Name: *JIANG Guanlin*   Student ID: *21093962D*

(6.5)

COMP 3335 Database Security Quiz 2 (Total Marks: 13)

Time Allowed: 40 minutes

Please write your answer in the space provided.

1. Answer the following questions regarding Database Security - Confidentiality: (1.5)

    a. What is a cryptographic hash function? Give one application of cryptographic hash function. [2 marks]

    the cryptographic hash function is the function which can turn the text to the hashing text (unreadable) also in cyptographic way.

    EX: SHA256   1.5

    b. Discuss one advantage of having the DBMS to conduct the encryption. [1 mark]

    ~~Avoa~~ Avoid the people or hacker into the database can just know the text.   X

2. Answer the following questions regarding MySQL Authorization: (3.5)

    a. What is the table that stores *database* level privilege in MySQL?   [1 mark]

    The table can Insert, update, select, delete if the user have the privileges of the database.   X

    b. In MySQL, if grant tables are modified using INSERT, UPDATE, or DELETE, can the new privilege(s) be effective instantly? Explain briefly.   [2 mark]

    The new privilege can't be effective instantly, because the tables already modified.   X X (1)

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c. Suppose, in a MySQL server, there exists a database named "COMP3335" with two tables, "StudentName" and "QuizQ". Currently, two user accounts have been created, namely, "Allen" and "Alven". "Allen" can connect to the server from any host, while "Alven" can only connect from localhost. Create a SINGLE SQL statement for each of the following requirements:

i. "Allen" is granted to view, add, and update contents in "StudentName" and "QuizQ". [1 mark]

GRANT ~~VIEW~~ SELECT, INSERT, UPDATE ON 'COMP3335'. StudentName', 'COMP3335'·'QuizQ' TO 'Allen' ~~@%~~ ; @'%' ; (1)

ii. "Allen" is able to grant "SELECT" and "INSERT" privileges on "QuizQ" to other users. [1 mark]

GRANT SELECT, INSERT ON 'COMP3335'·'QuizQ' TO 'Allen', WITH GRANT OPTIONS. % (1)

'COMP3335'·'QuizQ'· ← Mark

iii. There are two columns, "Question" and "Mark", in "QuizQ", "Alven" is granted to view contents of "Question" and "Mark". Also, he can create new contents and make changes to the contents of "Mark". [1 mark]

, INSERT, UPDATE ON

~~GRANT SELECT~~ @%

0.5

GRANT SELECT, ~~INSERT~~ ON 'COMP3335'·'QuizQ' To 'Alven'@'localhost' 'Question' with update privilege.

3. Answer the following questions regarding SQL Injection attack. (0.5)

a. What are the difference between first-order and second-order SQL injection attack? [1 mark]

the difference is first-order in HTTP. second-order in HTTPS.

b. Discuss two countermeasures against SQL injection attack. [1 mark]

① Input validation & filter

0.5   ② Parameter Query .

c. What is the root cause of SQL injection attack? [1 mark]

the root cause is the SQL injection need to try and guess, maybe use a lot of time.

4. Answer the following questions regarding Oracle Data Safe.

a. Oracle Data Safe provide a function called mask data. What is it? Also, give one scenario in which this function is useful. [2 marks]

Mask Data is for the privacy data or important data, some data need to have some process, like add noise to masking.

Like when develop need some real data to do some testing.

End of Paper