Name : Sufyan Ahmad

ID : 13062

Program : BS.SE

Final Paper Summer 2020

Course Title: Database Systems

Instructor: Rimsha Khan

Total Marks: 50

Q1: Perform Normalization upto 3 rd Normal Form on the following table. (13marks)

Student_id	Student Name	Student Address	Course_ID	Course_Name	Grade
01	Fawad	Karachi	SE-01	AI	A
			SE-05	SQE	B
02	Waleed	Lahore	SE-02	DIP	C
03	Saira	Peshawar	SE-03	DB	A
			SE-04	SRE	B
04	Aiman	Karachi	SE-03	DB	C
05	Daniyal	Lahore	SE-01	AI	A
06	Emaan	Peshawar	SE-01	AI	B

Answer :

1NF :

Student_Grade_Report (StudentNo 01 , StudentName Fawad, CourseNo SE-01, SE-05, CourseName AI, SQE , StudentLocation Karachi, Grade A , B)

Student_Grade_Report (StudentNo 02 , StudentName Waleed , CourseNo SE-02 , CourseName DIP , , StudentLocation Lahore , Grade C)

Student_Grade_Report (StudentNo 03 , StudentName saira , CourseNo SE03, SE-04 , CourseName DB , SRE , , StudentLocation Peshwar , Grade A,B)

Student_Grade_Report (StudentNo 04 , StudentName Aiman , CourseNo SE- 03 , CourseName DB , , StudentLocation Karachi , Grade C)

Student_Grade_Report (StudentNo 05 , StudentName Daniyal , CourseNo SE-01 , CourseName AI , , StudentLocation Lahore , Grade A)

Student_Grade_Report (StudentNo 06 , StudentName Emaan , CourseNo SE-01 , CourseName AI , , StudentLocation Peshwar , Grade B)

2NF :

Student (StudentNo 01 , 02 ,03,04,05,06 , StudentName Fawad,Waleed,Sira,Ainam,Daniyal,Emaan)

CourseGrade (StudentNo 01,02,03,04,05,06, CourseNo SE- 01,02,03,04,05, Grade A,B,C,A,B,C,A,B)

CourseInstructor (CourseNo SE- 01,02,03,04,05, CourseName AL,SQE,DIP,BD.SRE,DB,AL,AL, StudentLocation Karachi ,Lahore,peshwar)

3NF :

Student (StudentNo 01 , 02 ,03,04,05,06 , StudentName Fawad,Waleed,Sira,Ainam,Daniyal,Emaan)

CourseGrade (StudentNo 01,02,03,04,05,06, CourseNo SE- 01,02,03,04,05, Grade A,B,C,A,B,C,A,B)

Course (CourseNo 01,02,03,04,05, CourseName AL,SQE,DIP,BD.SRE,DB,AL,AL)

Student (StudentNo 01 , 02 ,03,04,05,06 , StudentName Fawad,Waleed,Sira,Ainam,Daniyal,Emaan , Studentloction Karachi ,Lahore,peshwar)

Q2: Write SQL queries for the following DDL Statements

1. Write a query to create a table by the name Students which should have the following columns and restrictions: (Marks 10)

Column Name: ID Type: integer

Column Name: Student_Name Type: varchar

Column Name: DOB Type: DATE

Column Name: Age Type: Integer

Column Name: CGPA Type: float

Restrictions: ID should be the primary key. Student_Name should also be NOT NULL. Maximum value of age should be 30 years.

ANSWER :

CREATE TABLE Students (ID INT PRIMARY KEY NOT NULL, Student_Name VARCHAR(32) NOT NULL ,

DOB DATE,

Age INT

check(Age <= 30),

CGPA FLOAT)

2. Write 2 SQL DML Queries to insert your data and your friend's data in this Table. (4 marks)

ANSWER :

NSERT DATA (Name,Id,DOB,Sex,Hight,Address)

VALUE ('sufyan ','13062','15-04-1998','Male','5.5','Peshawar'),

VALUE ('adil','4838','24-05-1998','Male','4.5','marwat')

3. Which of the given attributes is a derived attribute and from which attribute it can be derived? (5 marks)

ANSWER :

Student name sufyan ----------

student age 22----------

student id 13062 ---------- (student)

student DOB 15-04-1998----------

student phone 112222344---------

Q3: Consider you have the following 2 tables.

Canteen_Table

Product_ID	Product_Name	Category	Mfg_Date	Exp_Date	Unit Price
01	Dairy milk Chocolate	Junk	2, Aug 2019	2, Aug 2020	80 Rs
02	Lipton Tea bags	Not Junk	2 Jan 2019	2 Jan 2020	160 Rs
03	Kurkure	Junk	2 April 2019	2 April 2021	30 Rs
04	Shezan Juice	Junk	3 Aug 2019	3 Aug 2020	30 Rs
05	Chilli Milli Jelly	Junk	3 Jan 2018	3 Jan 2021	5 Rs
06	Olpers Milk	Not Junk	3 April 2018	3 April 2020	350 Rs

Order_Details

Order_Id	Product_ID	Unit Price	Quantity
01	02	160 Rs	1
01	06	350 Rs	1
02	01	80 Rs	2
02	03	30 Rs	2
02	05	5 Rs	2

1. Write SQL Query for finding/displaying product names and ids of products whose unit price is less than 50 Rs. (4 Marks)

ANSWER :

```
SELECT Product_Name,ID FROM Canteen_Table WHERE Unit_Price < 50
```

2. Write SQL Query for displaying sorted names of product names with Alias name as Product_List_Sorted. (5 Marks)

ANSWER :

```
select * from Canteen_Table order by Product_Name ASC
```

3. Delete data from Order_Details whose quantity is less than 1. (4 marks)

ANSWER :

```
delete FROM Order_Details WHERE Quantity < 1
```

4. Write SQL INNER JOIN query and its output on the given two tables. (5 marks)

ANSWER :

```
select * from Canteen_Table ct
 inner join Order_Details od on
ct.Product_ID = od.Product_ID
```