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Database Systems

Date: _____

Assignment # 01

Q1.

a). File system has concurrent access issues, which means that multiple users cannot access the data at the same time. Data stored is redundant as two or more files can save the same data.
File systems provide no of security which may lead to leaking of data.

b). A composite key is a primary key that consists of two or columns used together to uniquely identify a record. For e.g. considering a library system, member_ID alone is not unique as a member can borrow multiple books. Book_ID alone is not unique as the same book can be borrowed by different members. However, member_ID and Book_ID can uniquely identify each row.

c). Application programs when using DBMS ρ can perform various operations: DDL (creating, altering tables), DML (insert, update, delete), Data control and Security and Transaction management.

d). Logical data independence is more difficult to achieve than physical data independence in three-schema architecture, because small changes in data, like adding a constraint unique requires an update query which might change the data structure as duplicates may already be stored.

e) A superkey is a set of attributes which uniquely identifies a tuple in a relation, while a key contains no Redundant attributes. E.g:

Table: Employee (ID, name, email)

Superkey: {ID, email}

key: {ID}