PROMINEO TECH

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Week 10: Career Assignment Instructions – MySQL Flash Cards

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

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What is Database?	A database is an organized collection of data, stored and retrieved digitally from a remote or local computer system. Databases can be vast and complex, and such databases are developed using fixed design and modeling approaches.
What is DBMS?	DBMS stands for Database Management System. DBMS is a system software responsible for the creation, retrieval, updation, and management of the database. It ensures that our data is consistent, organized, and is easily accessible by serving as an interface between the database and its end-users or application software.
What is SQL?	SQL stands for Structured Query Language. It is the standard language for relational database management systems. It is especially useful in handling organized data comprised of entities (variables) and relations between different entities of the data.
What is the difference between SQL and MySQL?	SQL is a standard language for retrieving and manipulating structured databases. On the contrary, MySQL is a relational database management system, like SQL Server, Oracle or IBM DB2, that is used to manage SQL databases.
What are Tables and Fields?	A table is an organized collection of data stored in the form of rows and columns. Columns can be categorized as vertical and rows as horizontal. The columns in a table are called fields while the rows can be referred to as records.

What is a Primary Key?	The PRIMARY KEY constraint uniquely identifies each row in a table. It must contain UNIQUE values and has an implicit NOT NULL constraint. A table in SQL is strictly restricted to have one and only one primary key, which is comprised of single or multiple fields (columns).
What is a UNIQUE constraint?	A UNIQUE constraint ensures that all values in a column are different. This provides uniqueness for the column(s) and helps identify each row uniquely. Unlike primary key, there can be multiple unique constraints defined per table. The code syntax for UNIQUE is quite similar to that of PRIMARY KEY and can be used interchangeably.
What is a Foreign Key?	A FOREIGN KEY comprises of single or collection of fields in a table that essentially refers to the PRIMARY KEY in another table. Foreign key constraint ensures referential integrity in the relation between two tables. The table with the foreign key constraint is labeled as the child table, and the table containing the candidate key is labeled as the referenced or parent table.
What is an Index? Explain its different types.	A database index is a data structure that provides a quick lookup of data in a column or columns of a table. It enhances the speed of operations accessing data from a database table at the cost of additional writes and memory to maintain the index data structure. Unique and Non-Unique Index And Clustered and Non-Clustered Index

What is the difference between Clustered and Non-clustered index?	• Clustered index modifies the way records are stored in a database based on the indexed column. A non-clustered index creates a separate entity within the table which references the original table. • Clustered index is used for easy and speedy retrieval of data from the database, whereas, fetching records from the non-clustered index is relatively slower. • In SQL, a table can have a single clustered index whereas it can have multiple non-clustered indexes
What is Data Integrity?	Data Integrity is the assurance of accuracy and consistency of data over its entire life-cycle and is a critical aspect of the design, implementation, and usage of any system which stores, processes, or retrieves data. It also defines integrity constraints to enforce business rules on the data when it is entered into an application or a database.
What is a Query?	A query is a request for data or information from a database table or combination of tables. A database query can be either a select query or an action query.
What is the SELECT statement?	SELECT operator in SQL is used to select data from a database. The data returned is stored in a result table, called the result-set.

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What is a View?	A view in SQL is a virtual table based on the result-set of an SQL statement. A view contains rows and columns, just like a real table. The fields in a view are fields from one or more real tables in the database.
What is Normalization?	Normalization represents the way of organizing structured data in the database efficiently. It includes the creation of tables, establishing relationships between them, and defining rules for those relationships. Inconsistency and redundancy can be kept in check based on these rules, hence, adding flexibility to the database.
What is Denormalization?	Denormalization is the inverse process of normalization, where the normalized schema is converted into a schema that has redundant information. The performance is improved by using redundancy and keeping the redundant data consistent. The reason for performing denormalization is the overheads produced in the query processor by an over-normalized structure.
What is a Stored Procedure?	A stored procedure is a subroutine available to applications that access a relational database management system (RDBMS). Such procedures are stored in the database data dictionary. The sole disadvantage of stored procedure is that it can be executed nowhere except in the database and occupies more memory in the database server. It also provides a sense of security and functionality as users who can't access the data directly can be granted access via stored procedures.

What is the capacity of a table in PostgreSQL?	The maximum size of PostgreSQL is 32TB.
Does PostgreSQL support full text search?	Full-Text Search is the method of searching single or collection of documents stored on a computer in a full-text based database. This is mostly supported in advanced database systems like SOLR or ElasticSearch. However, the feature is present but is pretty basic in PostgreSQL.
Differentiate between commit and checkpoint.	The commit action ensures that the data consistency of the transaction is maintained and it ends the current transaction in the section. Commit adds a new record in the log that describes the COMMIT to the memory. Whereas, a checkpoint is used for writing all changes that were committed to disk up to SCN which would be kept in datafile headers and control files.