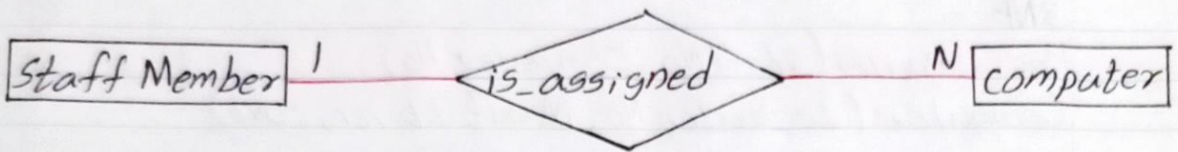


Normalization

Decomposing unsatisfactory bad relations by breaking them into smaller relations.



Has Computer (staff Number, Manufacturer, Cost)

Q1 Has computer (staff No, Computer No, Manufacturer, Cost)

Has computer

Staff No	Computer No	Manufacturer	Cost
100	C1, C2	Dell, HP	11kh, 21kh
200	C3	HP	41kh

Annotations: A red arrow labeled 'full' points to the Staff No column. A blue arrow labeled 'ONE' points to the Cost column. A red arrow labeled 'full' points to the Computer No column.

1. Explain why the above table design is not suitable.

It has multivalued attributes (Computer No, Manufacturer, Cost) which can lead to many data anomalies. (deletion, updating).

Has-Computer

Staff No	Computer No.	Manufacturer	Cost.
100	C1	Dell	11kh
100	C2	HP	21kh
200	C3	HP	41kh

Annotations: A red arrow labeled 'Prime attribute.' points to Staff No. A red arrow labeled 'non-Prime attribute.' points to Cost. A red arrow labeled 'Partial' points to Manufacturer. A blue arrow labeled 'INF' points to the table. Text on the right: 'Functional Dependencies', '1. Partial', '2. Transitive', '3. Full'.

* The entire prime attribute(s) decides a non prime attribute(s)

No: _____

Date: ____/____/____

2NF

Hascomputer (staff No, Computer No)

Computer (computer No, Manufacturer, cost)

3NF

Has Computer (staff No, Computer No)

Computer (computer No, Manufacturer, cost)

<u>NIN</u>	<u>Contract No</u>	hours	e Name	hNo	hLoc
1135	C1024	16	Smith J	H25	East Kilbride
1057	C1024	24	Hocine D	H25	East Kilbride
1068	C1025	28	White T	H4	Glasgow
1135	C1025	15	Smith J	H4	Glasgow

1NF

Employee Contract (NIN, contract No, hours, e Name, hNo, hLoc)

Partial (from NIN to hNo and hLoc)
 full (from NIN to contract No and hours)
 transitive (from contract No to hNo and hLoc)

2NF

Contract (Contract No, hNo, hLoc)

transitive (from Contract No to hNo and hLoc)

Employee (NIN, eName)

Employee Contract (NIN, Contract No, hours)

3NF

Contract (Contract No, hNo)

Employee (NIN, eName)

Employee Contract (NIN, Contract No, hours)

Hotel (hNo, hLoc)