Database Systems – Summer 2019

Week-6 Total: 150 Points

Q1. (75 points)

Based on the solutions of Q1 & Q2 of Assignment#3 & Assignment#5, design 3 use cases for each problem (Q1 & Q2) that would involve running SQL query for the database you have designed. For each use case you design make sure it uses "SQL join". Explain the use cases in brief and then present the SQL query involved in each.

Below is an example of a use case that uses "SQL join". This example is only for reference purposes.

Orders

Number	order_date	cust_id	salesperson_id	Amount
10	8/2/96	4	2	540
20	1/30/99	4	8	1800
30	7/14/95	9	1	460
40	1/29/98	7	2	2400
50	2/3/98	6	7	600
60	3/2/98	6	7	720
70	5/6/98	9	7	150

Salesperson

ID	Name	Age	Salary
1	Abe	61	140000
2	Bob	34	44000
5	Chris	34	40000
7	Dan	41	52000
8	Ken	57	115000
11	Joe	38	38000

Customer

ID	Name	City	Industry Type
4	Samsonic	pleasant	J
6	Panasung	oaktown	J
7	Samony	jackson	B
9	Orange	Jackson	B

* In orders table cust_id is a foreign key referencing ID of Customer table, and salesperson_id is a foreign key referencing ID of Salesperson table.
* Number, ID, ID are primary keys for Orders, Salesperson, Customer tables respectively.

A use case could be: A front end web page shows the performance of the salespersons. A user can see the names of all the names of that salesperson (s) that have 2 or more orders.

SQL:

```
SELECT S.NAME, COUNT (O.NUMBER) AS TOTAL_ORDERS
FROM SALESPERSON S INNER JOIN ORDERS O
ON S.ID = O.CUST_ID
GROUP BY S.NAME
HAVING TOTAL_ORDERS > 1
```

Q2. (75 points)

Design your MongoDB database to satisfy the problem statements of Q1 & Q2 of Assignment#3. Also, consider the use cases you designed in problem #1 above and the solutions of Q1 & Q2 of Assignment#3. Now present your argument and reasoning that your design and schema is well suited for the problem statement and the 3 use cases. Include a sample document from each collection. Now present your Mongo query for each of the 3 use cases. Show your work for maximum credit.