 292.0, 4.0, 0.0, 1.0, 1.0, 'technical', 'low'),
 (0.41, 0.56, 2.0, 154.0, 3.0, 0.0, 1.0, 1.0, 'support', 'medium'),
 (0.46, 0.45, 2.0, 138.0, 3.0, 0.0, 1.0, 1.0, 'IT', 'low'),
 (0.87, 1.0, 4.0, 258.0, 5.0, 1.0, 1.0, 1.0, 'sales', 'medium'),
 (0.44, 0.55, 2.0, 128.0, 3.0, 0.0, 1.0, 1.0, 'IT', 'medium'),
 (0.45, 0.51, 2.0, 160.0, 3.0, 1.0, 1.0, 1.0, 'sales', 'low'),
```

- Extraiga aquellos registros de empleados que obtuvieron una calificación de 0.9 o más en su última evaluación (columna "last_evaluation").

In [35]:
```
cur.execute("""
    SELECT *
    FROM Detalle
    WHERE last_evaluation >= 0.9
""")
res = cur.fetchall()
res
```

Out[35]:
```
[(0.89, 1.0, 5.0, 224.0, 5.0, 0.0, 1.0, 0.0, 'sales', 'low'),
 (0.84, 0.92, 4.0, 234.0, 5.0, 0.0, 1.0, 0.0, 'sales', 'low'),
 (0.78, 0.99, 4.0, 255.0, 6.0, 0.0, 1.0, 0.0, 'sales', 'low'),
 (0.09, 0.95, 6.0, 304.0, 4.0, 0.0, 1.0, 0.0, 'sales', 'low'),
 (0.89, 0.92, 5.0, 242.0, 5.0, 0.0, 1.0, 0.0, 'sales', 'low'),
 (0.1, 0.94, 6.0, 255.0, 4.0, 0.0, 1.0, 0.0, 'technical', 'low'),
 (0.1, 0.92, 7.0, 307.0, 4.0, 0.0, 1.0, 0.0, 'support', 'low'),
 (0.11, 0.94, 7.0, 255.0, 4.0, 0.0, 1.0, 0.0, 'support', 'low'),
 (0.85, 1.0, 4.0, 225.0, 5.0, 0.0, 1.0, 0.0, 'technical', 'low'),
 (0.85, 0.91, 5.0, 226.0, 5.0, 0.0, 1.0, 0.0, 'management', 'medium'),
 (0.11, 0.93, 7.0, 308.0, 4.0, 0.0, 1.0, 0.0, 'IT', 'medium'),
```