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| **Course Number and Name:**  CSE 4308  Database Management Systems Lab | |
| **Student Name:**  Nafisa Maliyat | **Student ID:**  200042133 |
| **Report Submission Date:**  29 August, 2022 | **Name of Lab Instructor:**  Md. Bakhtiar Hasan, Lecturer, CSE  Zannatun Naim Sristy, Lecturer, CSE |

**Task 1**

**Problem Statement:**

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| Create a user with username = <student\_id> and password = cse4308 and grant necessary privileges to log in and execute DDL and DML statements. Then log in as that user. |

**Analysis of the problem:**

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| Create session, resource and unlimited tablespace were the privileges granted. |

**SQL Query:**

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| conn SYSTEM/123;  CREATE USER 200042133 IDENTIFIED BY cse4308;  GRANT CREATE TABLE, RESOURCE, UNLIMITED TABLESPACE to 200042133;  conn 200042133/cse4308; |

**Any problems faced and how it was solved:**

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| Since the task was straightforward and necessary instructions were provided, there was no difficulty faced. |

**Results:**

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**Task 2**

**Problem Statement:**

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| Write SQL statement to create a table ‘STUDENT’ which has 4 attributes:  • ID  • NAME  • DEPT\_NAME  • TOT\_CRED |

**Analysis of the problem:**

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| ID is defined as int and the primary key, for distinguishing every record. Name is varchar2 of length 20 and Department Name is varchar2 of length 10. Finally, Total Credit is defined as int. Drop table instruction ensures if there’s an existing table, it will be deleted. |

**SQL Query:**

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| DROP TABLE STUDENT;  create table STUDENT(  ID int primary key,  NAME varchar2(20),  DEPT\_NAME varchar2(10),  TOT\_CRED int  ); |

**Any problems faced and how it was solved:**

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| Since the query was run multiple times, there were errors of duplicate entries since ID is the primary key. Using drop table query, this was solved so any previous existing table was deleted each time. |

**Results:**

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**Task 3**

**Problem Statement:**

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| Write SQL statements to insert the following records into ‘STUDENT’ table: |

**Analysis of the problem:**

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| Individually writing insert statements for each records will add it to the previously created table STUDENT. |

**SQL Query:**

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| insert into STUDENT values(00128, 'Zhang', 'Comp. Sci.', 102);  insert into STUDENT values(12345, 'Shankar', 'Comp. Sci.', 32);  insert into STUDENT values(19991, 'Brandt', 'History', 80);  insert into STUDENT values(23121, 'Chavez', 'Finance', 110);  insert into STUDENT values(44553, 'Peltier', 'Physics', 56);  insert into STUDENT values(45678, 'Levy', 'Physics', 46);  insert into STUDENT values(54321, 'Williams', 'Comp. Sci.', 5);  insert into STUDENT values(55739, 'Sanchez', 'Music', 38);  insert into STUDENT values(70557, 'Snow', 'Physics', 0);  insert into STUDENT values(76543, 'Brown', 'Comp. Sci.', 58);  insert into STUDENT values(76653, 'Aoi', 'Elec. Eng.', 60);  insert into STUDENT values(98765, 'Bourikas', 'Elec. Eng.', 9);  insert into STUDENT values(98988, 'Tanaka', 'Biology', 120); |

**Any problems faced and how it was solved:**

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| The queries were repetitive and there were chances of wrong typing since it was done manually. Thus the entries had to be double checked. |

**Results:**

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**Task 4**

**Problem Statement:**

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| Write SQL statements to perform the following queries: |

**Analysis of the problem:**

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| For each case, the correct condition included in the query will give the correct results. |

**SQL Query:**

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| select \* from STUDENT;  select ID, NAME from STUDENT;  select NAME, DEPT\_NAME from STUDENT where TOT\_CRED>100;  select NAME, DEPT\_NAME from STUDENT where TOT\_CRED>=80 AND TOT\_CRED<=120;  select ID, NAME from STUDENT where DEPT\_NAME='Comp. Sci.';  select NAME, TOT\_CRED from STUDENT where DEPT\_NAME='Physics';  select ID, NAME from STUDENT where DEPT\_NAME='Comp. Sci.' OR TOT\_CRED<10;  select DEPT\_NAME from STUDENT  GROUP BY DEPT\_NAME; |

**Any problems faced and how it was solved:**

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| The queries were straightforward thus there was no problems faced. Additional help was taken from internet about the group by and multiple condition query syntax. |

**Results:**

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| (a)    (b)    (c)    (d)    (e)    (f)    (g)    (h) |

**Conclusion:**

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| The lab contained a lot of basic information for learning database as well as how queries are executed based on the information required. Creating users who have different levels of privileges were interesting as well since limiting access is an important feature for a database.  In Lab 1, we had to write programs in different programming language for getting required information and there was no way to limit access to data. Lab 2 showed the difference in how easy it was to create different users as a way to partition data and ‘hide’ data.  It is very easy to control how much access each user will have. Retrieving required information was as smooth as typing a single line of query compared to writing a file of code. Any combination of information can be retrieved by a few lines of queries (at most). |