

Question 1

Normalize the following relation:

STUD_ID : Student's Id number (unique)
 NAME : Name of student
 BATCH_NO : Batch number (student can belong to only one batch)
 SLOT : Time and day during which the batch of students attends class
 MODULE: : Module or subject (one batch will do several modules)
 MARKS : Marks obtained in a module test

STUDENTS	SLOT	BATCH	TEST
STUD_ID	SLOT_ID	BATCH_NO	MODULE
NAME	DAY	SLOT_ID	STUD_ID
BATCH_NO	TIME		MARKS

Table Name: STUDENTS		
STUD_ID	NAME	BATCH_NO
(Student's ID number(unique))	Name of Student	Batch number

Table Name: SLOT		
SLOT_ID	DAY	TIME
(Slot's ID number)	(Day of a particular slot)	(Timing of a particular slot)

Table Name: BATCH	
BATCH_NO	SLOT_ID
(Batch number of a particular batch)	(Slot's ID number)

Table Name: TEST		
MODULE	STUD_ID	MARKS
(Module of a subject)	(Student's ID number)	(Marks Obtained in a module)

Question 2

In any payroll system it is normal to retain a copy of the pay-slip printed for each employee. A sample pay-slip is reproduced here:

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XYZ Co.

MONTH: APRIL '2019

NAME	:	JOHN DOE	EARNINGS		DEDUCTIONS				
EMPNO	:	083	BASIC	:	1400	CPP Contrib	:	10%	
GRADE	:	A3	HRA (40%)	:	560	CPP Amount	:	140	
BASIC	:	1400	CCA (10%)	:	140				
LEAVE	Availed	Balance							
CL	:	4	8						
EL	:	4	6	Total	:	2100	Total	:	140
LWP:	-	-					NET PAY	:	\$1960.00

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Note: CL – Casual Leave

EL – Earned Leave

LWP – Leave without Pay

EMPLOYEE	PAY_SLIP	EARNINGS	DEDUCTION	LEAVE
EMPNO	PAY_SLIPNO	EARNINGID	DEDUCTIONID	LEAVEID
NAME	BASIC	TYPE	TYPE	TYPE
GRADE	EARNINGID	AMOUNT	AMOUNT	TOTAL_LEAVE
SLIPNO	LEAVEID			
	DEDUCTIONID			
	NET_PAY			

Table Name: EMPLOYEE			
EMPNO	NAME	GRADE	SLIPNO
(Employee's number(unique))	Name of an Employee	Grade of an Employee	(Employee's Slip number)

Table Name: PAY_SLIP					
PAY_SLIPNO	BASIC	EARNINGSNO	LEAVENO	DEDUCTIONNO	NET_PAY
(Pay Slip number of an Employee)	Basic Pay of an Employee	Earning ID of an Employee	(Employee's Leave number)	(Deduction of an Employee)	(Total NET PAY of an Employee)

Table Name: EARNINGS		
EARNINGSNO	EARNING_TYPE	EARNING_AMOUNT
(Earning ID of an Employee)		(Total Amount Earned)

Table Name: DEDUCTION		
DEDUCTIONSNO	DEDUCTION_TYPE	DEDUCTION_AMOUNT
(Deducting ID of an Employee)	(Deduction Type)	(Total Deduction Amount)

Table Name: LEAVE		
LEAVENO	LEAVE_TYPE	TOTAL_LEAVE
(Employee's Leave number)	(CL, EL, LWP)	(Total Leave)

Give the third normal form for the table structure(s) that would hold the pay-slip data shown above.

Question 3

The Bill table contains:

Bill No
Customer Name
Date
Item No
Quantity
Rate
Value
Discount Rate
Discount Amount
Net amount

The Customer table has:

Customer Name
Address
Customer Rating
Phone Number
Contact Person

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CUSTOMER RATING	DISCOUNT RATE
A	5%
B	3%
C	1%
D	NIL
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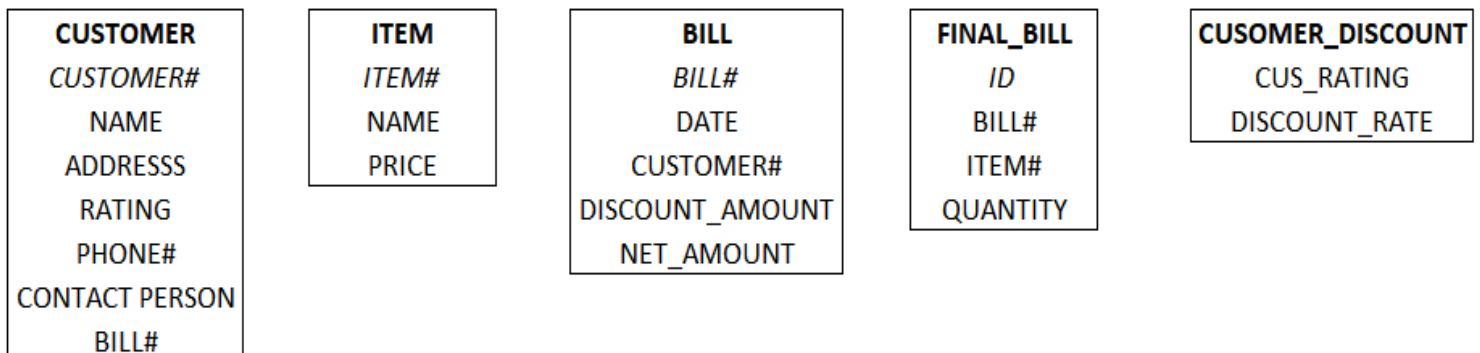


Table Name: CUSTOMER						
CUSTOMER#	NAME	ADDRESS	RATING	PH#	CONTACT PERSON	BILL#

Table Name: ITEM		
ITEM#	NAME	PRICE

Table Name: BILL				
BILL#	DATE	CUSTOMER#	DISCOUNT_AMOUNT	NET_AMOUNT

Table Name: FINAL BILL			
ID	BILL#	ITEM#	QUANTITY

Table Name: CUSTOMER_DISCOUNT	
CUSTOMER_RATING	DISCOUNT_RATE