PROMINEO TECH

Career Services Assignment 6 – SQL Flash Cards

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
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.
What is RDBMS? How is it different from DBMS?	RDBMS stands for Relational Database Management System. The key difference here, compared to DBMS, is that RDBMS stores data in the form of a collection of tables, and relations can be defined between the common fields of these tables. Most modern database management systems like MySQL, Microsoft SQL Server, Oracle, IBM DB2, and Amazon Redshift are based on RDBMS.
What is SQL?	SQL stands for Structured Query Language. It is the standard language for relational database management systems. It is especially useful in

Career Services Assignment 6 – SQL Flash Cards

	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 are Constraints in SQL?	Constraints are used to specify the rules concerning data in the table. It can be applied for single or multiple fields in an SQL table during the creation of the table or after creating using the ALTER TABLE command. The constraints are: NOT NULL, CHECK, DEFAULT, UNIQUE, INDEX, PRIMARY KEY, FOREIGN KEY
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 a Self-Join?	A self JOIN is a case of regular join where a table is joined to itself based on some relation between its own column(s). Self-join uses the INNER JOIN or LEFT JOIN clause and a table alias is used to assign different names to the table within the query.
What is a Cross-Join?	Cross join can be defined as a cartesian product of the two tables included in the join. The table after join contains the same number of rows as in the cross-product of the number of rows in

	the two tables. If a WHERE clause is used in cross join then the query will work like an INNER JOIN.
What is the difference between Clustered and Non-clustered index?	The differences can be broken down into three small factors: - 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 are some common clauses used with SELECT query in SQL?	Some common SQL clauses used in conjuction with a SELECT query are as follows:

Career Services Assignment 6 – SQL Flash Cards

	WHERE clause in SQL is used to filter records that are necessary, based on specific conditions. ORDER BY clause in SQL is used to sort the records based on some field(s) in ascending (ASC) or descending order (DESC). GROUP BY clause in SQL is used to group records with identical data and can be used in conjunction with some aggregation functions to produce summarized results from the database. 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.
What are UNION, MINUS and INTERSECT commands?	The UNION operator combines and returns the result-set retrieved by two or more SELECT statements. The MINUS operator in SQL is used to remove duplicates from the result-set obtained by the second SELECT query from the result-set obtained by the first SELECT query and then return the filtered results from the first. The INTERSECT clause in SQL combines the result-set fetched by the two SELECT statements where records from one match the other and then returns this intersection of result-sets. Certain conditions need to be met before executing either of the above

	statements in SQL - Each SELECT statement within the clause must have the same number of columns The columns must also have similar data types The columns in each SELECT statement should necessarily have the same order
What is Cursor? How to use a Cursor?	A database cursor is a control structure that allows for the traversal of records in a database. Cursors, in addition, facilitates processing after traversal, such as retrieval, addition, and deletion of database records. They can be viewed as a pointer to one row in a set of rows. Working with SQL Cursor: DECLARE a cursor after any variable declaration. The cursor declaration must always be associated with a SELECT Statement. Open cursor to initialize the result set. The OPEN statement must be called before fetching rows from the result set. FETCH statement to retrieve and move to the next row in the result set. Call the CLOSE statement to deactivate the cursor. Finally use the DEALLOCATE statement

	to delete the cursor definition and release the associated resources.
What are Entities and Relationships?	Entity: An entity can be a real-world object, either tangible or intangible, that can be easily identifiable. For example, in a college database, students, professors, workers, departments, and projects can be referred to as entities. Each entity has some associated properties that provide it an identity. Relationships: Relations or links between entities that have something to do with each other. For example - The employee's table in a company's database can be associated with the salary table in the same database.
What are the TRUNCATE, DELETE and DROP statements?	DELETE statement is used to delete rows from a table. DELETE FROM Candidates TRUNCATE command is used to delete all the rows from the table and free the space containing the table. DROP command is used to remove an object from the database. If you drop a table, all the rows in the table are deleted and the table structure is removed from the database.
What is the difference between DROP	If a table is dropped, all things

and TRUNCATE statements?	associated with the tables are dropped as well. This includes - the relationships defined on the table with other tables, the integrity checks and constraints, access privileges and other grants that the table has. To create and use the table again in its original form, all these relations, checks, constraints, privileges and relationships need to be redefined. However, if a table is truncated, none of the above problems exist and the table retains its original structure.