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1) B) In a relational database, a weak entity is an entity that cannot be uniquely identified by its attributes alone; therefore it must use a foreign key in conjunction with its attributes to create a primary key. The foreign key is typically a primary key of an entity it is related to.

Primary key: is a column or group of columns in a table that uniquely identify every row in that table. Ex - pan no.

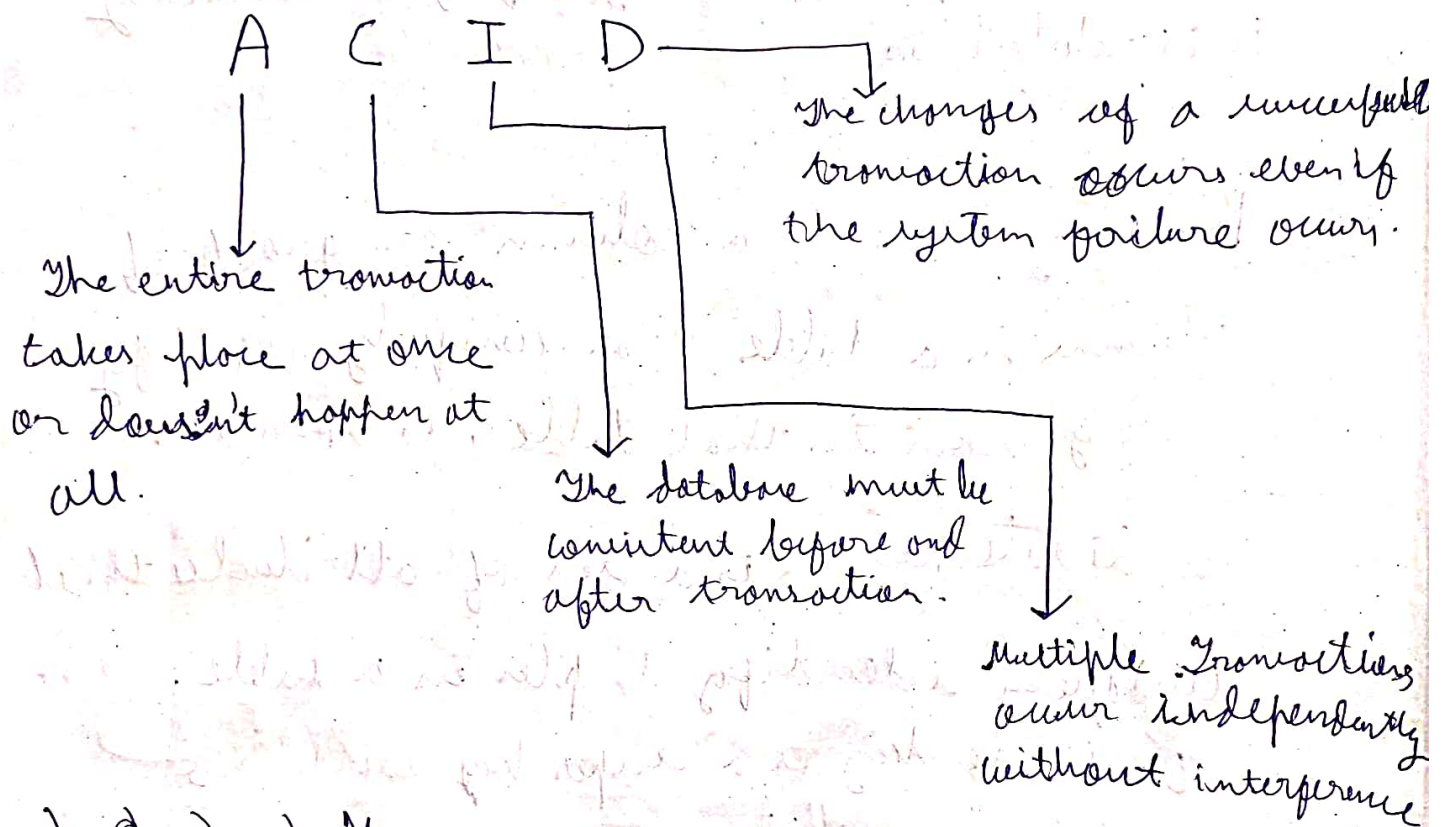
Candidate key: is a set of attributes that uniquely identify tuples in a table.

Candidate key is a super key with no repeated attributes.

Superkey: is a group of single or multiple keys which identifies rows in a table. A super key may have additional attributes that are not needed for unique identification.

2) A) m- ACID Properties

In order to maintain consistency in a database, before and after the transaction, certain properties are followed. These are called ACID Properties.



4) a) Yes,

The key for Teacher is formed by single column, i.e. Teacher-Name. All the attributes of Teacher can be determined uniquely by Teacher Name, as only teacher name attributed form the key. And there are no possibilities for partial key dependency. Here Teacher is in 2NF.

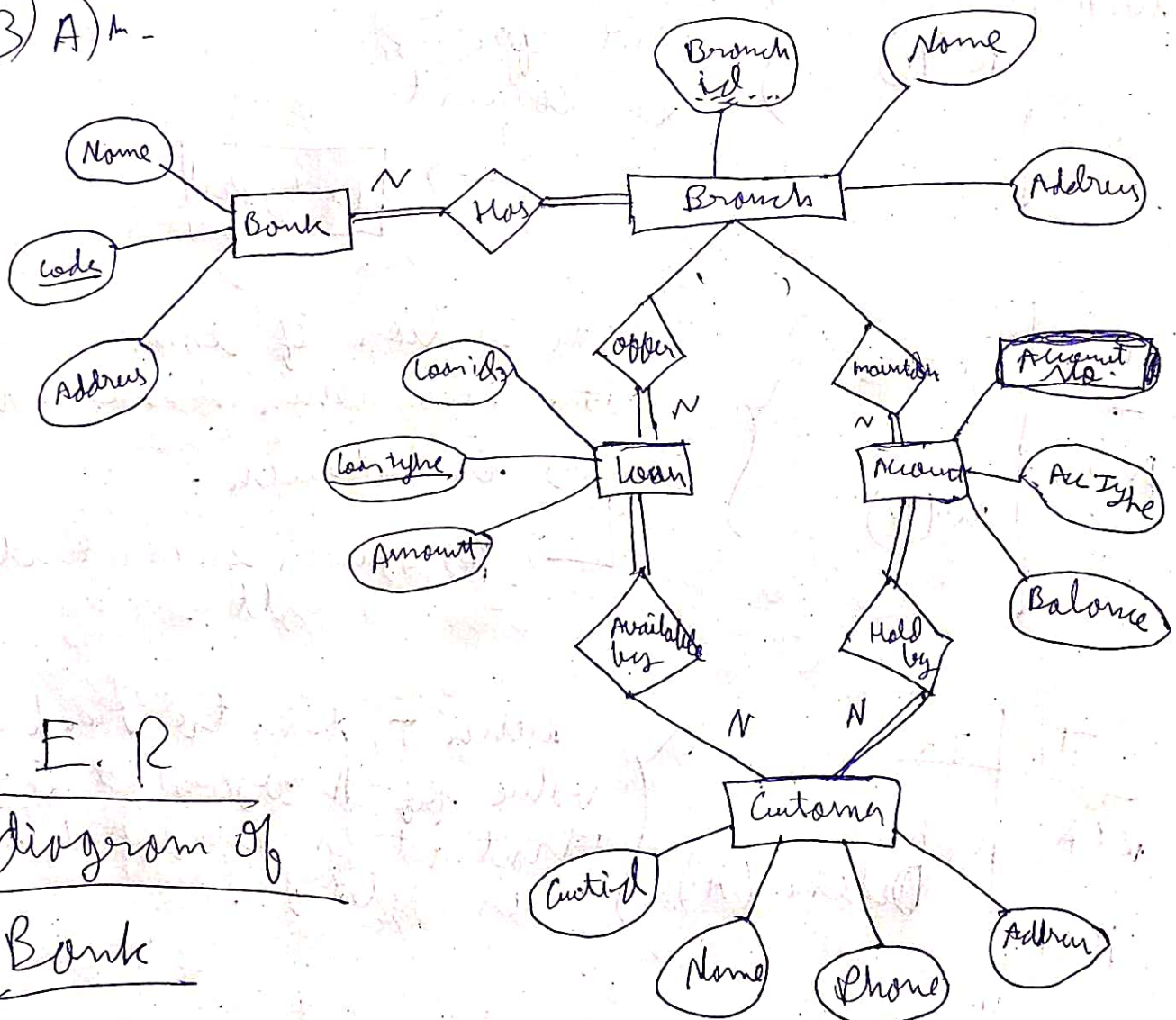
~~3) A) 6) h~~ 6) h No,

For a table in 3NF, it should be in 2NF and non key attributes dependencies must not be present from PK, it is clear that the table is in 2NF.

Teacher is not in 3NF coz, of non key dependency. School Name \rightarrow School location.

~~3) A) 6) h~~

3) A) h -



E. R
Diagram of
Bank

5) A)

(i)

	T_1	T_2	T_3
$w(A)$	$w(A)$	$w(A)$	$w(A)$
c	c	c	c

chain of reads

even if it's considered,
the work goes in vain;
time's wasted

branch

even if there's a
chain of reads,
it's cascading.

T_1	T_2
$w(A)$	$R(A)$
c	

T_2 does not
wait for T_1
to commit

→ Dirty Read

T_1	T_2
$w(A)$	$w(A)$

write action of some
data item when there's no
read in between.

→ Produces inconsistent
result.

T_1	T_2
$R(A)$	$R(A)$
$R(A)$	Delete(A)

when T_1 tries to read the
value of A again it finds
that it's undefined. A
is deleted.

Phantom
Read

not being executed by
following relation.

6) A) Given data of 10 boys \Rightarrow 70, 120, 110, 101, 88, 83,
95, 98, 107, 100.

So, their mean = $\frac{\text{Sum of all values}}{\text{No. of total values}}$.

$$\text{mean} = \frac{70 + 120 + 110 + 101 + 88 + 83 + 95 + 98 + 107 + 100}{10}$$

$$= \frac{996}{10} = 99.6$$

Assumption of mean is 160

hence, there are not equal.