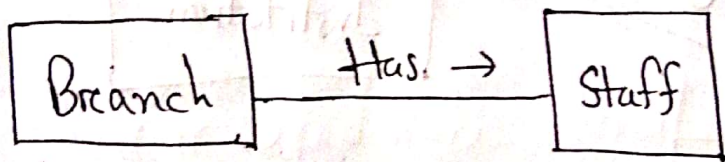Name: Sadia Afrin Tamanna

ID: 1812030042

Answer to the question no -1

(a)

Entity relationship type is a set of meaningful associations among entity types. ~~Is~~ Its occurance is uniquely identifiable association.
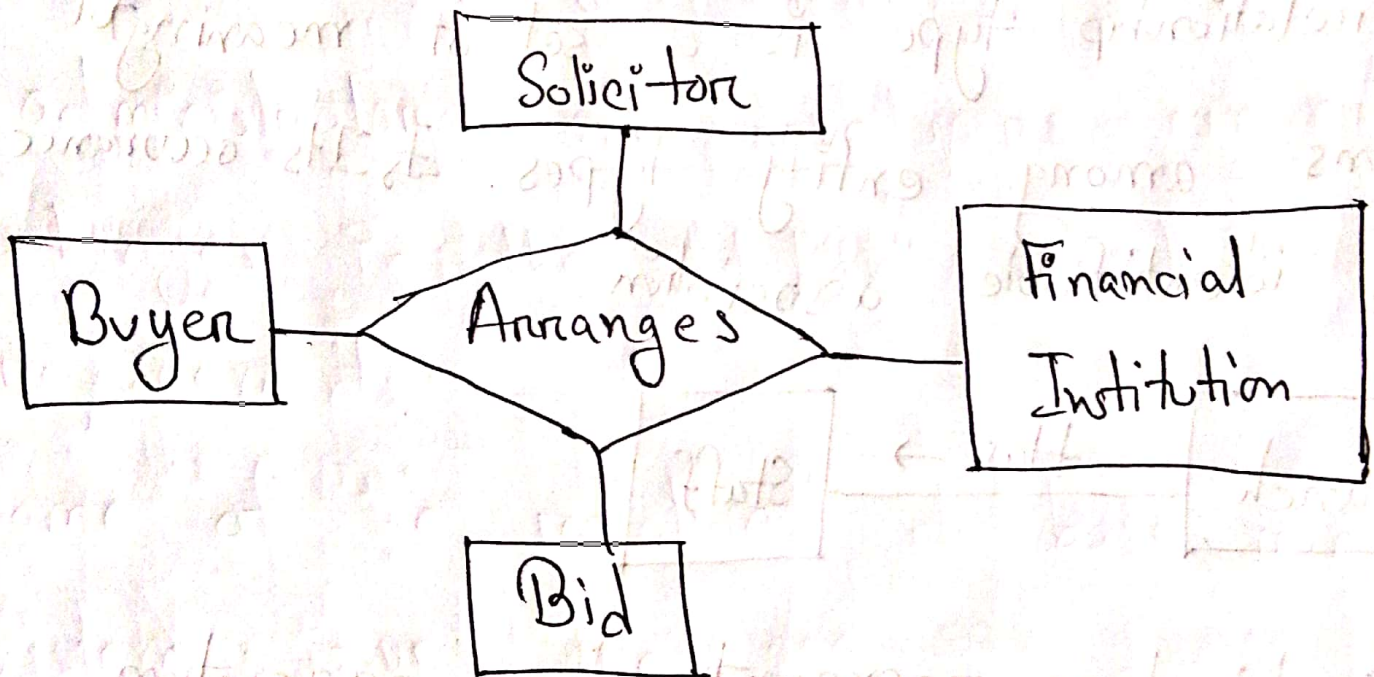

A entity relationship type represents the association between entity types.
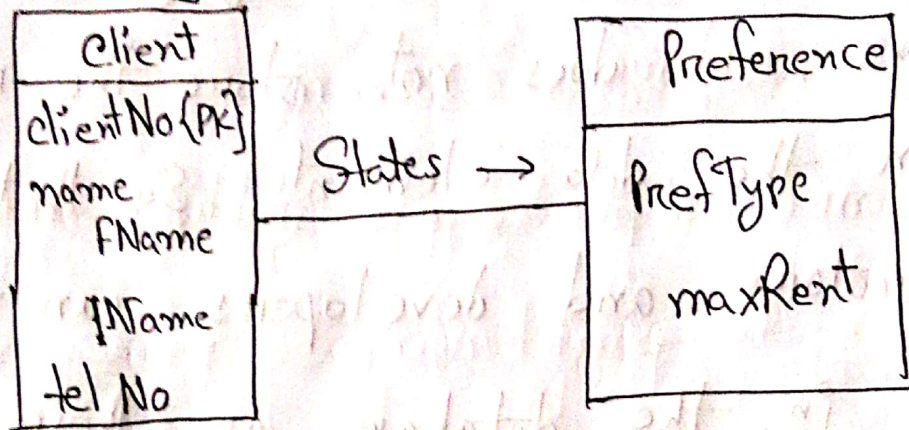
(b)

Degree of Relationship : The number of participating entity types in relationship. Relationship of degree two is binary and relationship of degree three is ternary

```
                    ┌──────────────┐
                    │  Solicitor   │
                    └──────────────┘
                           │
┌─────────┐          ◇──────────◇          ┌──────────────┐
│ Buyer   │──────── ◇ Arranges  ◇ ─────────│  Financial   │
└─────────┘          ◇──────────◇          │  Institution │
                           │               └──────────────┘
                    ┌──────────────┐
                    │     Bid      │
                    └──────────────┘
```
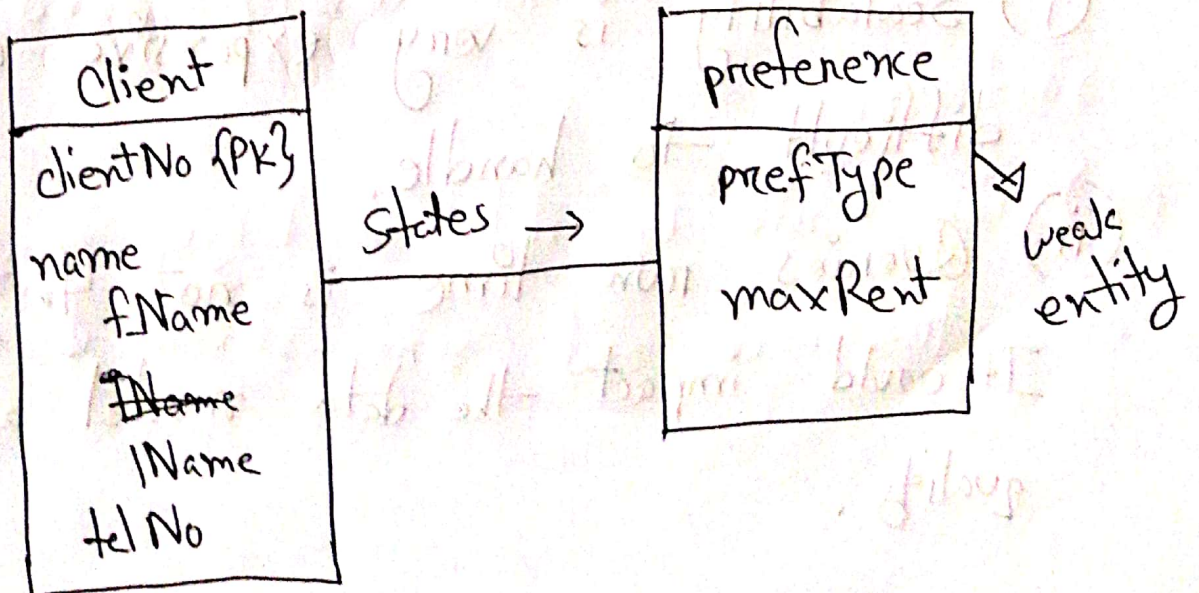
(c)

Strong Entity Type : An entity type that is not existence - dependent on some other entity type. is strong entity.

strong entity

Client
clientNo (PK)
name
fName
lName
tel No

States →

Preference
PrefType
maxRent

(d)

Weak Entity : An entity type that is existence-dependent on some other type. is weak entity.

Client
clientNo (PK)
name
fName
~~lName~~
lName
tel No

States →

preference
prefType
maxRent

weak entity

Answer to the question no - 2

(a)

★ The relational database management system is not suitable for the highly connected & because, it does not store the relationship between the data elements. So that, database administrators and developers can not bring changes in the database as their require requirements.

Some of the relational database management system issues are:

(i) Scalability: is very expensive and difficult to handle.

(ii) Queries run time is not fast enough. It could impact the data model and quality.

(iii) So, much complexity if data does not fit in the SQL server.

(iv) When many tables utilize queries for joining, it takes a higher response to time.

(v) Frequent changes in the database are not supported as the schemas are fixed in RDBMS.

(b)

when it comes to handle big data, there are many advantages.
The advantages of NoSQL is given below:

(i) It is cheap and easy to implement.

(ii) Easy to distribute

(iii) Don't require a schema.

(iv) Data are replicated to multiple nodes
and can be partitioned. So, no ~~sigr sig~~
single point of failure.

(v) The object is easy to use and adjustable.

(vi) NoSQL database are open source, that
means low cost for developing and sharing
software.

(vii) Can handle big data or large quantities.
of unstructured and semi-structured data.

Answer to the question no-3

(a)

2nd Normal Form (2NF): A relation that is in 1'st Normal form and every non primany-key attribut is fully functionally dependent on the primany key.

1NF

Module	Dept	Lectue	Text
M1	D1	L1	T1
M1	D1	L1	T2
M2	D2	L1	T1
M2	D1	L1	T3
M3	D1	L2	T4
M4	D2	L3	T1
M4	D2	L3	T5
M5	D2	L4	T6

2NFa

Module	Dept	Lectuner
M1	D1	L1
M2	D1	L1
M3	D1	L2
M4	DL	L3
M5	D2	L4

2NFb

Module	Text
M1	T1
M1	T2
M2	T1
M2	T3
M3	T4
M4	T1
M4	T5
M1	T6

(b)

3rd Normal form (3NF) : A relation which
is in 1st and 2nd Normal form and in
which no non-primary-key attribute is
transitively dependent on the primary key.

2NFa

Module	Dept	Lecturer
M1	D1	L1
m2	D1	~~L2~~ L1
m3	D1	~~L3~~ L2
m4	D2	L9
m5	D2	L4

3NFa

Lecture	Dept
L1	D1
L2	~~D2~~ D1
L3	D2
L4	D2

3NFb

Module	Lecturer
m1	L1
m2	L1
m3	L2
m4	L3
m5	L4

Answer to the question no – 4

(a)

Food

PK	Food_id
	Fname
	Price

Customer

PK	Cust_id
	Cname
	Phn-no
	Payment_id
FK	Package_id
	Amount

Promotional-Offers

PK	Package_id
FK	Food_id
	~~Price~~
	discount

Staffs

PK	staff_id
	SName
	job_position
	salary_id

		Chicken Burger		160

(b) Customer

101	Shihab	11111111111	201	301	200
102	Tamvir	2222222222	202	302	300
103	Tonmi	3333333333	203	null	400

Promotional_Offers

301	1	30%	
302	2	20%	
303	3	15%	

Staffs

1001	Jamal	Sales Person	501
1002	Kamal	manager	502
1003	Jamil	Chef sales Person	501

Food

1	Beef Burger	170
2	Pizza	300
3	Chicken Burger	160

It is in 2nd normal form (2NF)

(b)

Main entites | Food | Customer | Promotional-Offers | staffs

Food

Food_id	Fname	Price

Customer

Cust_id	Cname	Phn-no	Payment_id	Package-id	Amount

Promotional _ Offers

Package-id	Food-id	discount

Staffs

Staff_id	S SName	Job-position	Salary-id

Staff _ Salary

Job=position	Salary-id

transaction

cust_id	Amount	Food-id	Price	Date	invoice_no

staff_ Salary-log

Salary-id	salary	SDate	out voice_no