SQL and DBMS Exercise

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Please complete this quiz on or before Sept. 23, 2022 at 11 PM and email your outputs at jivemonterozo.stacktrek@gmail.com.

A. Multiple Choice
Choose the correct letter that best describes the item.

c. 1. What differentiates a **PRIMARY KEY** from a **FOREIGN KEY**?
   a. A Primary Key is a referenced key field from one table used in another table, while a Foreign Key specifies the type of the fields.
   b. A Primary Key is a unique key field from one table used in another table, while a Foreign Key specifies the metadata of the fields.
   c. A Primary Key is a unique key field from one table used in another table, while a Foreign Key is a referenced key field from one table used in another table.
   d. Both are the same. There are no differences.

b. 2. What **statement** do we use to *retrieve* data from a database table?
   a. RETRIEVE
   b. SELECT
   c. GET
   d. FETCH

a. 3. What **statement** do we use to *modify* data from a database table?
   a. UPDATE
   b. EDIT
   c. SET
   d. MODIFY

(4 – 7). Use the sample table below as reference and answer the following questions

studentno	firstname	lastname	gender	yearlevel	age
1	Jonape	Cabug	F	3	30
2	Gifaril	Nisperos	F	1	24
3	Patrice	Rivera	F	2	26
4	Arlene	Dato	F	3	25
5	Jive	Monterozo	M	4	24
6	Joseph	Penaverde	M	4	29
7	Janine	Lumbang	F	3	26

C 4. Given the query below, how many rows will be retrieved?

```
SELECT firstname, lastname FROM students WHERE age > 24
   AND gender = 'F'
```

a. 2
b. 3
c. 4
d. 5

C. 5. Given the query below, what row will be on top of the table?

```
SELECT firstname, lastname, yearlevel, age FROM students
   WHERE age > 24 AND gender = 'F' ORDER BY age, firstname
   DESC.
```

a. Patrice
b. Jonape
c. Arlene
d. Janine

Explain your answer (3 pts.): Arlene will be on top because she is the youngest among the 'F' who are older than 24. Arlene is 25.

b. 6. Given the query below, answer the following question:

```
INSERT INTO students(firstName, lastName, gender, yearLevel,
age) VALUES('Ariane', 'Venti', 'F', 3, 30);
INSERT INTO students(firstName, lastName, gender, yearLevel,
age) VALUES('Hairy', 'Styles', 'M', 2, 35);

DELETE FROM students WHERE age >= 27

INSERT INTO students(firstName, lastName, gender, yearLevel,
age) VALUES('Lady', 'Haha', 'F', 4, 34);
```

What will be the ***studentno*** of Lady Haha after being inserted into the table, considering that the field type is set as serial?

a. 8
b. 6
c. 9
d. 10

C. 7. How many rows will be retrieved if I do a select-all right after **inserting** Lady Haha into the table without any filters?

a. 4
b. 5
c. 6

B. True or False.
Indicate whether the following statements are true or false.

false 1. It is possible to initialize 2 **PRIMARY KEYS** in one database table.
true 2. When a certain field is specified as **NOT NULL**, I cannot insert a row with the field set as blank.
true 3. Unique constraints ensures that all the values in a column are distinct/unique.
_____ 4. The rows of the result relation produced by a **SELECT** statement can be sorted, but only *by one column*.
true 5. In PSQL, **MERGE** statement is used to select rows from two or more tables.

C. Coding Exercise
Perform the instructions as instructed.

1. Write the query for creating a database with a name *"record"* and with 3 tables with the following structure as follows: (15 pts)

TABLE NAME: instructor
FIELDS:

- **inst_id** TYPE: serial start with 0 RESTRICTION: cannot be null
- firstname TYPE: string with length 50 RESTRICTION: cannot be null
- middleinitial TYPE: character with length 1
- last name TYPE: string with length 50 RESTRICTION: cannot be null

TABLE NAME: student
FIELDS:

- **student_id** TYPE: serial start with 0 RESTRICTION: cannot be null
- firstname TYPE: string with length 50 RESTRICTION: cannot be null
- middleinitial TYPE: character with length 1
- last name TYPE: string with length 50 RESTRICTION: cannot be null
- age TYPE: integer RESTRICTION: cannot be null
- gender TYPE: character with length 1 RESTRICTION: cannot be null
- class TYPE: int (referencing from table CLASS_id)

TABLE NAME: class
FIELDS:

- **class_code** TYPE: serial start with 0 RESTRICTION: cannot be null
- class_name TYPE: string with length 50 RESTRICTION: cannot be null
- location TYPE: string with length 50 RESTRICTION: cannot be null
- instructor TYPE: int (referencing from table INSTRUCTOR_inst_id)

2. Assume that the table class has records. Write a query that deletes rows from the table class that doesn't have any instructor assigned.
3. Suppose I have a yoga student with the first name "Charlotte" but misspelled in the database record as "Cherlotte". Write a query that updates the name to the correct spelling.