Normalisation (BCNF)

1:-

CUSTOMER

CID	TITLE	FNAME	MINIT	LNAME	ADDRESS	CONTACT NO.	EMAIL	WAITERID

FDs:-

CID ⟹ TITLE, FNAME, MINIT, LNAME, ADDRESS, CONTACT NO., EMAIL, WATERID

KEY = CID

DETERMINANT IS KEY HENCE RELATION IS IN BCNF

2:-

RELATIVES

CID	RELATIVE-NAME	SEX	RELATIONSHIP

FDs:

CID, RELATIVE-NAME ⟹ SEX, RELATIONSHIP

Key= CID, RELATIVE-NAME

DETERMINANT IS KEY HENCE RELATION IS IN BCNF

3:-

CITY

ZIP	NAME	STATE

FDs:

ZIP ⟹ NAME, STATE

KEY = ZIP

DETERMINANT IS KEY HENCE RELATION IS IN BCNF

4:-

HOTEL

HOTELID	NAME	ZIP	ADDRESS	RATING

FDs:-

HOTELID ⟹ NAME, ADDRESS, RATING, ZIP

KEY = HOTELID

DETERMINANT IS KEY HENCE RELATION IS IN BCNF

5:-

WAITER

WAITERID	WAITER-NAME	HOTELID

FDs:

WAITERID ⟶ WAITER-NAME, HOTELID

KEY= WAITERID

DETERMINANT IS KEY HENCE RELATION IS IN BCNF

6:-

ROOM

HOTELID	RNO.	TYPE	FLOOR	PRICE

FDs:-

1- HOTELID, RNO ⟶ TYPE, FLOOR, PRICE

2- TYPE ⟶ PRICE

KEY = HOTELID, RNO

FD-2 IS VIOLATING BCNF CONDITION

BCNF DECOMPOSITION

MIMIMAL SET OF FDs:

HOTELID, RNO ⟶ TYPE, FLOOR

TYPE ⟹ PRICE

R1

TYPE	PRICE

R2

HOTELID	RNO	TYPE	FLOOR

7:-

RESERVATION

CID	RNO.	CHECK-IN	CHECK-OUT	HOTELID

FDs:-

CID, RNO, HOTELID ⟶ CHECK-OUT, CHECK-IN

KEY= CID, RNO, HOTELID

DETERMINANT IS KEY HENCE RELATION IS IN KEY

8:-

OFFER

CID	HOTELID	OFFERID	OFFER_NAME	START-DATE	END-DATE	DISCOUNT

FDs:-

1- CID, HOTELID ⟶ OFFERID

2- OFFERID ⟶ OFFER-NAME, STARTDATE, ENDDATE, DISCOUNT

KEY=CID, HOTELID

FD 1 AND 2 IS VOILATING BCNF CONDITION

BCNF DECOMPOSITION

R1

OFFERID	OFFERNAME	STARTDATE	ENDDATE	DISCOUNT

R2

CID	HOTELID	OFFERID

9:-

ITEM

ITEMID	ITEM_NAME	PRICE(PER-UNIT)

FDs:-

ITEMID ⟶ ITEMNAME, PRICE

KEY= ITEMID

DETERMINANT IS KEY HENCE RELATION IS IN BCNF

10:-

ORDER

CID	ITEMID	QUANTITY	DATE

FDs:-

CID, ITEMID ⟶ QUANTITY, DATE

KEY= CID, ITEMID

DETERMINANT IS KEY HENCE RELATION IS IN BCNF

11:-

BILL

BILLID	DATE	PAYMENTMODE	CID

FDs:-

BILLID ⟶ DATE, CID, PAYMENTMODE

KEY=BILLID

DETERMINANT IS KEY HENCE RELATION IS IN BCNF