CS 3311 Database Management Systems

**Final Exam**

Start: 2pm on Dec 8, 2021  
End: 2pm on Dec 9, 2021

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1. The following tables of a music shop have been given. Write a query to determine how many Jazz songs have been sung by “Andrew” in 2020.

***Singer <SingerID, Name, Age, City>***

***Album <AlbumID, AlbumName, SingerID, year>***

***Song <AlbumID, SongName, Genre>***

If you only want a count of the songs:

SELECT COUNT(\*) AS NumSongs FROM Song

INNER JOIN Album

ON Song.AlbumID = Album.AlbumID

INNER JOIN Singer

ON Singer.SingerID = Album.SingerID

WHERE Singer.Name = 'Andrew'

AND Song.Genre = 'Jazz'

AND Album.year = 2020;

If you want more information:

*(continued on next page)*

SELECT

Song.SongName, Song.AlbumID, Song.SongName, Album.AlbumName, Album.year

FROM Song

INNER JOIN Album

ON Song.AlbumID = Album.AlbumID

INNER JOIN Singer

ON Singer.SingerID = Album.SingerID

WHERE Singer.Name = 'Andrew'

AND Song.Genre = 'Jazz'

AND Album.year = 2020;

1. A company wants to raise the salary of its employees if they are paid less than 3000$/month and have a weekly hours of greater than 35. The raise will be 150$ plus 10% of the current salary of the employee. However, the manager noticed that some employees have less than 5 weekly hours. He decided to get the list of those employees together with their contact details to invite them to a meeting. Write the necessary queries to update the salaries and print the names of employees who will be invited to a meeting with their employer. Use the Employee table below for your queries.

***Employee <ID, name, surname, weekly\_hour, salary, phone, email>***

UPDATE `Employee`

SET salary = salary + (salary \* 0.1) + 150

WHERE

salary < 3000

AND

weekly\_hour > 35;

SELECT

name,

surname,

weekly\_hour as hours,

phone,

email

FROM Employee

WHERE weekly\_hour < 5;

1. The following ER diagram is given Write the necessary queries to convert it to SQL tables,



CREATE TABLE IF NOT EXISTS `Customer`(

CustomerId INT PRIMARY KEY AUTO\_INCREMENT,

Name VARCHAR(255) NOT NULL,

City VARCHAR(255)

);

CREATE TABLE IF NOT EXISTS `Account`(

ID INT PRIMARY KEY AUTO\_INCREMENT,

Balance DOUBLE NOT NULL,

CustomerID INT NOT NULL REFERENCES Customer(CustomerID)

);

CREATE TABLE IF NOT EXISTS `Branch`(

ID INT PRIMARY KEY AUTO\_INCREMENT,

Name VARCHAR(255) NOT NULL,

City VARCHAR(255) NOT NULL

);

CREATE TABLE IF NOT EXISTS `Account\_Branch`(

AccountID INT NOT NULL,

BranchID INT NOT NULL,

FOREIGN KEY (AccountID) REFERENCES Account(ID),

FOREIGN KEY (BranchID) REFERENCES Branch(ID)

);

1. A shoe-selling company gets orders from its clients to deliver shoes to their addresses. The company has different types of shoes having different colors and sizes. A client may order multiple pairs of shoes in a single order. Draw the ER diagram of this application. List the entities and the relationships. Determine the type of the relationship.

