Career Services Assignment 6 – SQL Flash Cards

Points possible: 50

Category	Criteria	% of Grade
Completeness	All requirements of the assignment are complete.	100

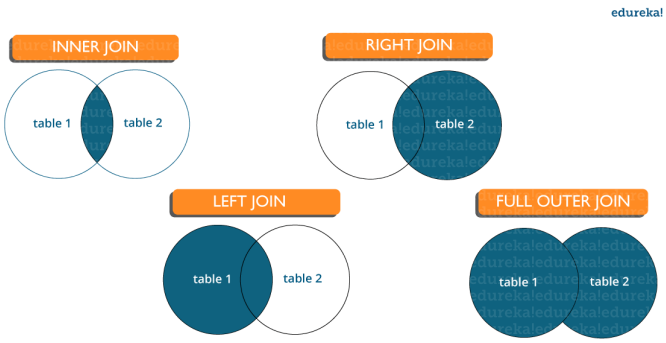
Instructions: Research common SQL interview questions online and create 20 flash cards from the information you find. Study your flash cards regularly to better prepare for interviews. Fill out the table below with the information you put on each of your flash cards.

Front of Card	Back of Card
1. What is the difference between SQL and MySQL?	MySQL is an RDMS (Relational Database Management System) such as SQL Server, Informix etc. SQL is the core of the relational database which is used for accessing and managing database
2. What are the different subsets of SQL?	• Data Definition Language (DDL) – It allows you to perform various operations on the database such as CREATE, ALTER, and DELETE objects. • Data Manipulation Language(DML) – It allows you to access and manipulate data. It helps you to insert, update, delete and retrieve data from the database. • Data Control Language(DCL) – It allows you to control access to the database. Example – Grant, Revoke access permissions.

3. What do you mean by DBMS?	A **Database Management System** (**DBMS**) is a software application that interacts with the user, applications, and the database itself to capture and analyze data. A database is a structured collection of data. A DBMS allows a user to interact with the database. The data stored in the database can be modified, retrieved and deleted and can be of any type like strings, numbers, images, etc. There are two types of DBMS: • *Relational Database Management System*: The data is stored in relations (tables). Example – MySQL. • *Non-Relational Database Management System*: There is no concept of relations, tuples and attributes. Example – MongoDB

4. What is RDBMS? How is it different from DBMS?	A relational database management system (RDBMS) is a set of applications and features that allow IT professionals and others to develop, edit, administer, and interact with relational databases. Most commercial relational database management systems use Structured Query Language (SQL) to access the database, which is stored in the form of tables. The RDBMS is the most widely used database system in businesses all over the world. It offers a stable means of storing and retrieving massive amounts of data. Databases, in general, hold collections of data that may be accessed and used in other applications. The development, administration, and use of database platforms are all supported by a database management system. A relational database management system (RDBMS) is a type of database management system (DBMS) that stores data in a row-based table structure that links related data components. An RDBMS contains functions that ensure the data's security, accuracy, integrity, and consistency. This is not the same as the file storage utilized by a database management system. The following are some further distinctions between database management systems and relational database management systems: **The number of users who are permitted to utilize the system** A DBMS can only handle one user at a time,

	whereas an RDBMS can handle numerous users. **Hardware and software specifications** In comparison to an RDBMS, a DBMS requires fewer software and hardware. **Amount of information** RDBMSes can handle any quantity of data, from tiny to enormous, whereas DBMSes are limited to small amounts. **The structure of the database** Data is stored in a hierarchical format in a DBMS, whereas an RDBMS uses a table with headers that serve as column names and rows that hold the associated values. **Implementation of the ACID principle** The atomicity, consistency, isolation, and durability (ACID) concept is not used by DBMSs for data storage. RDBMSes, on the other hand, use the ACID model to organize their data and assure consistency. **Databases that are distributed** A DBMS will not provide complete support for distributed databases, whereas an RDBMS will. **Programs that are managed** A DBMS focuses on keeping databases that are present within the computer network and system hard discs, whereas an RDBMS helps manage relationships between its incorporated tables of data. **Normalization of databases is supported** A RDBMS can be normalized, but a DBMS cannot be normalized.

5. What do you mean by table and field in SQL?	A table refers to a collection of data in an organized manner in form of rows and columns. A field refers to the number of columns in a table. For example: ***Table***:StudentInformation ***Field***: Stu Id, Stu Name, Stu Marks
6. What are joins in SQL?	A JOIN clause is used to combine rows from two or more tables, based on a related column between them. It is used to merge two tables or retrieve data from there. There are 4 types of joins, as you can refer to below:  • **Inner join:** Inner Join in SQL is the most common type of join. It is used to return all the rows from multiple tables where the join condition is satisfied. • **Left Join:** Left Join in SQL is used to return all the rows from the left table but only the matching rows from the right table where the join condition is fulfilled. • **Right Join:** Right Join in SQL is used to return all the rows from the right table but only the matching rows from the left table where the join condition is fulfilled.

	• **Full Join:** Full join returns all the records when there is a match in any of the tables. Therefore, it returns all the rows from the left-hand side table and all the rows from the right-hand side table.
7. What is the difference between CHAR and VARCHAR2 datatype in SQL?	Both Char and Varchar2 are used for characters datatype but varchar2 is used for character strings of variable length whereas Char is used for strings of fixed length. For example, char(10) can only store 10 characters and will not be able to store a string of any other length whereas varchar2(10) can store any length i.e 6,8,2 in this variable.
8. What is the Primary key?	• A Primary key in SQL is a column (or collection of columns) or a set of columns that uniquely identifies each row in the table. • Uniquely identifies a single row in the table • Null values not allowed Example- In the Student table, Stu_ID is the primary key. **Student Table** Stu_ID | Stu_Name 1 | John 2 | Jack 3 | Tyler 4 | Sofia

9. What are UNIQUE Constraints?	The UNIQUE Constraint prevents identical values in a column from appearing in two records. The UNIQUE constraint guarantees that every value in a column is unique.

10. What is the SELECT statement?	A SELECT command gets zero or more rows from one or more database tables or views. The most frequent data manipulation language (DML) command is SELECT in most applications. SELECT queries define a result set, but not how to calculate it, because SQL is a declarative programming language.
11. What are some common clauses used with SELECT query in SQL?	The following are some frequent SQL clauses used in conjunction with a SELECT query: **WHERE** clause: In SQL, the WHERE clause is used to filter records that are required depending on certain criteria. **ORDER BY** clause: The ORDER BY clause in SQL is used to sort data in ascending (ASC) or descending (DESC) order depending on specified field(s) (DESC). **GROUP BY** clause: GROUP BY clause in SQL is used to group entries with identical data and may be used with aggregation methods to obtain summarised database results. **HAVING** clause in SQL is used to filter records in combination with the GROUP BY clause. It is different from WHERE, since the WHERE clause cannot filter aggregated records.

<table>
<tr>
<td>12. Write the SQL query to get the third maximum salary of an employee from a table named employees.</td>
<td>Employee table

<table>
<tr><th>employee_name</th><th>salary</th></tr>
<tr><td>A</td><td>24000</td></tr>
<tr><td>C</td><td>34000</td></tr>
<tr><td>D</td><td>55000</td></tr>
<tr><td>E</td><td>75000</td></tr>
<tr><td>F</td><td>21000</td></tr>
<tr><td>G</td><td>40000</td></tr>
<tr><td>H</td><td>50000</td></tr>
</table>

SELECT * FROM(

SELECT employee_name, salary, DENSE_RANK()

OVER(ORDER BY salary DESC)r FROM Employee)

WHERE r=&n;

To find 3rd highest salary set n = 3</td>
</tr>
<tr>
<td>13. What is the difference between NOW() and CURRENT_DATE()?</td>
<td>NOW() returns a constant time that indicates the time at which the statement began to execute. (Within a stored function or trigger, NOW() returns the time at which the function or triggering statement began to execute. The simple difference between NOW() and CURRENT_DATE() is that NOW() will fetch the current date and time both in format ‘YYYY-</td>
</tr>
</table>

	MM_DD HH:MM:SS' while CURRENT_DATE() will fetch the date of the current day 'YYYY-MM_DD'.

14. What are Constraints?	Constraints in SQL are used to specify the limit on the data type of the table. It can be specified while creating or altering the table statement. The sample of constraints are: • NOT NULL • CHECK • DEFAULT • UNIQUE • PRIMARY KEY • FOREIGN KEY
15. What is a Unique key?	• Uniquely identifies a single row in the table. • Multiple values allowed per table. • Null values allowed. Apart from this SQL Interview Questions blog, if you want to get trained from professionals on this technology, you can opt for structured training from edureka!
16. What is a Foreign key in SQL?	• Foreign key maintains referential integrity by enforcing a link between the data in two tables. • The foreign key in the child table references the primary key in the parent table. • The foreign key constraint prevents actions that would destroy links between the child and parent tables.
17. How to create empty tables with the same structure as another table?	To create empty tables: Using the INTO operator to fetch the records of one table into a new table while setting a

	WHERE clause to false for all entries, it is possible to create empty tables with the same structure. As a result, SQL creates a new table with a duplicate structure to accept the fetched entries, but nothing is stored into the new table since the WHERE clause is active.

18. What is the ACID property in a database?	ACID stands for Atomicity, Consistency, Isolation, Durability. It is used to ensure that the data transactions are processed reliably in a database system. • **Atomicity:** Atomicity refers to the transactions that are completely done or failed where transaction refers to a single logical operation of a data. It means if one part of any transaction fails, the entire transaction fails and the database state is left unchanged. • **Consistency:** Consistency ensures that the data must meet all the validation rules. In simple words, you can say that your transaction never leaves the database without completing its state. • **Isolation:** The main goal of isolation is concurrency control. • **Durability:** Durability means that if a transaction has been committed, it will occur whatever may come in between such as power loss, crash or any sort of error.
19. What is subquery in SQL?	A subquery is a query inside another query where a query is defined to retrieve data or information back from the database. In a subquery, the outer query is called as the main query whereas the inner query is called subquery. Subqueries are always executed first and the result of the subquery is passed on to the main query. It can be nested inside a SELECT, UPDATE or any other query. A subquery can also use any comparison operators such as >,< or =.

20. List the ways to get the count of records in a table?	To count the number of records in a table in SQL, you can use the below commands:
	
	`SELECT * FROM table1`
	
	`SELECT COUNT(*) FROM table1`
	
	`SELECT rows FROM sysindexes WHERE id = OBJECT_ID(table1) AND indid < 2`

https://www.edureka.co/blog/interview-questions/sql-interview-questions