SEED

خوشحال خیبر پختونخوا

atomcamp

SQL: Assignment No. 01

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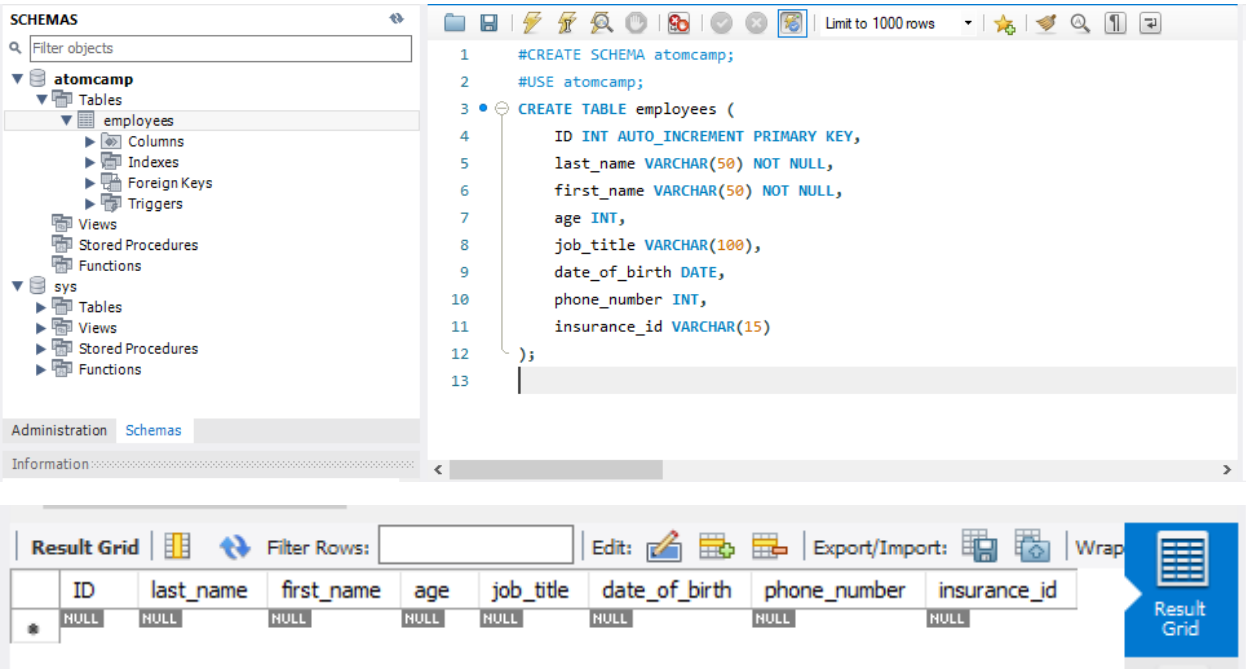
Data Science & AI Boot Camp

Question: How would you create a table named "employees" with specific columns and data types?

- ID - INT autoincrement
- last_name - VARCHAR of size 50 should not be null
- first_name - VARCHAR of size 50 should not be null
- age - INT
- job_title - VARCHAR of size 100
- date_of_birth - DATE
- phone_number - INT
- insurance_id - VARCHAR of size 15

SET ID AS PRIMARY KEY DURING TABLE CREATION

Solution:



Question:

Add the following data to this table in a SINGLE query:
Smith | John | 32 | Manager | 1989-05-12 | 5551234567 | INS736 |
Johnson | Sarah | 28 | Analyst | 1993-09-20 | 5559876543 | INS832 |
Davis | David | 45 | HR | 1976-02-03 | 5550555995 | INS007 |
Brown | Emily | 37 | Lawyer | 1984-11-15 | 5551112022 | INS035 |
Wilson | Michael | 41 | Accountant | 1980-07-28 | 5554403003 | INS943 |
Anderson | Lisa | 22 | Intern | 1999-03-10 | 5556667777 | INS332 |
Thompson | Alex | 29 | Sales Representative| 5552120111 | 555-888-9999 | INS433 |
-- While inserting the above data, you might get error because of Phone number column.
-- As phone_number is INT right now. Change the datatype of phone_number to make them strings of FIXED LENGTH of 10 characters.
-- Do some research on which datatype you need to use for this.

Solution:

To store phone numbers as strings of fixed length, I used '**CHAR**' over '**VARCHAR**' datatype. However, since I want the phone numbers to be a fixed length of 10 characters, the **'CHAR'** data type would be more appropriate.

```
1  SELECT * FROM atomcamp.employees;
2  ALTER TABLE employees MODIFY phone_number CHAR(10);
3  INSERT INTO employees (last_name, first_name, age, job_title, date_of_birth, phone_number, insurance_id) VALUES
4  ('Smith', 'John', 32, 'Manager', '1989-05-12', '5551234567', 'INS736'),
5  ('Johnson', 'Sarah', 28, 'Analyst', '1993-09-20', '5559876543', 'INS832'),
6  ('Davis', 'David', 45, 'HR', '1976-02-03', '5550555995', 'INS007'),
7  ('Brown', 'Emily', 37, 'Lawyer', '1984-11-15', '5551112022', 'INS035'),
8  ('Wilson', 'Michael', 41, 'Accountant', '1980-07-28', '5554403003', 'INS943'),
9  ('Anderson', 'Lisa', 22, 'Intern', '1999-03-10', '5556667777', 'INS332'),
10 ('Thompson', 'Alex', 29, 'Sales Representative', null, '5552120111', 'INS433');
```

Result Grid | Filter Rows: | Edit: | Export/Import: | Wrap Cell Content:

ID	last_name	first_name	age	job_title	date_of_birth	phone_number	insurance_id
1	Smith	John	32	Manager	1989-05-12	5551234567	INS736
2	Johnson	Sarah	28	Analyst	1993-09-20	5559876543	INS832
3	Davis	David	45	HR	1976-02-03	5550555995	INS007
4	Brown	Emily	37	Lawyer	1984-11-15	5551112022	INS035
5	Wilson	Michael	41	Accountant	1980-07-28	5554403003	INS943
6	Anderson	Lisa	22	Intern	1999-03-10	5556667777	INS332
7	Thompson	Alex	29	Sales Representative	NULL	5552120111	INS433
NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL

Question: Explore unique job titles?

Solution:

Limit to 1000 rows

```
1  SELECT * FROM atomcamp.employees;
2  SELECT DISTINCT job_title
3  FROM employees;
```

Result Grid | Filter Rows: | Export: | Wrap Cell Content:

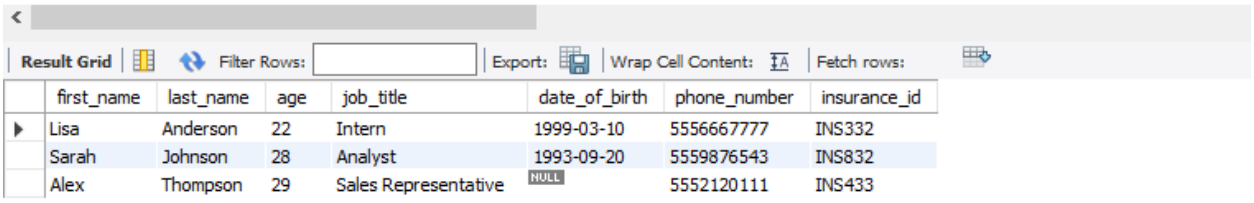
job_title
Manager
Analyst
HR
Lawyer
Accountant
Intern
Sales Representative

Result Grid | Form Editor

Question: Name the top three youngest employees?

Solution:

```
1 •  SELECT * FROM atomcamp.employees;
2 •  SELECT first_name, last_name, age , job_title, date_of_birth, phone_number, insurance_id
3    FROM employees
4    ORDER BY age
5    LIMIT 3;
6
```



Result Grid | Filter Rows: | Export: | Wrap Cell Content: | Fetch rows:

first_name	last_name	age	job_title	date_of_birth	phone_number	insurance_id
Lisa	Anderson	22	Intern	1999-03-10	5556667777	INS332
Sarah	Johnson	28	Analyst	1993-09-20	5559876543	INS832
Alex	Thompson	29	Sales Representative	NULL	5552120111	INS433

Question: Update date of birth for Alex Thompson as it is 1992-06-24?

Solution:

```
1 •  SELECT * FROM atomcamp.employees;
2 •  UPDATE employees
3    SET date_of_birth = '1992-06-24'
4    WHERE ID = (
5        SELECT ID FROM (
6            SELECT ID FROM employees WHERE first_name = 'Alex' AND last_name = 'Thompson'
7        ) AS temp
8    );
9
```

ID	last_name	first_name	age	job_title	date_of_birth	phone_number	insurance_id
1	Smith	John	32	Manager	1989-05-12	5551234567	INS736
2	Johnson	Sarah	28	Analyst	1993-09-20	5559876543	INS832
3	Davis	David	45	HR	1976-02-03	5550555995	INS007
4	Brown	Emily	37	Lawyer	1984-11-15	5551112022	INS035
5	Wilson	Michael	41	Accountant	1980-07-28	5554403003	INS943
6	Anderson	Lisa	22	Intern	1999-03-10	5556667777	INS332
7	Thompson	Alex	29	Sales Representative	1992-06-24	5552120111	INS433
NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL

Question: Delete the data of employees with age greater than 30?

Solution:

```
1  SELECT * FROM atomcamp.employees;
2  DELETE employees
3  FROM employees
4  JOIN (
5      SELECT *
6      FROM employees
7      WHERE age > 30
8  ) AS temp ON employees.ID = temp.ID;
9
```

Result Grid | Filter Rows: | Edit: | Export/Import: | Wrap Cell Content:

ID	last_name	first_name	age	job_title	date_of_birth	phone_number	insurance_id
2	Johnson	Sarah	28	Analyst	1993-09-20	5559876543	INS832
6	Anderson	Lisa	22	Intern	1999-03-10	5556667777	INS332
7	Thompson	Alex	29	Sales Representative	1992-06-24	5552120111	INS433
NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL

Question: Concatenating First name and Last name?

Solution:

```
1  SELECT * FROM atomcamp.employees;
2  SELECT CONCAT(first_name, ' ', last_name) AS full_name
3  FROM employees;
4
```

Result Grid | Filter Rows: | Export: | Wrap Cell Content:

full_name
Sarah Johnson
Lisa Anderson
Alex Thompson

Question: Create a table called employee_insurance with the following columns and datatypes:

- insurance_id VARCHAR of size 15
- insurance_info VARCHAR of size 100
- Make insurance_id the primary key of this table?

Solution:

```sql
#CREATE SCHEMA atomcamp;
#USE atomcamp;

CREATE TABLE employee_insurance (
    insurance_id VARCHAR(15) PRIMARY KEY,
    insurance_info VARCHAR(100)
);
```

insurance_id	insurance_info
NULL	NULL

Question: Insert the following values into employee_insurance:

"INS736", "unavailable"
"INS832", "unavailable"
"INS007", "unavailable"
"INS035", "unavailable"
"INS943", "unavailable"
"INS332", "unavailable"
"INS433", "unavailable"

Solution:

```sql
SELECT * FROM atomcamp.employee_insurance;
INSERT INTO employee_insurance (insurance_id, insurance_info)
VALUES
("INS736", "unavailable"),
("INS832", "unavailable"),
("INS007", "unavailable"),
("INS035", "unavailable"),
("INS943", "unavailable"),
("INS332", "unavailable"),
("INS433", "unavailable");
```

Result Grid | Filter Rows: | Edit: | Export/Import: | Wrap Cell Content:

insurance_id	insurance_info
INS007	unavailable
INS035	unavailable
INS332	unavailable
INS433	unavailable
INS736	unavailable
INS832	unavailable
INS943	unavailable
NULL	NULL

Question: Add a column called email to the employees table. Remember to set an appropriate datatype?

Solution:

```
1 •  ALTER TABLE employees
2    ADD COLUMN email VARCHAR(100);
3
```

Result Grid | Filter Rows: | Edit: | Export/Import: | Wrap Cell Content:

ID	last_name	first_name	age	job_title	date_of_birth	phone_number	insurance_id	email
2	Johnson	Sarah	28	Analyst	1993-09-20	5559876543	INS832	NULL
6	Anderson	Lisa	22	Intern	1999-03-10	5556667777	INS332	NULL
7	Thompson	Alex	29	Sales Representative	1992-06-24	5552120111	INS433	NULL
NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL

Question: Add the value "unavailable" for all records in email in a SINGLE query?

Solution:

```
1 •  SELECT * FROM atomcamp.employees;
2    #SET SQL_SAFE_UPDATES = 0;
3 •  UPDATE employees
4    SET email = 'unavailable';
```

Result Grid | Filter Rows: | Edit: | Export/Import: | Wrap Cell Content:

ID	last_name	first_name	age	job_title	date_of_birth	phone_number	insurance_id	email
2	Johnson	Sarah	28	Analyst	1993-09-20	5559876543	INS832	unavailable
6	Anderson	Lisa	22	Intern	1999-03-10	5556667777	INS332	unavailable
7	Thompson	Alex	29	Sales Representative	1992-06-24	5552120111	INS433	unavailable
NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL