Components And Overall Structure of DBMS.

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Components of DBMS are broadly classified as follows :

1. Query Processor :

(a) DML Compiler

(b) Embedded DML pre-compiler

(c) DDL Interpreter

(d) Query Evaluation Engine

2. Storage Manager :

(a) Authorization and Integrity Manager

(b) Transaction Manager

(c) File Manager

(d) Buffer Manager

3. Disk storage:

(a) Data Files

(b) Data Dictionary

(c) Indices

(d) Statistical Data

1.Query Processor Components :

- **DML Pre-compiler :** It translates DML statements in a query language into low level instructions that query evaluation engine understands. It also attempts to transform user's request into an equivalent but more efficient form.

- **Embedded DML Pre-compiler :** It converts DML statements embedded in an application program to normal procedure calls in the host language. The Pre-compiler must interact with the DML compiler to generate the appropriate code.

- **DDL Interpreter :** It interprets the DDL statements and records them in a set of tables containing meta data or data dictionary.

- **Query Evaluation Engine :** It executes low-level instructions generated by the DML compiler.

2. Storage Manager Components :

They provide the interface between the low-level data stored in the database and application programs and queries submitted to the system.

- **Authorization and Integrity Manager :** It tests for the satisfaction of integrity constraints checks the authority of users to access data.
- **Transaction Manager :** It ensures that the database remains in a consistent state despite the system failures and that concurrent transaction execution proceeds without conflicting.
- **File Manager :** It manages the allocation of space on disk storage and the data structures used to represent information stored on disk.
- **Buffer Manager :** It is responsible for fetching data from disk storage into main memory and deciding what data to cache in memory.

Disk Storage :

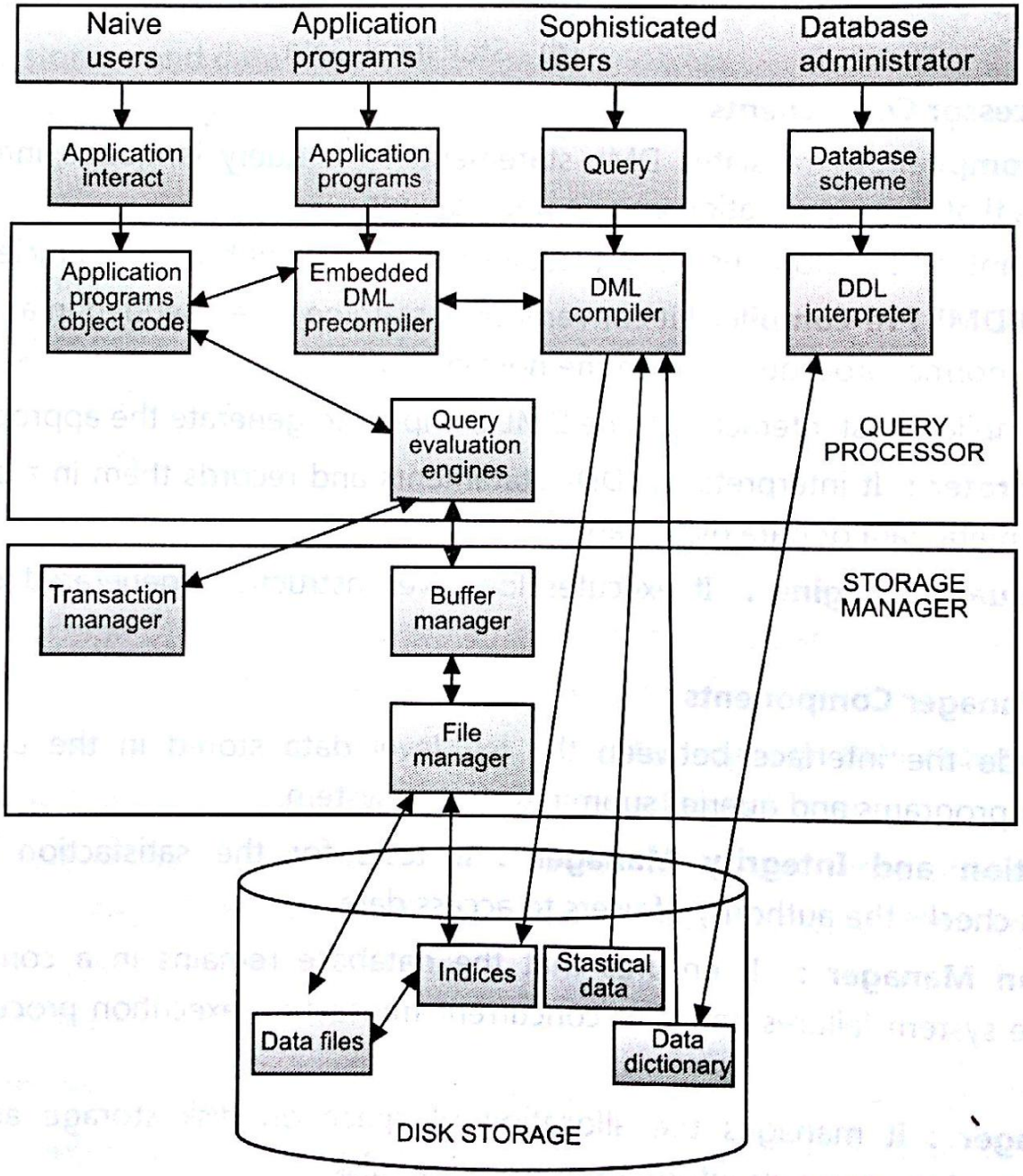
Following data structures are required as a part of the physical system implementation.

- **Data Files :** It stores the database.

- **Data Dictionary :** It stores meta data (data about data) about the structure of the database.

- **Indices :** Provide fast access to data items that hold particular values.

- **Statistical Data :** It stores statistical information about the data in the database. This information is used by query processor to select efficient ways to execute query.



System structure