Certainly! Here's a simplified theoretical overview for each section:

### 1. SQL Queries:

- \*\*DDL Statements:\*\*

- \*\*Table:\*\* Defines the structure of a table.

- \*\*View:\*\* A virtual table derived from other tables or views.

- \*\*Index:\*\* Improves the speed of data retrieval on a table.

- \*\*Sequence:\*\* Generates unique numeric values.

- \*\*Synonym:\*\* An alias for a table, view, sequence, or program.

- \*\*DML Statements:\*\*

- \*\*Insert:\*\* Adds records to a table.

- \*\*Select:\*\* Retrieves data from one or more tables.

- \*\*Update:\*\* Modifies existing records in a table.

- \*\*Delete:\*\* Removes records from a table.

### 2. SQL Queries – Joins, Sub-Query, and View:

- \*\*Join Types:\*\*

- \*\*Inner Join:\*\* Retrieves rows when there is a match in both tables.

- \*\*Left Join:\*\* Retrieves all rows from the left table and matched rows from the right table.

- \*\*Right Join:\*\* Retrieves all rows from the right table and matched rows from the left table.

- \*\*Sub-Query:\*\* A query nested inside another query, used to retrieve data for comparison.

- \*\*View:\*\* A virtual table based on the result of a SELECT query.

### 3. MongoDB Queries:

- \*\*CRUD Operations:\*\*

- \*\*Create:\*\* Inserts a new document into a collection.

- \*\*Read:\*\* Retrieves documents from a collection.

- \*\*Update:\*\* Modifies existing documents in a collection.

- \*\*Delete:\*\* Removes documents from a collection.

### 4. Unnamed PL/SQL Code Block:

- A PL/SQL block is a set of one or more SQL and PL/SQL statements.

- \*\*Control Structures:\*\* Govern the flow of execution.

- \*\*Exception Handling:\*\* Catches and manages errors during execution.

### 5. MongoDB – Aggregation and Indexing:

- \*\*Aggregation:\*\* Groups and processes data to return computed results.

- \*\*Indexing:\*\* Enhances the speed of data retrieval by creating indexes on fields.

### 6. Exporting and Importing Data:

- \*\*Export:\*\* Writes table data to external files in various formats (CSV, XLSX, TXT).

- \*\*Import:\*\* Reads data from external files into database tables.

### 7. Cursors:

- \*\*Implicit Cursor:\*\* Automatically created by Oracle for SQL statements.

- \*\*Explicit Cursor:\*\* User-defined cursor for more control.

- \*\*Cursor FOR Loop:\*\* Simplifies fetching records.

- \*\*Parameterized Cursor:\*\* Accepts parameters for dynamic queries.

### 8. Database Connectivity:

- Establishing connections to databases using specific programming languages (e.g., Python) to perform operations like adding, deleting, and editing records.

This theoretical overview should help you recall key concepts for each section during your practical oral examination.

Certainly! Here's a simplified cheat sheet for Database Management Systems (DBMS):

### Database Management Systems (DBMS) Cheat Sheet:

1. \*\*Definition:\*\*

- \*\*DBMS:\*\* Software that manages databases, providing an interface for interacting with the data stored.

2. \*\*Types of DBMS:\*\*

- \*\*Relational DBMS (RDBMS):\*\* Stores data in tables with relationships between them.

- \*\*NoSQL DBMS:\*\* Stores and retrieves data using flexible schemas, suitable for unstructured data.

- \*\*Object-Oriented DBMS (OODBMS):\*\* Stores data as objects, similar to object-oriented programming.

3. \*\*Relational Database Concepts:\*\*

- \*\*Table:\*\* Represents entities and their attributes.

- \*\*Row/Tuple:\*\* A record representing a single instance.

- \*\*Column/Attribute:\*\* Represents a specific property or field.

- \*\*Primary Key:\*\* Unique identifier for each record.

- \*\*Foreign Key:\*\* Links tables by referencing a primary key in another table.

4. \*\*Database Operations:\*\*

- \*\*CRUD Operations:\*\*

- \*\*Create:\*\* Inserting new records.

- \*\*Read:\*\* Retrieving data.

- \*\*Update:\*\* Modifying existing records.

- \*\*Delete:\*\* Removing records.

5. \*\*Normalization:\*\*

- \*\*Purpose:\*\* Reducing data redundancy and dependency.

- \*\*Levels (1NF, 2NF, 3NF):\*\* Ensuring data integrity through proper organization.

6. \*\*ACID Properties:\*\*

- \*\*Atomicity:\*\* Ensures transactions are treated as a single unit.

- \*\*Consistency:\*\* Ensures data remains in a consistent state.

- \*\*Isolation:\*\* Ensures transactions are executed independently.

- \*\*Durability:\*\* Guarantees that committed transactions survive system failures.

7. \*\*Database Security:\*\*

- \*\*Authentication:\*\* Verifying user identity.

- \*\*Authorization:\*\* Controlling access to data based on user roles.

- \*\*Encryption:\*\* Securing data during transmission and storage.

8. \*\*Query Languages:\*\*

- \*\*SQL (Structured Query Language):\*\* Standard language for relational database management and manipulation.

- \*\*NoSQL Query Languages:\*\* Vary based on the type of NoSQL database (e.g., MongoDB uses a JSON-like query language).

9. \*\*Backup and Recovery:\*\*

- \*\*Backup:\*\* Creating copies of the database to prevent data loss.

- \*\*Recovery:\*\* Restoring the database to a consistent state after a failure.

10. \*\*Indexing:\*\*

- \*\*Purpose:\*\* Improves query performance by providing faster data retrieval.

- \*\*Types (e.g., B-tree, Hash):\*\* Various structures to organize and access data efficiently.

11. \*\*Concurrency Control:\*\*

- \*\*Purpose:\*\* Manages simultaneous access to the database to avoid conflicts.

- \*\*Methods (e.g., Locking, Timestamps):\*\* Techniques to ensure data consistency.

12. \*\*Data Warehousing:\*\*

- \*\*Purpose:\*\* Centralized repository for data from various sources, supporting analysis and reporting.

This cheat sheet covers essential concepts in DBMS, providing a quick reference for key topics. Adjustments may be needed based on specific coursework or exam requirements.