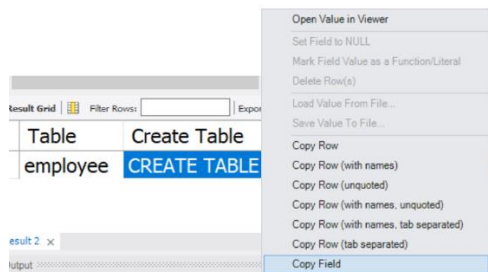


An example of using ChatGPT to write SQL statements

The mydatabase we created in class has two tables: Employee and Department. In order to ask ChatGPT to write SQL Select commands to retrieve information from this database we need to explain the database structure to ChatGPT, and the best way is sending the the Create Table commands to ChatGPT.

Step 1: Enter and execute the Show Create Table employee command, and right-click the Create Table column and select Copy Field. This will copy the complete create table used to create the employee table. And then simply paste it to a Word document. Then repeat this process to run Show Create Table Department command and copy/paste the create table command to the Word document.

```
1 show create table employee;
```



Step 2: Send the create table commands to ChatGPT:

This MySQL database named mydatabase is created by the following create table commands:

```
'CREATE TABLE `employee` (  
  `eid` char(5) NOT NULL,  
  `ename` varchar(45) DEFAULT NULL,  
  `sex` char(1) DEFAULT "m",  
  `salary` decimal(9,2) DEFAULT NULL,  
  `hiredate` date DEFAULT NULL,  
  `deptid` char(5) DEFAULT NULL,  
  PRIMARY KEY (`eid`),  
  KEY `fkDeptID_idx` (`deptid`),  
  CONSTRAINT `fkDeptID` FOREIGN KEY (`deptid`) REFERENCES `department` (`deptid`) ON DELETE SET  
  NULL ON UPDATE CASCADE,  
  CONSTRAINT `validSalaryRange` CHECK ((`salary` between 1000 and 100000)),  
  CONSTRAINT `validSex` CHECK ((`sex` in (_utf8mb4"M",_utf8mb4"F",_utf8mb4"X")))
```

```
) ENGINE=InnoDB DEFAULT CHARSET=utf8mb4 COLLATE=utf8mb4_0900_ai_ci'
```

```
'CREATE TABLE `department` ('
```

```
  `deptid` char(5) NOT NULL,
```

```
  `deptname` varchar(45) DEFAULT NULL,
```

```
  `deptphone` char(10) DEFAULT NULL,
```

```
  `deptemail` varchar(45) DEFAULT NULL,
```

```
  PRIMARY KEY (`deptid`)
```

```
) ENGINE=InnoDB DEFAULT CHARSET=utf8mb4 COLLATE=utf8mb4_0900_ai_ci'
```

Step 3: Ask ChatGPT to write SQL Select commands. You may also ask ChatGPT to verify your SQL statement like Q1. You may ask for specific information like Q2 and Q3. You may also ask ChatGPT to retrieve information it considers useful from this database like Q4.

Q1: I want to know the number of employees in each sex group. Is my SQL statement correct:

```
Select sex, count(eid) from employee;
```

ChatGPT reply:

Your SQL statement is close, but it's missing the GROUP BY clause. To count the number of employees in each gender group, you should use GROUP BY to group the results by the sex column. Here's the corrected SQL statement:

```
SELECT sex, COUNT(eid) AS num_employees
```

```
FROM employee
```

```
GROUP BY sex;
```

In this query:

We select the sex column from the employee table.

We use the COUNT(eid) function to count the number of employees (eid) in each gender group.

We use the GROUP BY clause to group the results by the sex column, which will give you the count of employees for each distinct value in the sex column.

This query will return the gender (sex) and the number of employees (num_employees) in each gender group.

Q2: Write a SQL statement to create query that shows deptID, deptName and number of employees in each department.

ChatGPT reply:

```
SELECT d.deptid, d.deptname, COUNT(e.eid) AS num_employees
FROM department d
LEFT JOIN employee e ON d.deptid = e.deptid
GROUP BY d.deptid, d.deptname;
```

Q3: Write a SQL statement to create query that shows eid, empname, salary, deptID, deptName sorted by the salary.

```
SELECT e.eid, e.ename AS empname, e.salary, e.deptid, d.deptname
FROM employee e
LEFT JOIN department d ON e.deptid = d.deptid
ORDER BY e.salary;
```

Q4: Write a SQL statement to retrieve some information you consider useful and is relevant to employee's seniority and salary.

```
SELECT
    e.eid AS EmployeeID,
    e.ename AS EmployeeName,
    e.salary AS Salary,
    e.hiredate AS HireDate,
    TIMESTAMPDIFF(YEAR, e.hiredate, CURDATE()) AS SeniorityInYears
FROM
    employee e;
```

