# Please read the following assignment carefully & the questions have been asked at the end of the task. You should finish the following assignment in 60 minutes. Speak to the interview coordinator in case you have any doubts.

**Section 1 - Queries**

Consider the following employee data in relational tables and write queries for questions below the data:

**Please note:** Please don’t take the data as it is mentioned in the table – it is a sample dataset. There can be more data in the table, please write your answers accordingly.

***Please do not use CTE, Rank, Top, RowNum and LIMIT clauses!***

**Table Name: Employee**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **EMPLOYEE\_ID** | **FIRST\_NAME** | **LAST\_NAME** | **SALARY** | **JOINING\_DATE** | **MANAGER** | **DEPARTMENT** |
| 1 | John | Abraham | 1000000 | 01-JAN-13 12.00.00 AM | 3 | Banking |
| 2 | Michael | Clarke | 800000 | 01-JAN-13 12.00.00 AM | 4 | Insurance |
| 3 | Roy | Thomas | 700000 | 01-FEB-13 12.00.00 AM |  | Banking |
| 4 | Tom | Jose | 600000 | 01-FEB-13 12.00.00 AM |  | Insurance |
| 5 | Jerry | Pinto | 650000 | 01-FEB-13 12.00.00 AM | 4 | Insurance |
| 6 | Philip | Mathew | 750000 | 01-JAN-13 12.00.00 AM | 7 | Services |
| 7 | TestName1 | 123 | 650000 | 01-JAN-13 12.00.00 AM |  | Services |

8 TestName2 Lname% 600000 01-FEB-13 12.00.00 AM 4 Insurance

**Table Name: Incentives**

|  |  |  |
| --- | --- | --- |
| **EMPLOYEE\_REF\_ID** | **INCENTIVE\_DATE** | **INCENTIVE\_AMOUNT** |
| 1 | 06-FEB-13 | 5000 |
| 2 | 01-FEB-13 | 3000 |
| 3 | 07-FEB-13 | 4000 |
| 1 | 01-JAN-13 | 4500 |
| 2 | 04-JAN-13 | 3500 |
| 1 | 08-FEB-13 | 6000 |

1. Write a query to print the number of employees per department in the organization

**SELECT COUNT (\*) FROM Employee GROUP BY DEPARTMENT;**

1. Write an SQL query to find the name of the top-level manager of each department

**SELECT FIRST\_NAME, LAST\_NAME FROM Employee GROUP BY DEPARTMENT HAVING MAX(SALARY);**

1. Write a query to find the total incentive received by a given employee in a given month.

**SELECT SUM(INCENTIVE\_AMOUNT) FROM Incentives GROUP BY EMPLOYEE\_REF\_ID**

1. Write a query to find the month where employees got maximum incentive

**SELECT DATENAME(MONTH, DATEADD(MONTH,MONTH(SELECT INCENTIVE\_DATE FROM Incentives HAVING MAX(INCENTIVE\_AMOUNT)),GETDATE()))**

Section 2: Please read through the problems/questions and write down your answer.

1. You have two sand timers, which can show 4 minutes and 7 minutes respectively. Use both the sand timers (at a time or one after other or any other combination) and measure a time of 9 minutes.

Start with both the sand timers simultaneously. When 4 min sand timer marks it end the 7 min sand timer will have 3 min of sand remaining, flip the 4 min sand timer to start again (till this moment effectively 4 min have been passed). Now, as soon as the remaining sand of 7 min sand timer finishes the 4 min sand timer will also finish 3 min of sand and will be left with 1 min of sand (effective time till this moment passed is 7 min), instantly flip the 7 min sand timer to start again. The 1 min sand of 4 min timer as soon as ends simultaneously the 7 min timer will also collect 1 min time worth sand at bottom cone(effective time till this moment 8 min) so again flip the 7 min timer and once this finish it will mark the count of final 9th min. Both the timer will stop effectively counting 9 minutes.

1. John and Mary are a married couple. They have two kids, one of them is a girl. Assume safely that the probability of each gender is 1/2. What is the probability that the other kid is also a girl?

4 possibilities of having 2 kids are – (GIRL, GIRL), (GIRL, BOY), (BOY, BOY), (BOY, GIRL). Since already mentioned the first kid is a girl child so out of 4 last 2 possibilities are dropped out. Hence according to question the probability is ½.

1. The following appeared as part of a campaign to sell advertising time on a local radio station to local businesses.

*Ron’s Cafe began advertising on our local radio station this year and was delighted to see its business increase by 10 percent over last year's totals. Their success shows you how you can use radio advertising to make your business more profitable.*

Discuss how well reasoned you find this argument. In your discussion be sure to analyze the line of reasoning and the use of evidence in the argument. For example, you may need to consider what questionable assumptions underline the thinking and what alternative explanations or counterexamples might weaken the conclusion. You can also discuss what sort of evidence would strengthen or refute the argument, what changes in the argument would make it more logically sound and what, if anything, would help you better evaluate in conclusion.

Be it the local grocery store, barber shop, a vendor selling fruits at corner of some road or an employee driving to office in his car, radio is a medium to reach out person of every age group, every type. It is a source of broadcasting where the motto of the listener is just to entertain himself with songs and music but the advertisement service slipping in by the host never lets the listener fade off or switch the channel. Considered as less important by people now-a-days it is still a day long routine for many people and best medium to promote the business so as to reach out many ears. Use of radio advertising to make business more profitable is smart move to play because of following reasons and assumptions–

* Low cost of advertising as compared to T.V. or ONLINE ads.
* Easy attention of moving crowd as local vendors in streets play it often all day long.
* High frequency of promotion as less and limited ads are there with radio broadcasters.
* Increasing chances of word of mouth promotion among people.
* People are more into radio because the residing place is a 2 tier or 3 tier developing city.
* Providing limited time offer and coupon code to avail.
* Promotion of social and digital platform of the firm.

Hence the above stated argument is well reasoned in the view of keeping the above listed assumptions and reasons.