CSIS 2300: Lab 2

May 30, 2024

Lab Practice

Task 1: Create the following tables and insert the values -

0.1 Job Table:

job_id	job_title	min_salary	max_salary
AD_PRES	President	20000	40000
AD_VP	Administration Vice President	15000	30000
AD_ASST	Administration Assistant	3000	6000
AC_MGR	Account Manager	8200	16000
AC_ACCOUNT	Public Accountant	4200	9000
SA_MAN	Sales Manager	10000	20000
SA_REP	Sales Representative	6000	12000
ST_MAN	Stock Manager	5500	8500
ST_CLERK	Stock Clerk	2000	5000
IT_PROG	Programmer	4000	10000
MK_MAN	Marketing Manager	9000	15000
MK_REP	Marketing Representative	4000	9000

Name	Type	Collation	Attributes	Null	Default
job_id	varchar(10)	utf8mb4_general_ci		No	*None*
job_title	varchar(35)	utf8mb4_general_ci		Yes	*NULL*
min_salary	int(6)			Yes	*NULL*
max_salary	int(6)			Yes	*NULL*

Figure 1: job structure

job_id	job_title	min_salary	max_salary
AC_ACCOUNT	Public Accountant	4200	9000
AC_MGR	Account Manager	8200	16000
AD_ASST	Administration Assistant	3000	6000
AD_PRES	President	20000	40000
AD_VP	Administration Vice President	15000	30000
IT_PROG	Programmer	4000	10000
MK_MAN	Marketing Manager	9000	15000
MK_REP	Marketing Representative	4000	9000
SA_MAN	Sales Manager	10000	20000
SA_REP	Sales Representative	6000	12000
ST_CLERK	Stock Clerk	2000	5000
ST_MAN	Stock Manager	5500	8500

Figure 2: job data

0.2 Employees Table

Employee_Id	First_Name	Last_Name	Email	Phone_Number	Hire_Date	Job_Id
100	Steven	King	SKING	515.123.4567	JUN-17-2006	AD_PRES
101	Neena	Kochar	NKOCHAR	515.123.4568	SEP-21-2008	AD_VP
102	Lex	De Haan	DEHAAN	515.123.4569	JAN-13-2009	AD_VP
103	Alexander	Hunold	AHUNOLD	590.423.4567	JAN-03-2008	IT_PROG
104	Bruce	Ernst	BERNST	590.423.4568	MAY-21-2009	IT_PROG
107	Diana	Lorentz	DLORENTZ	590.423.5567	FEB-07-2008	IT_PROG
124	Kevin	Mourgos	KMORGOS	650.123.5234	NOV-16-2012	ST_MAN
141	Treena	Rajs	RRAJS	650.121.5234	OCT-17-2004	ST_CLERK
142	Curtis	Davies	CDAVIES	121.123.5234	JAN-29-2007	ST_CLERK
143	Randall	Matos	RMATOS	121.123.5234	MAR-15-2008	ST_CLERK
144	Peter	Vargas	PVARGAS	121.123.5234	JUL-09-2008	ST_CLERK
149	Eleni	Zlotkey	EZLOTKEY	44.1344.429018	JAN-29-2014	SA_MAN
174	Ellen	Abel	EABEL	44.1644.429017	MAY-11-2004	SA_REP
176	Jnathon	Taylor	JTAILOR	44.1644.429021	MAR-24-2008	SA_MAN
178	Kimberely	Grant	KGRANT	44.1644.429023	MAY-24-2009	SA_MAN
200	Jennifer	Whalem	JWHALEN	515.123.4444	SEP-17-2003	AD_ASST
201	Michael	Hartstein	MHARSTEIN	515.123.5555	FEB-17-2008	MK_MAN
202	Pat	Fay	PFAY	603.123.6666	AUG-17-2010	MK_REP
205	Shelley	Higgins	SHIGGINS	515.123.8050	JUN-07-2007	AC_MGR
206	William	Gietz	WGIETZ	515.123.8181	JUN-07-2007	AC_ACCOUNT

Name	Type	Collation	Attributes	Null	Default
Employee_Id	int(6)			No	*None*
First_Name	varchar(20)	utf8mb4_general_ci		Yes	*NULL*
Last_Name	varchar(25)	utf8mb4_general_ci		No	*None*
Email	varchar(25)	utf8mb4_general_ci		No	*None*
Phone_Number	varchar(15)	utf8mb4_general_ci		Yes	*NULL*
Hire_Date	date			No	*None*
Job_Id	varchar(10)	utf8mb4_general_ci		No	*None*
Salary	decimal(8,2)			Yes	*NULL*
Commission_pct	decimal(2,2)			Yes	*NULL*
Manager_id	int(6)			Yes	*NULL*
Department_Id	int(4)			Yes	*NULL*

Figure 3: Employee structure

Employee_Id	First_Name	Last_Name	Email	Phone_Number	Hire_Date	Job_Id	Salary	Commission_pct	Manager_id	Department_Id
100	Steven	King	SKING	515.123.4567	2006-06-17	AD_PRES	24000.00	*NULL*	*NULL*	90
101	Neena	Kochar	NKOCHAR	515.123.4568	2008-09-21	AD_VP	17000.00	*NULL*	100	90
102	Lex	De Haan	DEHAAN	515.123.4569	2009-01-13	AD_VP	17000.00	*NULL*	100	90
103	Alexander	Hunold	AHUNOLD	590.423.4567	2008-01-03	IT_PROG	9000.00	*NULL*	102	60
104	Bruce	Ernst	BERNST	590.423.4568	2009-05-21	IT_PROG	6000.00	*NULL*	103	60
107	Diana	Lorentz	DLORENTZ	590.423.5567	2008-02-07	IT_PROG	4200.00	*NULL*	103	60
124	Kevin	Mourgos	KMORGOS	650.123.5234	2012-11-16	ST_MAN	5800.00	*NULL*	100	50
141	Treena	Rajs	RRAJS	650.121.5234	2004-10-17	ST_CLERK	3500.00	*NULL*	124	50
142	Curtis	Davies	CDAVIES	121.123.5234	2007-01-29	ST_CLERK	3100.00	*NULL*	124	50
143	Randall	Matos	RMATOS	121.123.5234	2008-03-15	ST_CLERK	2600.00	*NULL*	124	50
144	Peter	Vargas	PVARGAS	121.123.5234	2008-07-09	ST_CLERK	2500.00	*NULL*	124	50
149	Eleni	Zlotkey	EZLOTKEY	44.1344.429018	2014-01-29	SA_MAN	10500.00	0.20	100	80
174	Ellen	Abel	EABEL	44.1644.429017	2004-05-11	SA_REP	11000.00	0.30	149	80
176	Jonathan	Taylor	JTAILOR	44.1644.429021	2008-03-24	SA_MAN	8600.00	0.20	149	80
178	Kimberley	Grant	KGRANT	44.1644.429023	2009-05-24	SA_MAN	7000.00	0.15	149	*NULL*
200	Jennifer	Whalen	JWHALEN	515.123.4444	2003-09-17	AD_ASST	4400.00	*NULL*	101	10
201	Michael	Hartstein	MHARSTEIN	515.123.5555	2008-02-17	MK_MAN	13000.00	*NULL*	100	20
202	Pat	Fay	PFAY	603.123.6666	2010-08-17	MK_REP	6000.00	*NULL*	201	20
205	Shelley	Higgins	SHIGGINS	515.123.8050	2007-06-07	AC_MGR	12000.00	*NULL*	101	110
206	William	Gietz	WGIETZ	515.123.8181	2007-06-07	AC_ACCOUNT	8300.00	*NULL*	205	110

Figure 4: Employee data

0.3 Department Table

Department_id	Department_Name	Manager_id	Location_id
10	Administration	200	1700
20	Marketing	201	1800
50	Shipping	124	1500
60	IT	103	1400
80	Sales	149	2500
90	Executive	100	1700
110	Accounting	205	1700
190	Contracting	NULL	1700

Name	Type	Collation	Attributes	Null	Default
Department_id	int(4)			No	*None*
Department_Name	varchar(30)	utf8mb4_general_ci		No	*None*
Manager_id	int(6)			Yes	*NULL*
Location_id	int(4)			Yes	*NULL*

Figure 5: dept structure

Department_id	Department_Name	Manager_id	Location_id
10	Administration	200	1700
20	Marketing	201	1800
50	Shipping	124	1500
60	IT	103	1400
80	Sales	149	2500
90	Executive	100	1700
110	Accounting	205	1700
190	Contracting	*NULL*	1700

Figure 6: dept data

0.4 Location Table

Location_id	Street_Address	Postal_Code	City	State_Province	Country_ID
1400	2014 Jabberwocky Rd	26192	Southlake	Texas	US
1500	2011 Interiors Blvd	99236	South San Francisco	California	US
1700	2004 Charade Rd	98199	Seattle	Washington	US
1800	460 Bloor St. W.	ON M5S 1X8	Toronto	Ontario	CA
2500	Magdalen Centre- The Oxford Sc. Park	OX9 9ZB	Oxford	Oxford	UK

Location_id	Street_Address	Postal_Code	City	State_Province	Country_ID
1400	2014 Jabberwocky Rd	26192	Southlake	Texas	US
1500	2011 Interiors Blvd	99236	South San Francisco	California	US
1700	2004 Charade Rd	98199	Seattle	Washington	US
1800	460 Bloor St. W.	ON M5S 1X8	Toronto	Ontario	CA
2500	Magdalen Centre- The Oxford Sc. Park	OX9 9ZB	Oxford	Oxford	UK

Figure 7: location structure

Name	Type	Collation	Attributes	Null	Default
Location_id	int(4)			No	*None*
Street_Address	varchar(40)	utf8mb4_general_ci		Yes	*NULL*
Postal_Code	varchar(12)	utf8mb4_general_ci		Yes	*NULL*
City	varchar(30)	utf8mb4_general_ci		No	*None*
State_Province	varchar(25)	utf8mb4_general_ci		Yes	*NULL*
Country_ID	char(2)	utf8mb4_general_ci		Yes	*NULL*

Figure 8: location data

1 SQL Practices:

1. Write a query that displays the last name , weekly salary, department number of the employees. Name the salary column as "Weekly Salary".

```sql
SELECT
    Last_Name,
    Salary / 4 as "Weekly Salary",
    Department_Id
FROM
    Employees;
```

Listing 1: Weekly Salary

2.

```sql
-- Query to eliminate duplicate rows based on job title
SELECT DISTINCT job_title
FROM employees;
```

Listing 2: Eliminating Duplicate Rows

3.

```sql
-- Query to display the structure of the employees table
DESCRIBE employees;
```

Listing 3: Displaying Table Structure

4. Write a query that displays the last name concatenated with the job ID, separated by a comma and space, and name the column Employee and Title.

```sql
-- Query to display the last name concatenated with the job ID
SELECT last_name || ', ' || job_id AS "Employee and Title"
FROM employees;
```

Listing 4: Concatenating Last Name and Job ID

```sql
SELECT CONCAT(last_name, ', ', job_id) AS "Employee and Title"
FROM employees;
```

Listing 5: Concatenating Last Name and Job ID using CONCAT Func

5. Sorting Values

```sql
SELECT last_name, job_id, department_id, hire_date
FROM employees
ORDER BY hire_date DESC;
```

Listing 6: ORDER BY Clause - Sorting by hire_date in Descending Order

6. Counting Values

```sql
SELECT COUNT(*) AS TotalEmployees
FROM employees;
```

Listing 7: Count

```sql
SELECT job_id, COUNT(*) AS EmployeeCount
FROM employees
GROUP BY job_id;
```

Listing 8: Count

```sql
SELECT department_id, COUNT(*) AS EmployeeCount
FROM employees
GROUP BY department_id;
```

Listing 9: Count