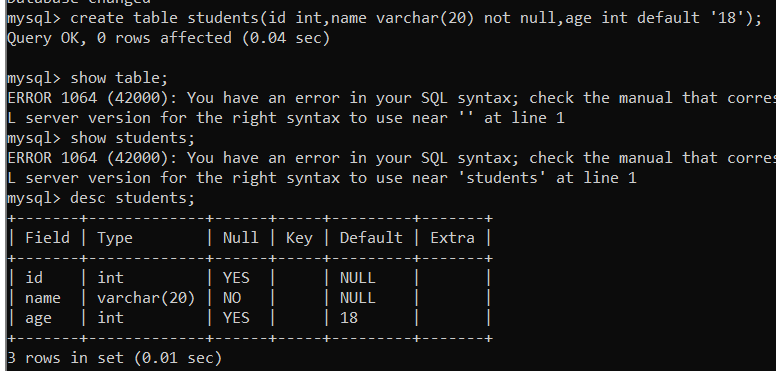
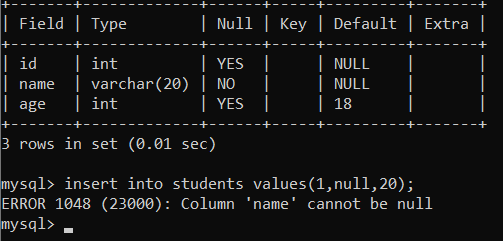
**Assignment no 1**

**CONSTRAINT**

**Q1.** Create a table students with columns: id (INT), name (VARCHAR, NOT NULL), and age (INT with default 18).



**Q2.** Insert into students: (1, NULL, 20). What will happen?

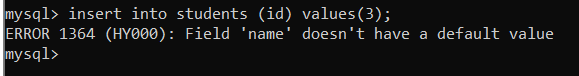


**Q3.** Insert into students: (2, 'Ravi'). What will be stored in age?

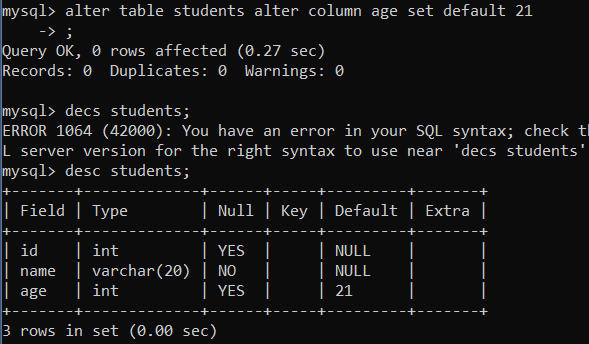


**Q4.** Why will the following query fail?

INSERT INTO students (id) VALUES (3);

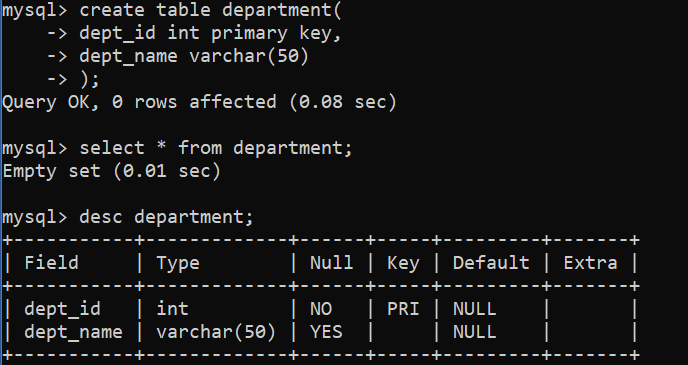


**Q5.** Modify the students table so that the age column default changes from 18 to 21.



**Q6.** Drop the NOT NULL constraint on the name column. Write the query.

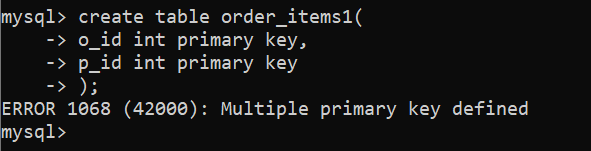
**Q7.** Create a table department with columns: dept\_id (INT, PRIMARY KEY), dept\_name (VARCHAR).



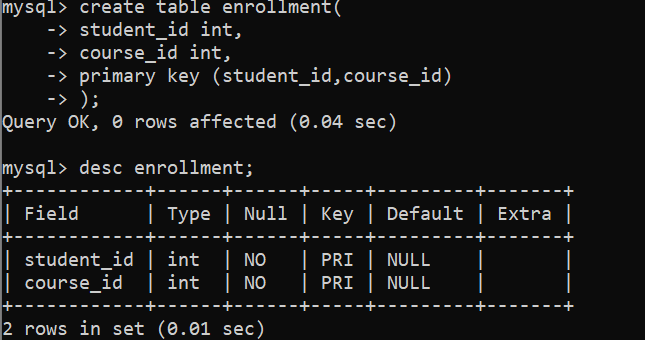
**Q8.** Insert (1,'IT') and (1,'HR'). What error will you get?



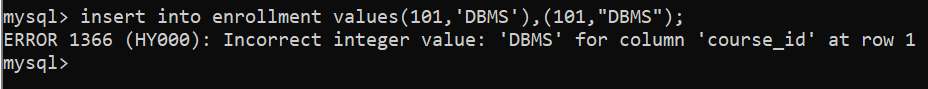
**Q9.** Can a table have two PRIMARY KEYS? Demonstrate with a query.



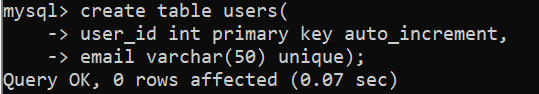
**Q10.** Create a table enrollment with composite primary key (student\_id, course\_id).



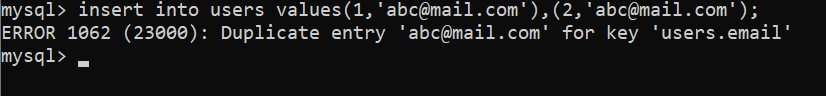
**Q11.** Try inserting (101, 'DBMS') twice into enrollment. What happens?



**Q12.** Create a table users with columns: user\_id (INT, PRIMARY KEY, AUTO\_INCREMENT), email (VARCHAR, UNIQUE).



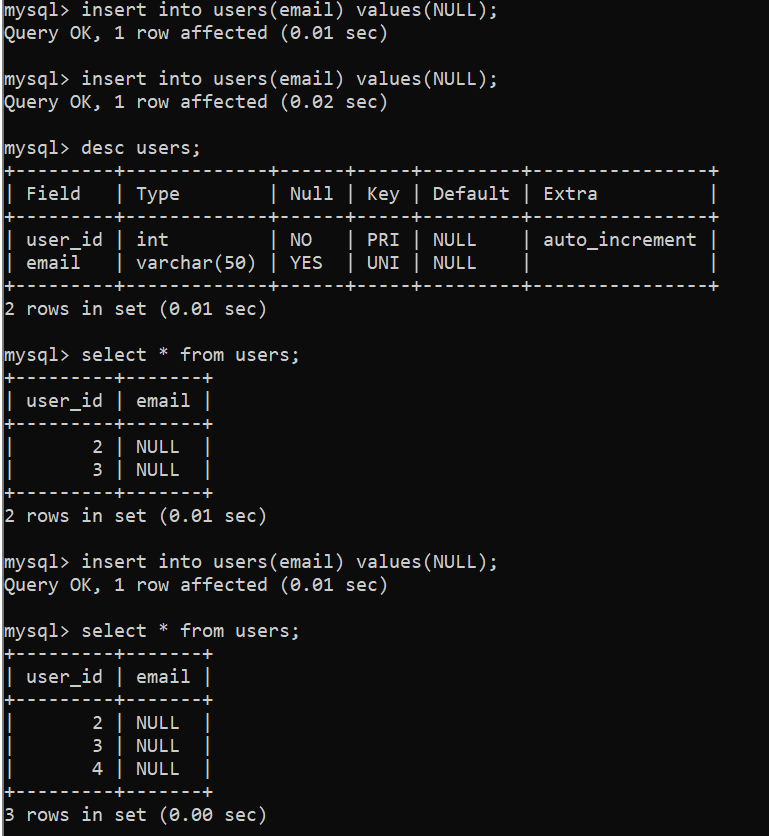
**Q13.** Insert ('abc@mail.com') twice. What error occurs?



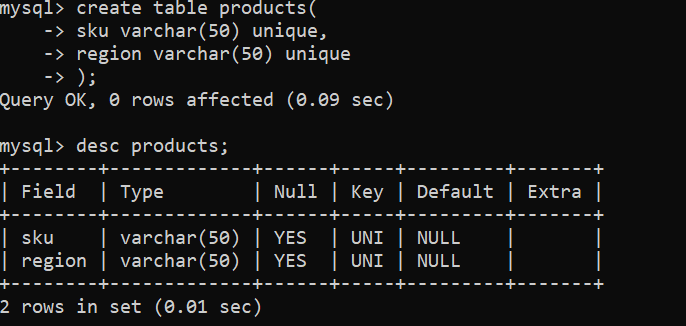
**Q14.** Does the following query work? Why?

INSERT INTO users (email) VALUES (NULL);

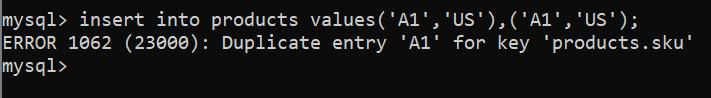
INSERT INTO users (email) VALUES (NULL);



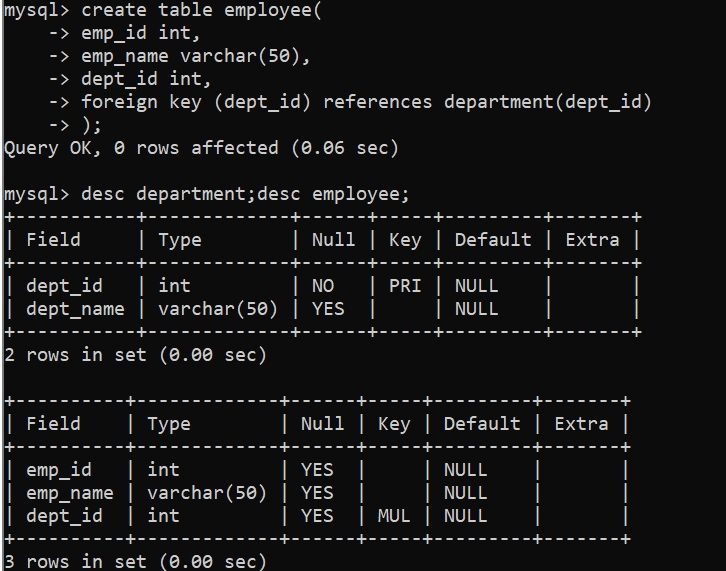
**Q15.** Create a table products with UNIQUE constraint on (sku, region).



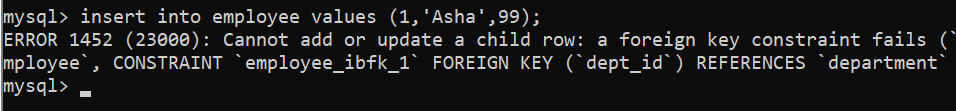
**Q16.** Insert (sku='A1', region='US') twice. What error?



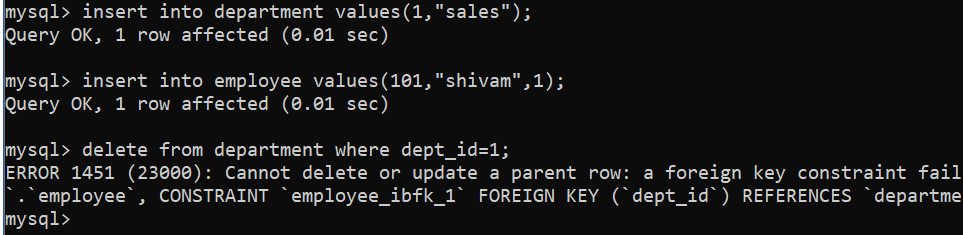
**Q17.** Create a table department with primary key dept\_id. Then create employee table with foreign key dept\_id referencing department.



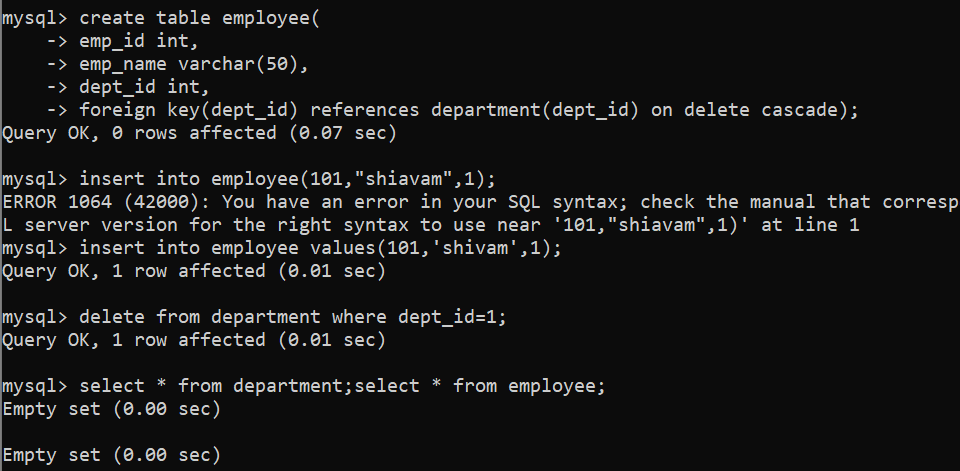
**Q18.** Insert into employee (emp\_id=1, name='Asha', dept\_id=99) when no such dept exists. What error?



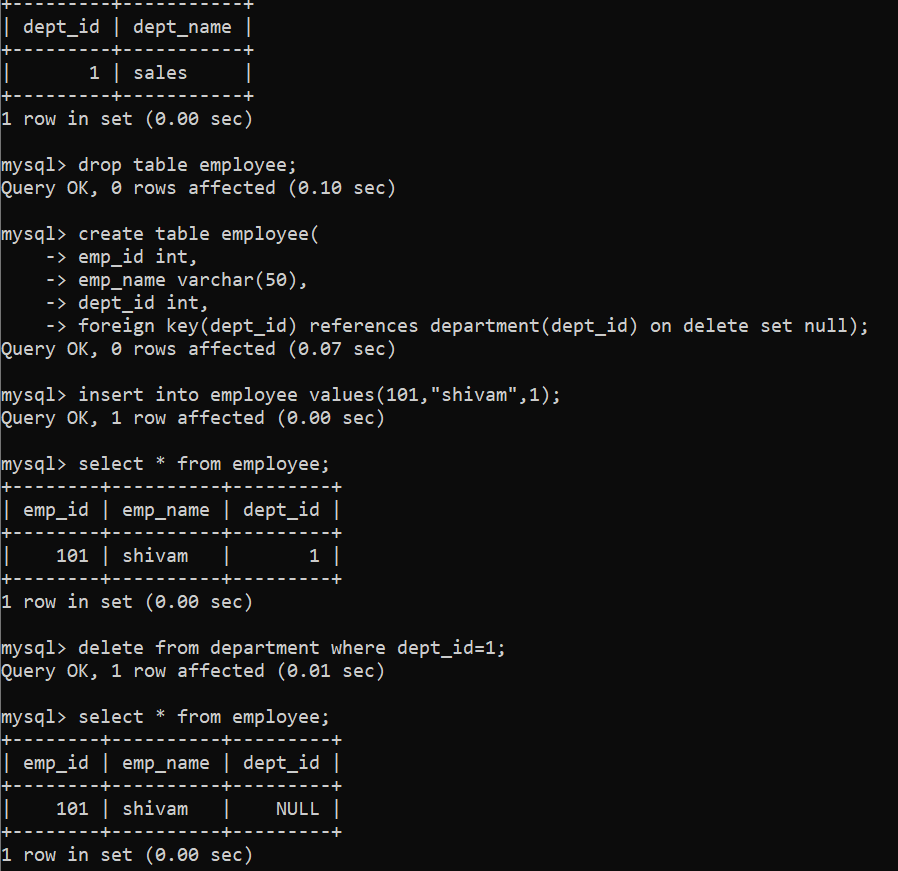
**Q19.** Delete dept\_id=1 from department when employees exist. What error without ON DELETE CASCADE?



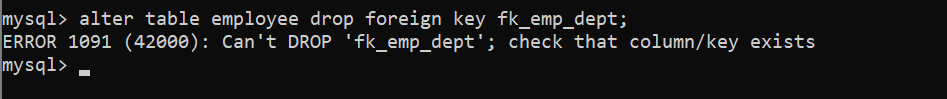
**Q20.** Recreate employee table with ON DELETE CASCADE. What happens if you delete department 1?



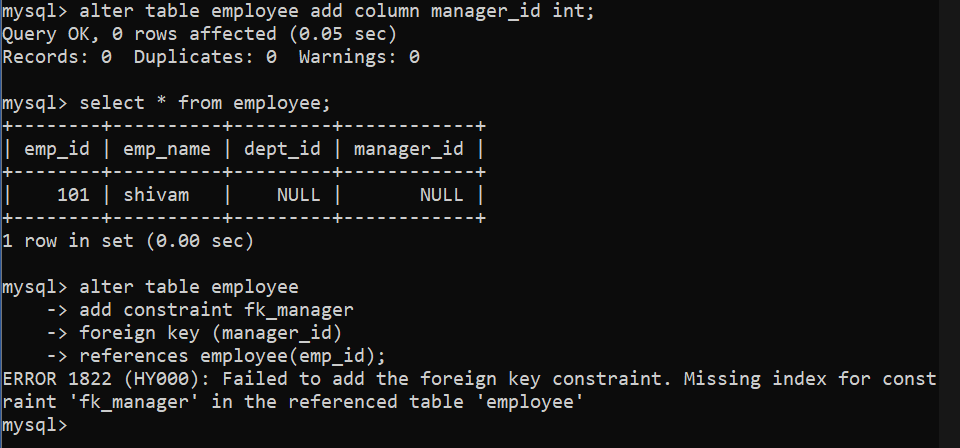
**Q21.** Use ON DELETE SET NULL in the foreign key. What happens when parent is deleted?



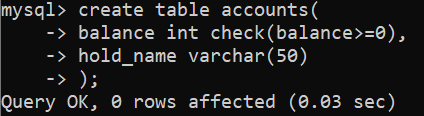
**Q22.** Write a query to drop a foreign key constraint fk\_emp\_dept.



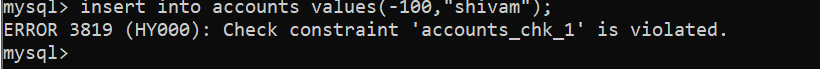
**Q23.** Add a new foreign key constraint fk\_manager in employee table referencing itself (manager\_id).



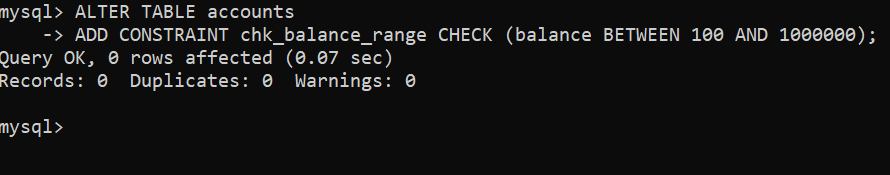
**Q24.** Create table accounts with balance >= 0 using CHECK.



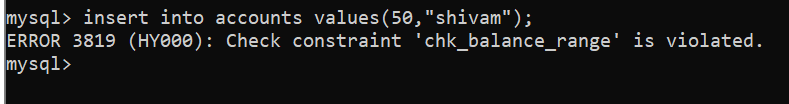
**Q25.** Insert (id=1, balance=-100). What happens?



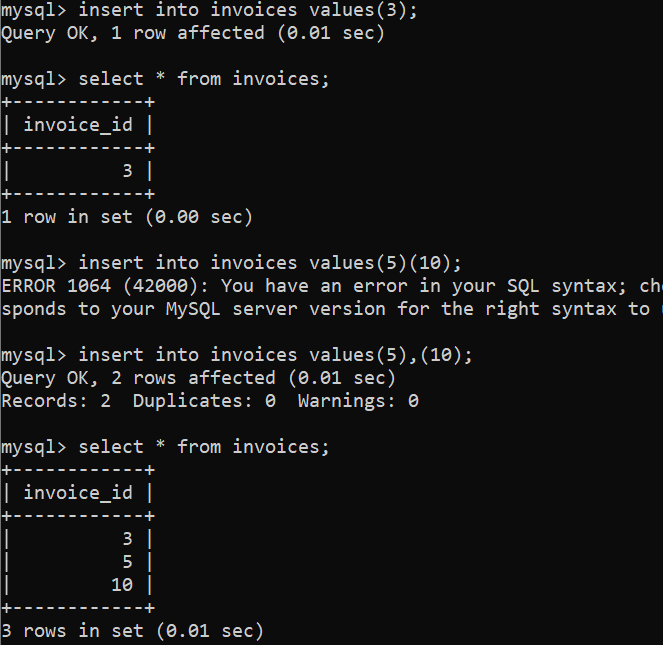
**Q26.** Modify the constraint so that balance must be between 100 and 1,000,000.



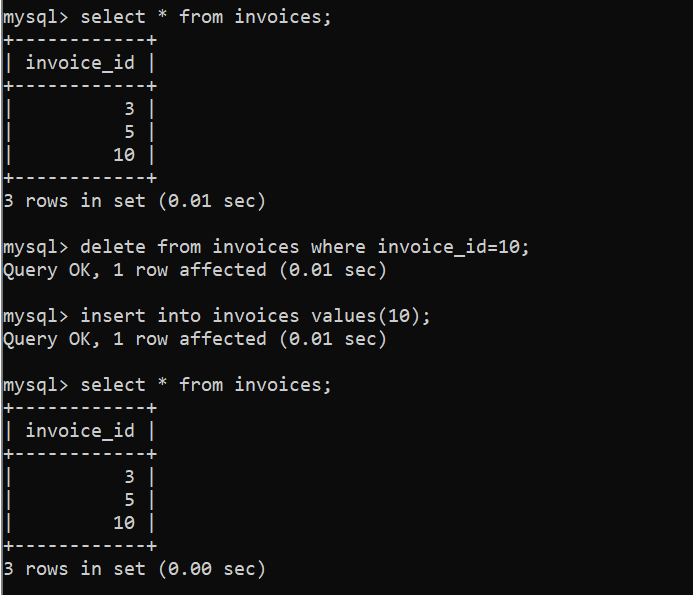
**Q27.** Try to insert (id=2, balance=50). What error do you get?



**Q28.** Create table invoices with invoice\_id AUTO\_INCREMENT PRIMARY KEY. Insert 3 rows. What will be the IDs?

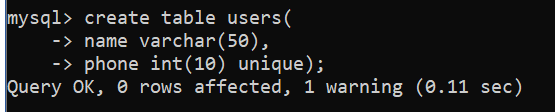


**Q29.** Delete last row. Insert again. Will AUTO\_INCREMENT reuse the deleted number?



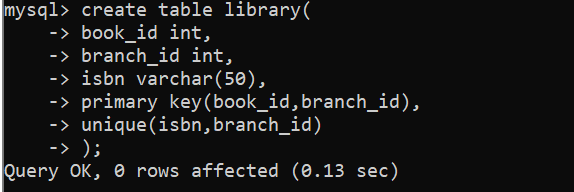
**Q30.** Write queries to:

1. Add a UNIQUE constraint on phone column in users.

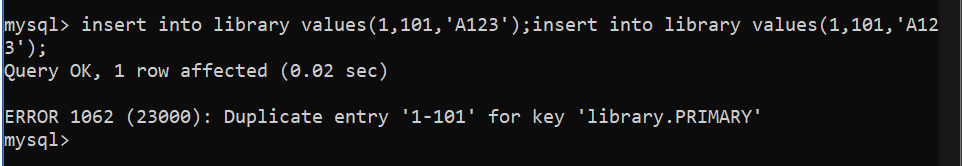


1. Drop the UNIQUE constraint from users.

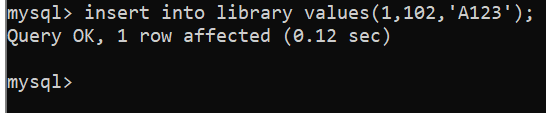
**Q31.** Create a table library with a composite primary key (book\_id, branch\_id) and a UNIQUE constraint on (isbn, branch\_id).



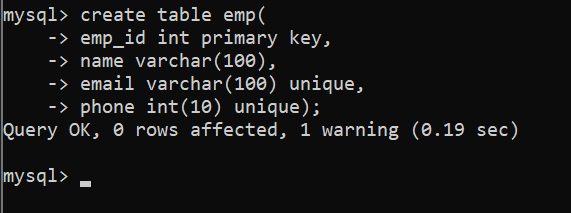
**Q32.** Insert (book\_id=1, branch\_id=101, isbn='A123') twice. What error occurs?



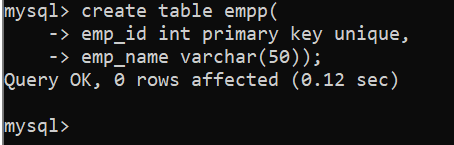
**Q33.** Insert (book\_id=1, branch\_id=102, isbn='A123'). Will it work? Why?



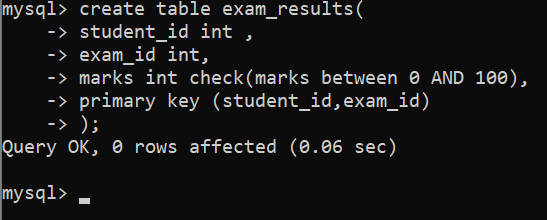
**Q34.** Can you have a table with **PRIMARY KEY** and **multiple UNIQUE constraints**? Write a query.



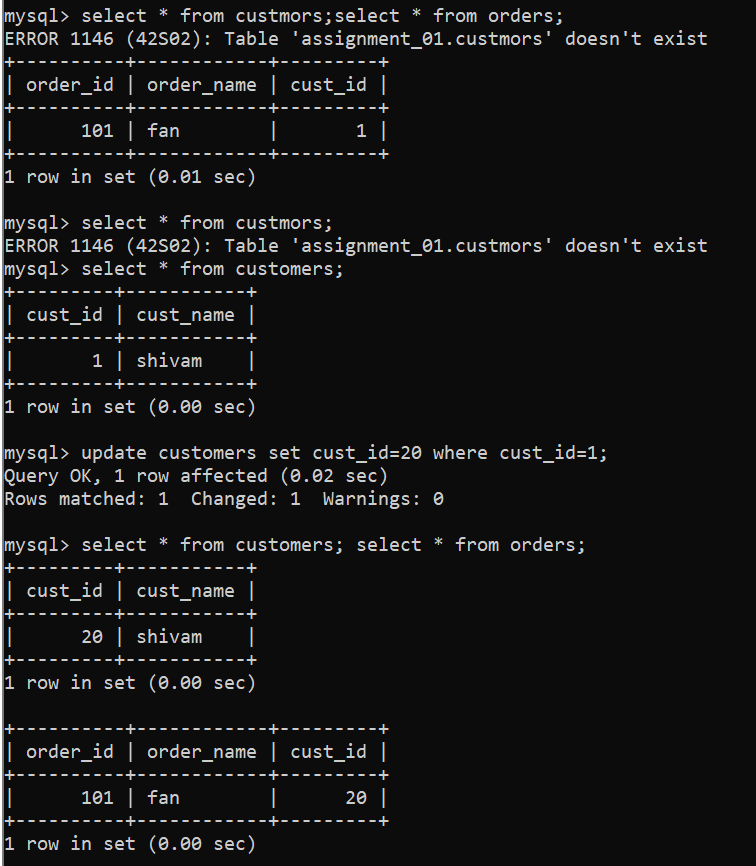
**Q35.** Try to create a table with both PRIMARY KEY(id) and UNIQUE(id). What happens?



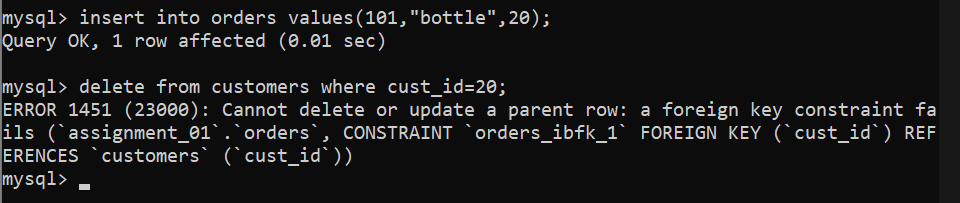
**Q36.** Create table exam\_results with composite primary key (student\_id, exam\_id) and CHECK constraint marks BETWEEN 0 AND 100.



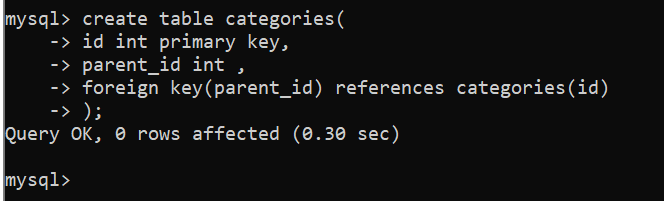
**Q37.** Create table orders referencing customers with ON UPDATE CASCADE. Update customer\_id in parent – what happens in child?



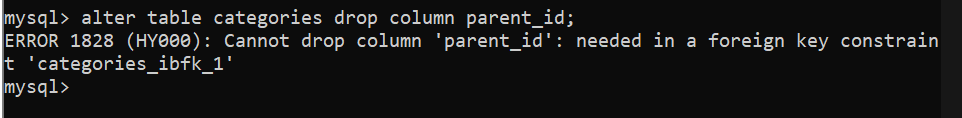
**Q38.** Try to use ON DELETE SET DEFAULT in a foreign key. What happens in MySQL?



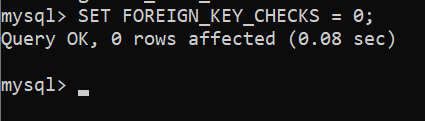
**Q39.** Create a self-referencing foreign key categories(parent\_id) referencing categories(id). Insert parent and child categories.



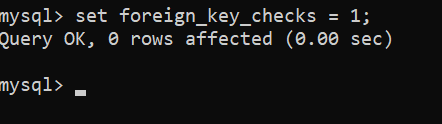
**Q40.** What happens if you delete a parent row in categories without ON DELETE CASCADE?



**Q41.** Write a query to temporarily disable foreign key checks and insert invalid data.

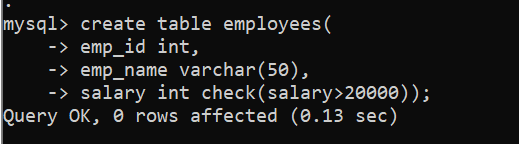


**Q42.** Write a query to re-enable foreign key checks.

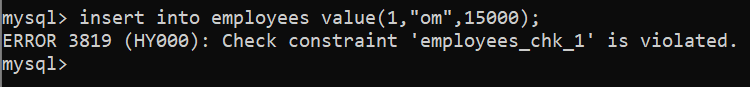


**Q43.** Explain with a query why indexes are automatically created when foreign keys are added.

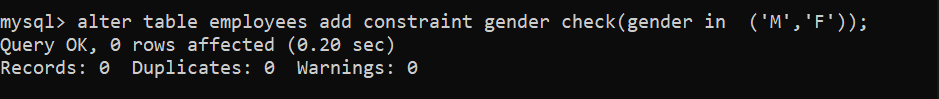
**Q44.** Create a table employees with CHECK that salary > 20000.



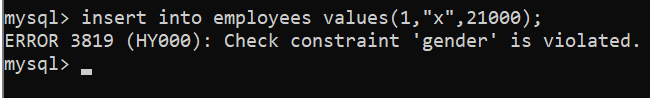
**Q45.** Insert (id=1, salary=15000). What error code will you get?



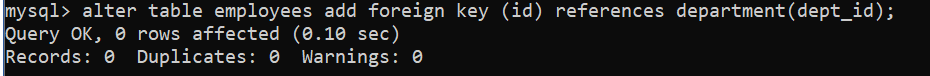
**Q46.** Add a CHECK constraint on gender column so only 'M' or 'F' is allowed.



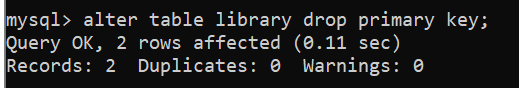
**Q47.** Try inserting gender='X'. What happens?



**Q48.** Add a foreign key constraint on employee.dept\_id referencing department.dept\_id.



**Q49.** Drop a primary key constraint from table library. What query do you use?



**Q50.** Rename a foreign key constraint fk\_emp\_dept to fk\_employee\_department.