Assignment - 1

Q1) Data independence is a key concept in database system that refers to the ability to modify a database schema at one level without affecting the schema at the most or next higher level. This is important in ensuring that the application programs are not tightly coupled to the structure of the data, allowing flexibility and adapting in managing changes. There are two types of data inpendence.

1) logical data Independence
2) physical data Independence

Logical Data Independence

- This refers to the ability to change the logical schema without affecting the external schema.
- Modification at logical level are neccessary whenever the logical structure of database is altered.
- Logical data independence means if we add some new columns or remove columns from table then user view or program should not change.

Physical Data Independence

- This refers to ability to modify physical schema without causing application programs to be rewritten
- Modification at physical level are occassionally necessary to improve importance.

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a	Generalization	Specialization
i)	Generalization uses a Bottom-Up approach	Specialization uses a top down approach
ii)	The size of the schema gets reduced in Generalization	The size of the schema gets increased in specialization
iii)	Generalization is usually applied to a group of entities	Specialization can be applied to a single entities
iv	The pratice of forming groupsings from diverse entity set is known as Generalization	The process of forming subgroups inside an entity set is known as specialization

b	Strong entity	Weak entity
i)	Thestrong entity has a primary key.	The weak entity has a partial discrimant key.
ii)	The strong entity is independant of any other entity in a schema	Weak entity depends on strong entity for its existence.
iii)	Strong entity is denoted by a single Rectange	Weak entity is denoted by a double rectangle
iv)	The Relation between two strong entities denoted by a single diamond simply called Relationship	The Relationship between a weak and a strong entity is denoted by double diamond.

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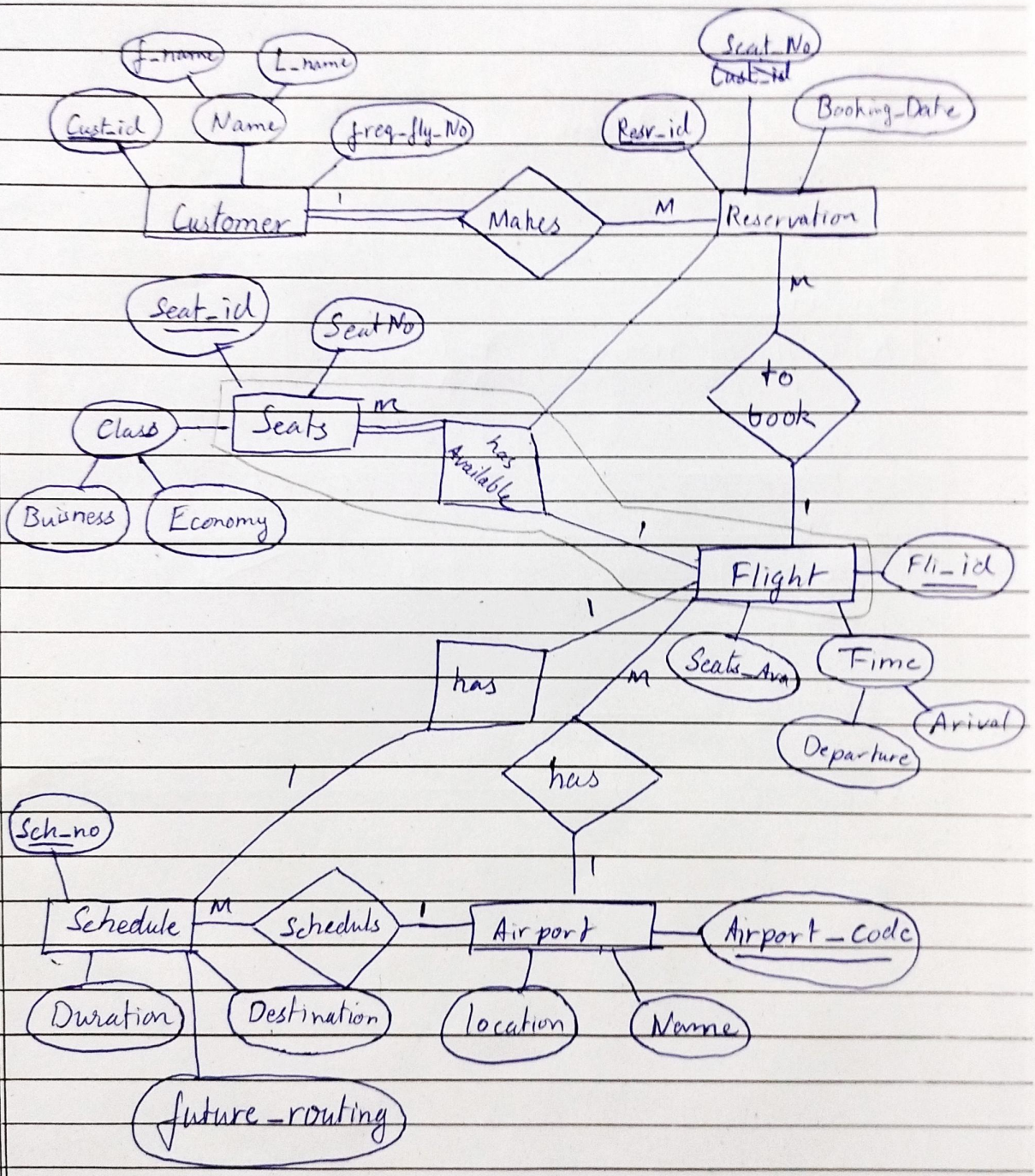
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Name
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Customer
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Seat_No
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Booking_Date
Reservation
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Class
Business
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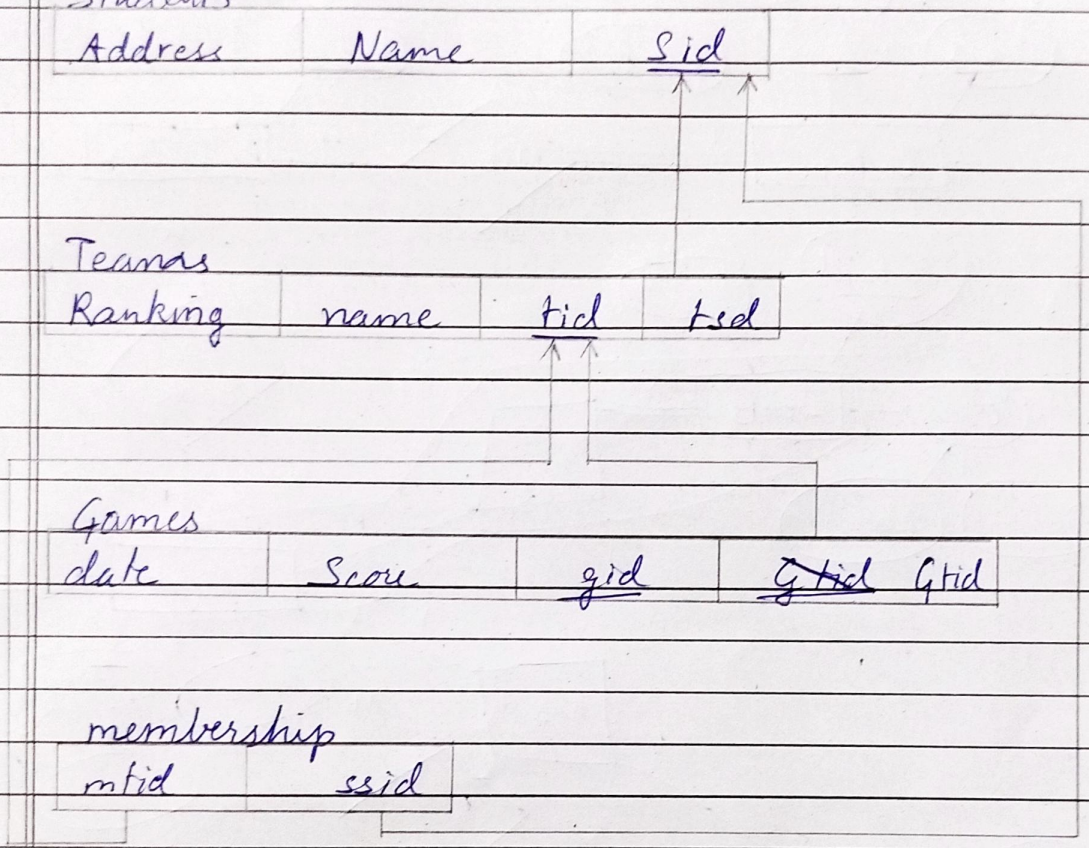
Destination
location
Name
future_routing

4→


Students
Address
Name
Sid
Teams
Ranking
name
tid
tsd
Games
date
Score
gid
Gtid
Gtid
membership
mtid
ssid

5 ->

Student

address	name	Stud_id	Sdept_id

Department

name	dept_id	no_of_faculty

Faculty

name	address	exp_years	fac_id	fdept_id

class

name	class_no	cstud_id	cfac_id