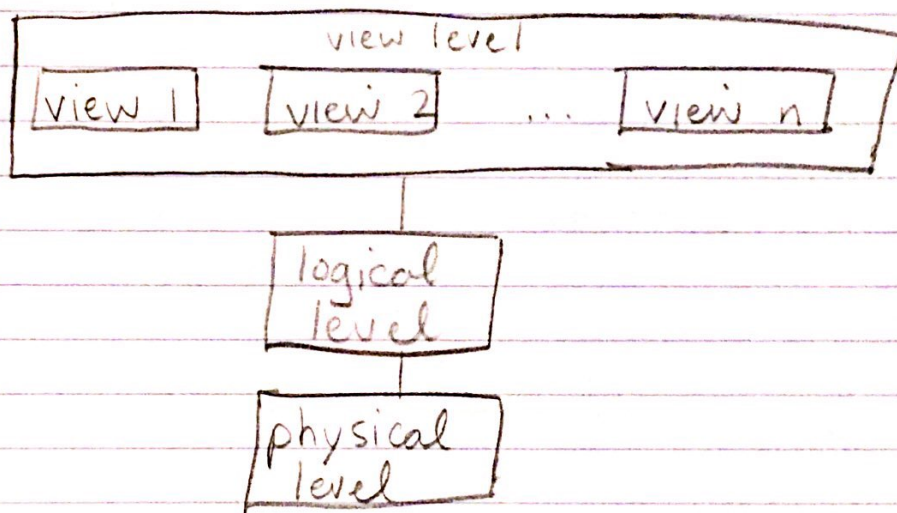


## DB system Advantages

- ① No data redundancy or inconsistency. One file format, no duplication of information.
- ② Ease of access. Performing a query will quickly return the requested information. No need to write a new program.



The main purpose of using this diagram is to visualize the architectural layout of a database.

The physical level describes how a record is stored.

The logical level describes data stored in the database and the relationships among the data.

The view level is where application programs hide details of data types.

Physical data independence is the ability to modify the physical schema without changing the logical schema. For example, modifying the file organization or storage structures shouldn't affect the conceptual or external schemas.

Logical data independence is the ability to change the logical schema without changing the external schema. For example, adding new entities, attributes, or relationships to the logical schema without changing the existing external schema.

③

(a) primary Key: sid

(b) sid: int (0-999)

name: string (1-12)

dept: string (ECE, MATH, CHEM, or CSC)

program: varchar (B.S., M.S., or Ph.D)

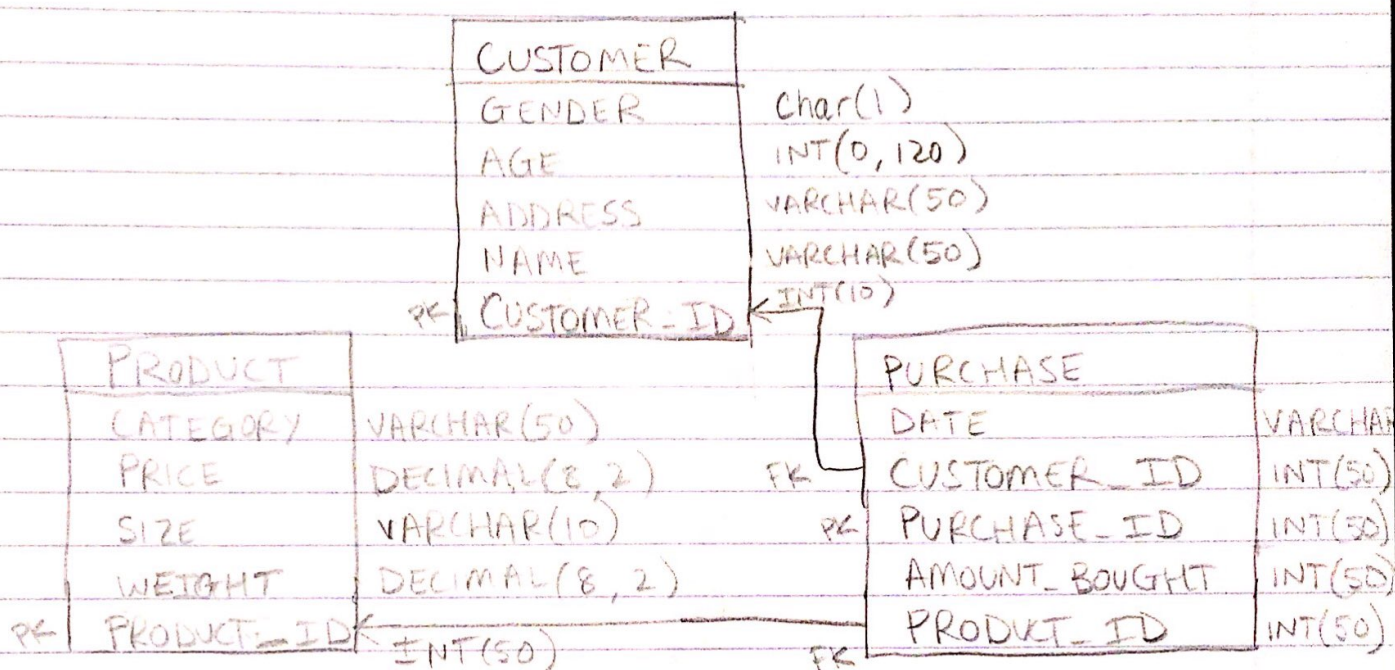
credit: int (0-248)

(c)

123	JOHN	B.S.	21
814	LAURA	B.S.	30



(4)



\* PK = Primary key

FK = Foreign key