

Babaria Institute of Technology
Computer Science and Engineering

Database Management Systems - 2130703
Practical List

| Practical No. | Practical Name | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---------------|---|-------------|---------|-----------|--|-------|-------|-------|--------|-------|-----|------|------|---------|----------|-----|-------|------|---------|----------|-----|-------|-----------|---------|-----------|-----|---------|--------|---------|-----------|-----|-------|----------|---------|-----------|-----|--------|---------|---------|-----------|-----|---------|-------|---------|----------|-----|--------|-------------|---------|----------|-----|------|-------|---------|-----------|--------|-------|-------|--------|-----|------|------|---------|-----|-------|------|---------|-----|-------|------------|---------|-----|---------|---------|---------|-----|-------|-------|---------|
| 1 | Introduction to SQL.Features of SQL.Rules for SQL. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2 | Explain Components of SQL. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3 | <p>To study DDL-create and DML-insert commands.</p> <p>(i) Create tables according to the following definition.</p> <p>CREATE TABLE DEPOSIT (ACTNO VARCHAR2(5) ,CNAME VARCHAR2(18) , BNAME VARCHAR2(18) , AMOUNT NUMBER(8,2) ,ADATE DATE); CREATE TABLE BRANCH(BNAME VARCHAR2(18),CITY VARCHAR2(18)); CREATE TABLE CUSTOMERS(CNAME VARCHAR2(19) ,CITY VARCHAR2(18)); CREATE TABLE BORROW(LOANNO VARCHAR2(5), CNAME VARCHAR2(18), BNAME VARCHAR2(18), AMOUNT NUMBER (8,2));</p> <p>(ii) Insert the data as shown below.</p> <p>DEPOSIT</p> <table><tr><th>ACTNO</th><th>CNAME</th><th>BNAME</th><th>AMOUNT</th><th>ADATE</th></tr><tr><td>100</td><td>ANIL</td><td>VRCE</td><td>1000.00</td><td>1-MAR-95</td></tr><tr><td>101</td><td>SUNIL</td><td>AJNI</td><td>5000.00</td><td>4-JAN-96</td></tr><tr><td>102</td><td>MEHUL</td><td>KAROLBAGH</td><td>3500.00</td><td>17-NOV-95</td></tr><tr><td>104</td><td>MADHURI</td><td>CHANDI</td><td>1200.00</td><td>17-DEC-95</td></tr><tr><td>105</td><td>PRMOD</td><td>M.G.ROAD</td><td>3000.00</td><td>27-MAR-96</td></tr><tr><td>106</td><td>SANDIP</td><td>ANDHERI</td><td>2000.00</td><td>31-MAR-96</td></tr><tr><td>107</td><td>SHIVANI</td><td>VIRAR</td><td>1000.00</td><td>5-SEP-95</td></tr><tr><td>108</td><td>KRANTI</td><td>NEHRU PLACE</td><td>5000.00</td><td>2-JUL-95</td></tr><tr><td>109</td><td>MINU</td><td>POWAI</td><td>7000.00</td><td>10-AUG-95</td></tr></table> <p>BORROW</p> <table><tr><th>LOANNO</th><th>CNAME</th><th>BNAME</th><th>AMOUNT</th></tr><tr><td>201</td><td>ANIL</td><td>VRCE</td><td>1000.00</td></tr><tr><td>206</td><td>MEHUL</td><td>AJNI</td><td>5000.00</td></tr><tr><td>311</td><td>SUNIL</td><td>DHARAMPETH</td><td>3000.00</td></tr><tr><td>321</td><td>MADHURI</td><td>ANDHERI</td><td>2000.00</td></tr><tr><td>375</td><td>PRMOD</td><td>VIRAR</td><td>8000.00</td></tr></table> | | | | | ACTNO | CNAME | BNAME | AMOUNT | ADATE | 100 | ANIL | VRCE | 1000.00 | 1-MAR-95 | 101 | SUNIL | AJNI | 5000.00 | 4-JAN-96 | 102 | MEHUL | KAROLBAGH | 3500.00 | 17-NOV-95 | 104 | MADHURI | CHANDI | 1200.00 | 17-DEC-95 | 105 | PRMOD | M.G.ROAD | 3000.00 | 27-MAR-96 | 106 | SANDIP | ANDHERI | 2000.00 | 31-MAR-96 | 107 | SHIVANI | VIRAR | 1000.00 | 5-SEP-95 | 108 | KRANTI | NEHRU PLACE | 5000.00 | 2-JUL-95 | 109 | MINU | POWAI | 7000.00 | 10-AUG-95 | LOANNO | CNAME | BNAME | AMOUNT | 201 | ANIL | VRCE | 1000.00 | 206 | MEHUL | AJNI | 5000.00 | 311 | SUNIL | DHARAMPETH | 3000.00 | 321 | MADHURI | ANDHERI | 2000.00 | 375 | PRMOD | VIRAR | 8000.00 |
| ACTNO | CNAME | BNAME | AMOUNT | ADATE | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 100 | ANIL | VRCE | 1000.00 | 1-MAR-95 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 101 | SUNIL | AJNI | 5000.00 | 4-JAN-96 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 102 | MEHUL | KAROLBAGH | 3500.00 | 17-NOV-95 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 104 | MADHURI | CHANDI | 1200.00 | 17-DEC-95 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 105 | PRMOD | M.G.ROAD | 3000.00 | 27-MAR-96 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 106 | SANDIP | ANDHERI | 2000.00 | 31-MAR-96 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 107 | SHIVANI | VIRAR | 1000.00 | 5-SEP-95 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 108 | KRANTI | NEHRU PLACE | 5000.00 | 2-JUL-95 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 109 | MINU | POWAI | 7000.00 | 10-AUG-95 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| LOANNO | CNAME | BNAME | AMOUNT | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 201 | ANIL | VRCE | 1000.00 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 206 | MEHUL | AJNI | 5000.00 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 311 | SUNIL | DHARAMPETH | 3000.00 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 321 | MADHURI | ANDHERI | 2000.00 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 375 | PRMOD | VIRAR | 8000.00 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

BRANCH

| | |
|-------------|----------|
| VRCE | NAGPUR |
| AJNI | NAGPUR |
| KAROLBAGH | DELHI |
| CHANDI | DELHI |
| DHARAMPETH | NAGPUR |
| M.G.ROAD | BANGLORE |
| ANDHERI | BOMBAY |
| VIRAR | BOMBAY |
| NEHRU PLACE | DELHI |
| POWAI | BOMBAY |

CUSTOMERS

| | |
|---------|----------|
| ANIL | CALCUTTA |
| SUNIL | DELHI |
| MEHUL | BARODA |
| MANDAR | PATNA |
| MADHURI | NAGPUR |
| PRAMOD | NAGPUR |
| SANDIP | SURAT |
| SHIVANI | BOMBAY |
| KRANTI | BOMBAY |
| NAREN | BOMBAY |

From the above given tables perform the following queries:

- 1 Describe deposit, branch.
- 2 Describe borrow, customers.
- 3 List all data from table DEPOSIT.
- 4 List all data from table BORROW.
- 5 List all data from table CUSTOMERS.
- 6 List all data from table BRANCH.
- 7 Give account no and amount of depositors.

- 8 Give name of depositors having amount greater than 4000.
9 Give name of customers who opened account after date '1-12-96'.

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Create the below given table and insert the data accordingly.

(i) Create Table Job (job_id, job_title, min_sal, max_sal)

| COLUMN NAME | DATA TYPE |
|-------------|--------------|
| job_id | Varchar2(15) |
| job_title | Varchar2(30) |
| min_sal | Number(7,2) |
| max_sal | Number(7,2) |

(ii) Create table Employee (emp_no, emp_name, emp_sal, emp_comm, dept_no)

| COLUMN NAME | DATA TYPE |
|-------------|--------------|
| emp_no | Number(3) |
| emp_name | Varchar2(30) |
| emp_sal | Number(8,2) |
| emp_comm | Number(6,1) |
| dept_no | Number(3) |

(iii) Create table deposit(a_no,cname,bname,amount,a_date).

| COLUMN NAME | DATA TYPE |
|-------------|--------------|
| a_no | Varchar2(5) |
| Cname | Varchar2(15) |
| bname | Varchar2(10) |
| amount | Number(7,2) |
| a_date | Date |

(iv) Create table borrow(loanno,cname,bname,amount).

| COLUMN NAME | DATA TYPE |
|-------------|---------------|
| loanno | Varchar2(5) |
| cname | Varchar2(15) |
| bname | Varchar2(10) |
| amount | Varchar2(7,2) |

(V) Insert following values in the table **Employee**.

| emp_n | emp_name | emp_sal | emp_comm | dept_no |
|-------|----------|---------|----------|---------|
| 101 | Smith | 800 | | 20 |
| 102 | Snehal | 1600 | 300 | 25 |
| 103 | Adama | 1100 | 0 | 20 |
| 104 | Aman | 3000 | | 15 |
| 105 | Anita | 5000 | 50,000 | 10 |
| 106 | Sneha | 2450 | 24,500 | 10 |
| 107 | Anamika | 2975 | | 30 |

(vi) Insert following values in the table **job**.

| job_id | job_name | min_sal | max_sal |
|---------|-------------------|---------|---------|
| IT_PROG | Programmer | 4000 | 10000 |
| MK_MGR | Marketing manager | 9000 | 15000 |
| FI_MGR | Finance manager | 8200 | 12000 |
| FI_ACC | Account | 4200 | 9000 |
| LEC | Lecturer | 6000 | 17000 |
| COMP_OP | Computer Operator | 1500 | 3000 |

(vi) Insert following values in the table **Deposit**

| A_no | cname | Bname | Amount | date |
|------|-------|------------|--------|-----------|
| 101 | Anil | andheri | 7000 | 01-jan-06 |
| 102 | sunil | virar | 5000 | 15-jul-06 |
| 103 | jay | villeparle | 6500 | 12-mar-06 |
| 104 | vijay | andheri | 8000 | 17-sep-06 |

Perform following queries

1. Retrieve all data from **employee, jobs and deposit**.
2. Give details of account no. and deposited rupees of customers having account opened between dates **01-01-06 and 25-07-06**.
3. Display all jobs with minimum salary is greater than 4000.

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| | <ol style="list-style-type: none"> Display name and salary of employee whose department no is 20. Give alias name to name of employee. Display employee no,name and department details of those employee whose department lies in(10,20) <p>To study various options of <u>LIKE</u> predicate</p> <ol style="list-style-type: none"> Display all employee whose name start with 'A' and third character is ' a'. Display name, number and salary of those employees whose name is 5 characters long and first three characters are 'Ani'. Display the non-null values of employees and also employee name second character should be 'n' and string should be 5 character long. Display the null values of employee and also employee name's third character should be 'a'. What will be output if you are giving LIKE predicate as '%_%' ESCAPE '\' |
| 5 | <p>To Perform various data manipulation commands, aggregate functions and Sorting concept on all created tables.</p> <ol style="list-style-type: none"> List total deposit from deposit. List total loan from karolbagh branch Give maximum loan from branch vrce. Count total number of customers Count total number of customer's cities. Create table supplier from employee with all the columns. Create table sup1 from employee with first two columns. Create table sup2 from employee with no data Insert the data into sup2 from employee whose second character should be 'n' and string should be 5 characters long in employee name field. Delete all the rows from sup1. Delete the detail of supplier whose sup_no is 103. Rename the table sup2. Destroy table sup1 with all the data. Update the value dept_no to 10 where second character of emp. name is 'm'. |

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| | 15. Update the value of employee name whose employee number is 103. |
| 6 | <p>To study Single-row functions.</p> <ol style="list-style-type: none"> 1. Write a query to display the current date. Label the column Date 2. For each employee, display the employee number, job, salary, and salary increased by 15% and expressed as a whole number. Label the column New Salary 3. Modify your query no 4.(2) to add a column that subtracts the old salary from the new salary. Label the column Increase 4. Write a query that displays the employee's names with the first letter capitalized and all other letters lowercase, and the length of the names, for all employees whose name starts with J, A, or M. Give each column an appropriate label. Sort the results by the <ol style="list-style-type: none"> a. employees' last names. 5. Write a query that produces the following for each employee: <employee last name> earns <salary> monthly 6. Display the name, hire date, number of months employed and day of the week on which the employee has started. Order the results by the day of the week starting with Monday. 7. Display the hiredate of emp in a format that appears as Seventh of June 1994 12:00:00 AM. 8. Write a query to calculate the annual compensation of all employees (sal+comm.). |
| 7 | <p>Displaying data from Multiple Tables (join)</p> <ol style="list-style-type: none"> 1. Give details of customers ANIL. 2. Give name of customer who are borrowers and depositors and having living city nagpur 3. Give city as their city name of customers having same living branch. 4. Write a query to display the last name, department number, and department name for all employees. 5. Create a unique listing of all jobs that are in department 30. Include the location of the department in the output 6. Write a query to display the employee name, department number, and department name for all employees who work in NEW YORK. 7. Display the employee last name and employee number along with their manager's last name and manager number. Label the columns Employee, Emp#, Manager, and Mgr#, respectively. 8. Create a query to display the name and hire date of any employee hired after employee SCOTT. |

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| 8 | <p>To apply the concept of Aggregating Data using Group functions.</p> <ol style="list-style-type: none"> 1. List total deposit of customer having account date after 1-jan-96. 2. List total deposit of customers living in city Nagpur. 3. List maximum deposit of customers living in bombay. 4. Display the highest, lowest, sum, and average salary of all employees. Label the columns Maximum, Minimum, Sum, and Average, respectively. Round your results to the nearest whole number. 5. Write a query that displays the difference between the highest and lowest salaries. Label the column DIFFERENCE. 6. Create a query that will display the total number of employees and, of that total, the number of employees hired in 1995, 1996, 1997, and 1998 7. Find the average salaries for each department without displaying the respective department numbers. 8. Write a query to display the total salary being paid to each job title, within each department. 9. Find the average salaries > 2000 for each department without displaying the respective department numbers. 10. Display the job and total salary for each job with a total salary amount exceeding 3000, in which excludes president and sorts the list by the total salary. 11. List the branches having sum of deposit more than 5000 and located in city bombay. |
| 9 | <p>To solve queries using the concept of sub query.</p> <ol style="list-style-type: none"> 1. Write a query to display the last name and hire date of any employee in the same department as SCOTT. Exclude SCOTT 2. Give name of customers who are depositors having same branch city of mr. sunil. 3. Give deposit details and loan details of customer in same city where pramod is living. 4. Create a query to display the employee numbers and last names of all employees who earn more than the average salary. Sort the results in ascending order of salary. 5. Give names of depositors having same living city as mr. anil and having deposit amount greater than 2000 6. Display the last name and salary of every employee who reports to ford. 7. Display the department number, name, and job for every employee in the Accounting department. 8. List the name of branch having highest number of depositors. 9. Give the name of cities where in which the maximum numbers of branches are |

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| | <p>located.</p> <p>10. Give name of customers living in same city where maximum depositors are located.</p> |
| 10 | <p>Manipulating Data</p> <ol style="list-style-type: none"> 1. Give 10% interest to all depositors. 2. Give 10% interest to all depositors having branch vrc 3. Give 10% interest to all depositors living in nagpur and having branch city bombay. 4. Write a query which changes the department number of all employees with empno 7788's job to employee 7844's current department number. 5. Transfer 10 Rs from account of anil to sunil if both are having same branch. 6. Give 100 Rs more to all depositors if they are maximum depositors in their respective branch. 7. Delete depositors of branches having number of customers between 1 to 3. 8. Delete deposit of vijay. 9. Delete borrower of branches having average loan less than 1000. |
| 11 | Explain PL/SQL with Example. |
| 12 | To apply the concept of security and privileges. |
| 13 | To study Transaction control commands |