VICTORIA UNIVERSITY OF WELLINGTON
TE HERENGA WAKA

SQL Assignment 3 2020 T1(18%)

IMPORTANT

(1) Use the SQL syntaxes that are taught in lectures and workshops. Other syntax will not be accepted. Ask a tutor if you are not sure.

(2) Use the join syntax below for an inner join. Other syntax will not be accepted.

SELECT *column-list*
FROM *table* 1 JOIN *table* 2 ON *joint-condition*
Where *conditions*

(3) For numeric, use "=" sign, for example "percent_time =100" not "percent_time IS 100".

(4) Some questions may need to use subquery.

1. In the loan table, items that are still on loan appear as NULL in the "checkedin" column. For the items still on loan, write the SQL using subquery to find the MediaID which has a maximum total replacement cost and the total number of loans. The total replacement cost is the sum of the replacement cost for the items on loan. (Note: You may need multiple subquery)

MediaID	Maximum Total Replacement Cost	Total Number of loans

2. Use the SQL subquery method to show the total number of students with an average overdue fee less than twice the average overdue fee of 'Soing, Kim'. An example of the result is shown below. (Note: You can put a subquery as a field in the main select statement).

Total Number of Students	Kim Average Overdue Fee
6	11.5

3. Write the SQL using subquery method to update the 'DueDate' of all the items with a MediaCode= 'FD' borrowed by the 'INFO' students where the 'CheckedIn' column is NULL in the Loan table. The new 'DueDate' is the original 'DueDate' plus 7 days, 7 hours and 7 minutes. (Note: The update query might not update any rows. This question uses only a single update).

4. Tranzit-Bus Company wants to record the passenger's information on the time a passenger gets on the bus and alight from the bus. The database administrator suggests using three tables, the BusReg table, Passenger table and the Transport table. The requirements for each of the tables are list below.

(a) Write the DDL to create the tables with the suggested attributes, data types and constraints.
(b) Which table should be created last? Why?
(c) What is the entity relationship between the BusReg table and the Passenger table?
(d) Name the type of primary key for the Transport table.

BusReg

BusID	INTEGER	"BusID" INTEGER PRIMARY KEY AUTOINCREMENT
RegNum	TEXT	"RegNum" TEXT
WOF	TEXT	"WOF" TEXT

Passenger

PassengerID	INTEGER	"PassengerID" INTEGER
PassenegerFName	TEXT	"PassenegerFName" TEXT
PassengerLName	TEXT	"PassengerLName" TEXT
Email	TEXT	"Email" TEXT
Mobile	TEXT	"Mobile" TEXT

PRIMARY KEY("PassengerID")

Transport

BusID	INTEGER	"BusID" INTEGER
RouteNum	INTEGER	"RouteNum" INTEGER
Date	TEXT	"Date" TEXT
PassengerID	INTEGER	"PassengerID" INTEGER
TIMEIN	TEXT	"TIMEIN" TEXT
TIMEOUT	TEXT	"TIMEOUT" TEXT

PRIMARY KEY("BusID", "Date","PassengerID","TIMEIN")
FOREIGN KEY("BusID")
FOREIGN KEY("PassengerID")

5. For the table data given below, write the insert SQL to populate the BusReg table, Passenger table, and the Transport table. Use only the single insert method to complete the task. Which table you should insert last and why?

BusID	RegNum	WOF
1	XZ123456	2020-05-10
2	ZC321546	2020-01-01
3	XC432234	2020-03-01

PassengerID	PassenegerFName	PassengerLName	Email	Mobile
1	Jim	Richard	jim.Richard@gmail.com	0223989876
2	Kim	Ng	kim.ng@gmail.com	0226758907
3	Elsie	Alison	Elsie.Alison@gmail.com	0227899876

BusID	RouteNum	Date	PassengerID	TIMEIN	TIMEOUT
1	22	2020-05-05	1	09:00	09:40
1	22	2020-05-05	1	11:00	12:15
1	22	2020-05-05	2	09:30	09:55
1	22	2020-05-05	2	12:00	13:33
1	22	2020-05-05	3	11:07	12:05
2	54	2020-05-06	1	14:00	15:00
2	54	2020-05-06	2	14:45	15:55
3	3	2020-05-07	3	09:00	10:45

6. This question is based on the tables in Question 5. COVID-19 requires the database developer to construct SQL query to extract any pair of passengers (A and B) who might contact each other in the bus.

   (a) Write the SQL to extract the pairs of passengers. The output table should show A_passengersID, B_passengerID, date, route, A_TimeIN, A_TimeOut and B_TimeIN. (Note: Consider self-join, date, time and bus in the ON conditions).

   (b) Write the SQL to determine the number of times the pair of passengers contacted each other, group the output by date, A_passengerID and B_passengerID.

Date	A_PassengerID	B_PassengerID	Number of Times Contacted

7. Delete the rows in the Loan table where the item has not been 'checkedIn' and with a 'Lost' status in the InventoryItem table. (Note: This question accepts only the 'where exists' method. The query may or may not delete any rows.)

~END~