

INFO90002 Exam Revision No 3. S1, 2019

1. Security & Ethics

1. Explain the difference between a logical and physical backup

2. Distributed Databases

2. What are the advantages of a distributed (non replicated) database when compared to decentralized databases?

3. NoSQL

3.1. Give three examples of the types of data that can be stored in a Column-type database

3.2. Using a diagram explain how a graph database (e.g. Neo4J) works

4. Transactions

4. What is page level locking? How is it different to the other types of database locking?

5. Applications

5.1. How is security enforced in multi-tier applications?

5.2. What are the inputs and outputs in each layer of a 3 tier system architecture?

6. SQL

| | empno | name | job | boss | hiredate | salary | comm | deptno |
|---|-------|--------|-----------|------|------------|---------|---------|--------|
| ▶ | 7369 | SMITH | CLERK | 7902 | 1980-12-17 | 800.00 | NULL | 20 |
| | 7499 | ALLEN | SALESMAN | 7698 | 1981-02-20 | 1600.00 | 300.00 | 30 |
| | 7521 | WARD | SALESMAN | 7698 | 1981-02-22 | 1250.00 | 500.00 | 30 |
| | 7566 | JONES | MANAGER | 7839 | 1981-04-02 | 2975.00 | NULL | 20 |
| | 7654 | MARTIN | SALESMAN | 7698 | 1981-09-28 | 1250.00 | 1400.00 | 30 |
| | 7698 | BLAKE | MANAGER | 7839 | 1981-05-01 | 2850.00 | NULL | 30 |
| | 7782 | CLARK | MANAGER | 7839 | 1981-06-09 | 2450.00 | NULL | 10 |
| | 7788 | SCOTT | ANALYST | 7566 | 1982-12-09 | 3000.00 | NULL | 20 |
| | 7839 | KING | PRESIDENT | NULL | 1981-11-17 | 5000.00 | NULL | 10 |
| | 7844 | TURNER | SALESMAN | 7698 | 1981-09-08 | 1500.00 | 0.00 | 30 |
| | 7876 | ADAMS | CLERK | 7788 | 1983-01-12 | 1100.00 | NULL | 20 |
| | 7900 | JAMES | CLERK | 7698 | 1981-12-03 | 950.00 | NULL | 30 |
| | 7902 | FORD | ANALYST | 7566 | 1981-12-03 | 3000.00 | NULL | 20 |
| | 7934 | MILLER | CLERK | 7782 | 1982-01-23 | 1300.00 | NULL | 10 |

Reviewing the EMP table write the following SQL statements:

6.1. Write the SQL statement to change SCOTT's job to MANAGER

6.2. Write the SQL statement to remove MILLER from the table

6.3. Write the SQL statement to add the following information

Empno: 7967 Name: PATEL Job: CLERK Boss: 7788, hiredate: 27th August 1984, salary: 800.00 comm 0.00 Department number: 20

6.4. Write the SQL statement to increase the salary of all Clerks by 1000.50

6.5. Write the SQL statement to retrieve the names of all bosses who manage two or more staff