**CC – 215 Database Systems**

***CS Fall 2020***

**LAB – 03**

*Hope you are fine and feeling comfortable and excited to play with Structured Query Language (SQL) in this lab. You have been taught in the lecture about SQL and query writing. Why not get all that you have learned with hands-on experience? So, Let's Start!*

**The objective of this lab is to:**

1. Practice Case, Decode
2. Practice Group Function, Decode, Cube Clause

**Course & Lab Instructor:** Sir Asif Sohail

Instructions:

* Gossips are not allowed. So be gentle and do what you know. The lab is not to deduct your sessional marks but to prepare you to achieve good marks in quizzes, mids and finals and finally have good grades. So, try to perform all your tasks in time and at your own.
* Teacher assistants are for your help, so be nice with them. Respect them as they are teaching you. Raise your hands if you have some problem and need help from TA.
* Avoid calling them by raising your voice and disturbing the environment of Lab.
* You must revise the content of the past lectures before starting the lab, it will help you resolve most of your general queries and give you the confidence that you can do it.
* Evaluation will be considered final and you cannot debate for the marks. So, focus on performing the tasks when the time is given to you.
* TA may deduct your marks for any kind of ill-discipline or misconduct from your side.
* Evaluation of tasks will be conducted in lab.
* Anyone caught being indulged in the act of plagiarism would be awarded an “F” grade in lab.
* Finally, pray before you start. And, Best of Luck!
* **Max Time: 50mins.**

**Task 01: [DECODE, CASE]**

1. Display the employee names along with a new “Grade” coloumn, in this new coloumn your task is to populate it with Employee grades as shown below.

* *President – grade 22*
* *Manager – grade 18*
* *Aanalyst – grade 14*
* *Salesman – grade 9*
* *Clerk – grade 6*

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| |  |  |  |  | | --- | --- | --- | --- | |  |  |  |  | | | |
| **ENAME** | **JOB** | **GRADES** |
| KING | PRESIDENT | Grade-22 |
| BLAKE | MANAGER | Grade-18 |

* Do this task with both Case and Decode.

1. Write a condition query to display employee name and make a column named as Commision Status.
   1. If no commission then “Commision not exist”.
   2. If yes then “Commision exist”.
2. Write a query to display name, sal, commission of the employee along with net-sal column which contains net salary of emplyees that is basically sum of their salary and their commission.
   1. Increament salary by 500 if employee earns more net salary then sal.
   2. Increament salary by 1000 if employee earns equal salary and net salary.
3. Write a query to display name, hiredate, service time (in years), status of employees. The service time should be rounded. Status will be "Gold", if the years of service is greater than 40. Otherwise, the status will be "Silver".

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| **ENAME** | **HIREDATE** | **Years of Service** | **Status** |
| KING | 11/17/1981 | 41 | Gold |
| BLAKE | 05/01/1981 | 42 | Gold |
| CLARK | 06/09/1981 | 41 | Gold |
| JONES | 04/02/1981 | 42 | Gold |
| SCOTT | 12/09/1982 | 40 | Silver |

1. Display empno, ename, job, sal, tax, net sal. The tax is computed using the following tax slabs:

|  |  |
| --- | --- |
| SAL | TAX RATE (% of sal) |
| Below 1000 | 0% |
| 1000-1499 | 5% |
| 1501-1999 | 8% |
| 2000-2499 | 10% |
| 2500 and above | 12% |

1. The employees are hired in the last century and the current century. Display empno, ename, hiredate, *hired* *century* from emp table. The *hired* *century* is either the current century or the last century.

**Task 02: [Group Functions]**

1. How many Employees are there who are salesman and earn more than 1800.
2. Display the Minimum Salary, Maximum Salary, Average Salary and Sum of all Salaries in four different columns. The column names should be proper.
3. Find the highest count of employees for a given job.
4. Show lowest paid salary and higest paid salary. Name the first column as ‘lowest paid’ and second ‘highest paid’.
5. Show the date of oldest hired **Salesman** and also show the sum of salary of all **Salesman**. Name the two columns properly.
6. Write a query to display each department’s number, number of employees and the average salary for all employees in that department. Label the columns Department, Number of People, and Salary, respectively. Round the average salary to two decimal places.
7. Perepare a Year-Wise Hirining Reoport of The Employees in the following form.

|  |  |  |
| --- | --- | --- |
| Hiring Year | Job | Employees Hired |
| 1981 | Clerk | 2 |
| 1981 | Analyst | 1 |
| -  - |  | -  - |

1. Find the percentage of the number of employees receiving commission.
2. Wrtie A Query To Display The Difference Between The Highest And Lowest Salaries.

**Task 03: [Cont. ROLLUP, CUBE]**

1. Write a query that uses ROLLUP to calculate the number of employees and sum of their salaries working under a certain manger. Sort the output in desceding order by the number of employees.
2. Write a query to display job and sum of salaries of these job along with a grand total of these jobs.
3. Use CUBE to display the department-wise and job-wise count and sum of salaries from EMP table.
4. Display EMPNO, ENAME, JOB, SAL, deptno, *Dname* of all the employees. Use Decode function to map deptno to the corresponding dname available in the dept table.
5. Display the manager number and the salary of the lowest paid employee for that manager. Exclude the employees whose manager is NULL. Exclude the groups with minimum salary less than 2000. Sort the output in the descending order of salary.

Submission Link for **Afternoon**: <https://forms.gle/nwehnzGPsrrzgCTz6>

Submission Link for **Morning**: <https://forms.gle/KCh4c5NvTAPWHHfd8>

*link will expire on 12:30pm.*