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S2G1

Lab 6 Exercise Normalization

1) a)

Insertion Anomaly

- Insertion anomaly creates a dummy data problem. When a new employee needed to be registered in the system the entry immediately needs a contract, meaning that there can never be employee on standby.

Modification Anomaly

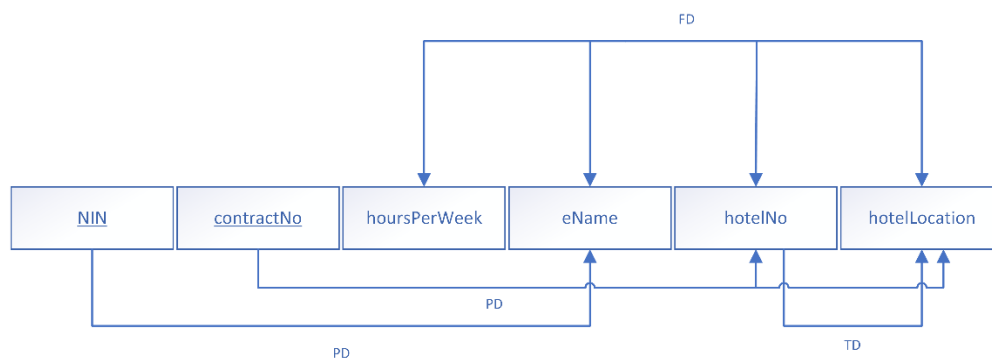
- Modification anomaly creates redundancy of updating multiple rows of same data. When the system needs to update an employee name, it also requires to update every row that occupies the name.

Deletion Anomaly

- Deletion anomaly forces unwanted data to be deleted with wanted data. If an employee quits their job, deleting the employee data will delete contracts aswell.

b)

1NF




2NF

<u>NIN</u>	eName
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Table name: EMPLOYEE

<u>contractNo</u>	hotelNo	hotelLocation
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graph LR; contractNo --> hotelNo; hotelNo --> hotelLocation; contractNo -.-> hotelLocation
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Table name: CONTRACT

<u>NIN</u>	<u>contractNo</u>	hoursPerWeek
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Table name: ASSIGNMENT

3NF

<u>NIN</u>	eName
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Table name: EMPLOYEE

<u>contractNo</u>	<u>hotelNo</u>
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Table name: CONTRACT

<u>NIN</u>	<u>contractNo</u>	hoursPerWeek
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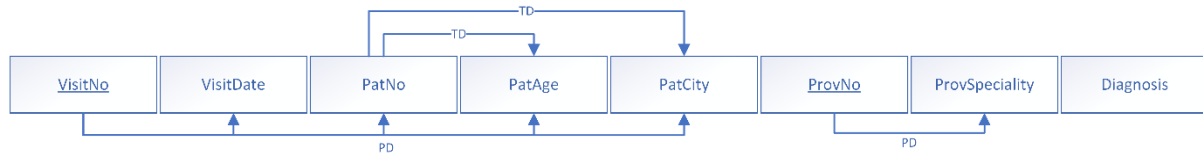
Table name: ASSIGNMENT

<u>hotelNo</u>	hotelLocation
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Table name: HOTEL

2)

1NF



2NF



Table name: VISIT



Table name: PROVIDER

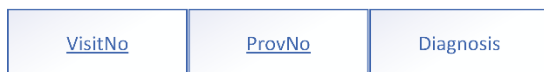


Table name: DIAGNOSIS

3NF

<u>VisitNo</u>	VisitDate	PatNo
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Table name: VISIT

<u>ProvNo</u>	ProvSpecialty
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Table name: PROVIDER

<u>VisitNo</u>	<u>ProvNo</u>	Diagnosis
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Table name: DIAGNOSIS

<u>PatNo</u>	PatAge	CityNo
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Table name: PATIENT

<u>CityNo</u>	CityName
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Table name: CITY

3) a)

Insertion Anomaly

- When more than one course served for a dinner the primary key of Dinner Num will repeat itself.

Modification Anomaly

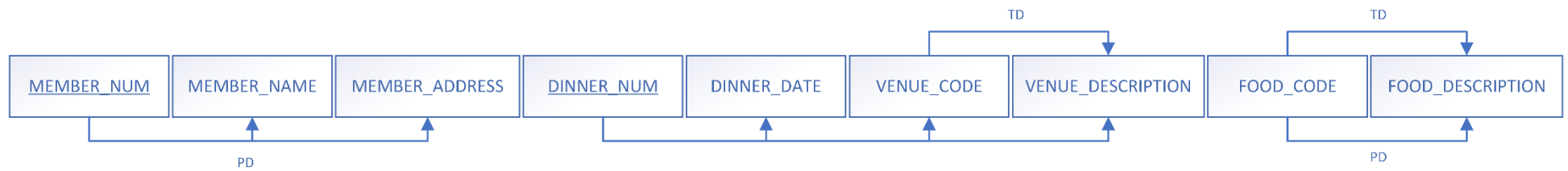
- Changing a venue description will force changes to every venue with the same name.

Deletion Anomaly

- Deleting a member entry will also deletes other data such as dinner information

b)

1NF



2NF

<u>MEMBER_NUM</u>	MEMBER_NAME	MEMBER_ADDRESS
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Table name: MEMBER

<u>DINNER_NUM</u>	DINNER_DATE	VENUE_CODE	VENUE_DESCRIPTION
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A diagram showing a transitive dependency (TD) from VENUE_CODE to VENUE_DESCRIPTION. A line connects the two columns, with 'TD' written above it and an arrow pointing from VENUE_CODE to VENUE_DESCRIPTION.

Table name: DINNER

<u>FOOD_CODE</u>	FOOD_DESCRIPTION
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Table name: FOOD

<u>MEMBER_NUM</u>	<u>DINNER_NUM</u>	<u>FOOD_CODE</u>
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Table name: RESERVE

3NF

<u>MEMBER_NUM</u>	MEMBER_NAME	MEMBER_ADDRESS
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Table name: MEMBER

<u>DINNER_NUM</u>	DINNER_DATE	VENUE_CODE
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Table name: DINNER

<u>FOOD_CODE</u>	FOOD_DESCRIPTION
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Table name: FOOD

<u>MEMBER_NUM</u>	<u>DINNER_NUM</u>	<u>FOOD_CODE</u>
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Table name: RESERVE

VENUE_CODE	VENUE_DESCRIPTION
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Table name: VENUE