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
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 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 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 a Join? List its different types.	(INNER) JOIN: Retrieves records that have matching values in both tables involved in the join. This is the widely used join for queries. LEFT (OUTER) JOIN: Retrieves all the records/rows from the left and the matched records/rows from the right table RIGHT (OUTER) JOIN: Retrieves all the records/rows from the right and the matched records/rows from the left table FULL (OUTER) JOIN: Retrieves all the records where there is a match in either the left or right table.
What is an Index?	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.
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 are Entities?	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.
What are Relationships?	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.
List the different types of relationships in SQL.	One-to-One - This can be defined as the relationship between two tables where each record in one table is associated with the maximum of one record in the other table. One-to-Many & Many-to-One - This is the most commonly used relationship where a record in a table is associated with multiple records in the other table. Many-to-Many - This is used in cases when multiple instances on both sides are needed for defining a relationship. Self-Referencing Relationships - This is used when a table needs to define a relationship with itself
What is a Subquery? What are its types?	A subquery is a query within another query, also known as a nested query or inner query. It is used to restrict or enhance the data to be queried by the main query, thus restricting or enhancing the output of the main query respectively. For example, here we fetch the contact information

	for students who have enrolled for the maths subject:
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
What are some common clauses used with SELECT query in SQL?	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).
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.