

ASSIGNMENT 1

Date: _____

Q1:

- (a) It is highly possible that same data is stored in multiple files. It also lacks data integrity enforcement. Moreover, it doesn't offer good security.
- (b) A composite primary key uses more than one column to uniquely identify a row.

example:

```
CREATE TABLE Courses(  
    CourseID INT,  
    StudentID INT,  
    EnrollmentDate DATE,  
    PRIMARY KEY (StudentID, CourseID)  
);
```

- (c)
- 1) User interface management.
 - 2) Translating user actions into queries and sending them to the DBMS.
 - 3) Ensures all constraints are satisfied.
 - 4) Ensures authorized access.
- (d) Logical data independence is more difficult because application programs often depend on conceptual schema, and changes in it affects external schemas too making it hard to keep applications unaffected.

(e) A superkey is a set of attributes which uniquely identifies a tuple in a relation, it may contain extra attributes, while a key contains no redundant attributes.

example:

Table: Person (ID, Name, Email)

Superkey: { ID, email }

Key: { ID }