DBMS Laboratory Assignment

2nd Year B.Tech Sem

HANDS ON EXERCISES

1. Create the tables described below:

Table Name: CLIENT_MASTER
Description: Used to store client information.

Column Name	Data Type	Size	Default	Attributes
CLIENTNO	Varchar2	6		
NAME	Varchar2	20		
ADDRESS1	Varchar2	30		
ADDRESS2	Varchar2	30		
CITY	Varchar2	15		
PINCODE	Number	8		
STATE	Varchar2	15		
BALDUE	Number	10,2		

Table Name: PRODUCT_MASTER
Description: Used to store product information.

Column Name	Data Type	Size	Default	Attributes
PRODUCTNO	Varchar2	6		
DESCRIPTION	Varchar2	15		
PROFITPERCENT	Number	4,2		
UNITMEASURE	Varchar2	10		
QTYONHAND	Number	8		
REORDERLVL	Number	8		
SELLPRICE	Number	8,2		
COSTPRICE	Number	8,2		

Table Name: SALESMAN_MASTER
Description: Used to store salesman information working for the company.

Column Name	Data Type	Size	Default	Attributes
SALESMANNO	Varchar2	6		
SALESMANNAME	Varchar2	20		
ADDRESS1	Varchar2	30		
ADDRESS2	Varchar2	30		
CITY	Varchar2	20		
PINCODE	Number	8		
STATE	Varchar2	20		
SALAMT	Number	8,2		
TGTTOGET	Number	6,2		
YTDSALES	Number	6,2		
REMARKS	Varchar2	60		

2. Insert the following data into their respective tables:

a) Data for CLIENT_MASTER table:

ClientNo	Name	City	Pincode	State	BalDue
C00001	Ivan Bayross	Mumbai	400054	Maharashtra	15000
C00002	Mamta Muzumdar	Madras	780001	Tamil Nadu	0
C00003	Chhaya Bankar	Mumbai	400057	Maharashtra	5000
C00004	Ashwini Joshi	Bangalore	560001	Karnataka	0
C00005	Hansel Colaco	Mumbai	400060	Maharashtra	2000
C00006	Deepak Sharma	Mangalore	560050	Karnataka	0

b) Data for PRODUCT_MASTER table:

ProductNo	Description	Profit Percent	Unit Measure	QtyOn Hand	ReorderLvl	SellPrice	CostPrice
P00001	T-Shirts	5	Piece	200	50	350	250
P0345	Shirts	6	Piece	150	50	500	350
P06734	Cotton Jeans	5	Piece	100	20	600	450
P07865	Jeans	5	Piece	100	20	750	500
P07868	Trousers	2	Piece	150	50	850	550
P07885	Pull Overs	2.5	Piece	80	30	700	450
P07965	Denim Shirts	4	Piece	100	40	350	250
P07975	Lycra Tops	5	Piece	70	30	300	175
P08865	Skirts	5	Piece	75	30	450	300

c) Data for SALESMAN_MASTER table:

SalesmanNo	Name	Address1	Address2	City	PinCode	State
S00001	Aman	A/14	Worli	Mumbai	400002	Maharashtra
S00002	Omkar	65	Nariman	Mumbai	400001	Maharashtra
S00003	Raj	P-7	Bandra	Mumbai	400032	Maharashtra
S00004	Ashish	A/5	Juhu	Mumbai	400044	Maharashtra

SalesmanNo	SalAmt	TgtToGet	YtdSales	Remarks
S00001	3000	100	50	Good
S00002	3000	200	100	Good
S00003	3000	200	100	Good
S00004	3500	200	150	Good

3. Exercise on retrieving records from a table
   a. Find out the names of all the clients.
   b. Retrieve the entire contents of the Client_Master table.
   c. Retrieve the list of names, city and the sate of all the clients.
   d. List the various products available from the Product_Master table.
   e. List all the clients who are located in Mumbai.
   f. Find the names of salesmen who have a salary equal to Rs.3000.

4. Exercise on updating records in a table
   a. Change the city of ClientNo 'C00005' to 'Bangalore'.
   b. Change the BalDue of ClientNo 'C00001' to Rs. 1000.
   c. Change the cost price of 'Trousers' to Rs. 950.00.
   d. Change the city of the salesman to Pune.

5. Exercise on deleting records in a table
   a. Delete all salesmen from the Salesman_Master whose salaries are equal to Rs. 3500.
   b. Delete all products from Product_Master where the quantity on hand is equal to 100.
   c. Delete from Client_Master where the column state holds the value 'Tamil Nadu'.

6. Exercise on altering the table structure
   a. Add a column called 'Telephone' of data type 'number' and size ='10' to the Client_Master table.
   b. Change the size of SellPrice column in Product_Master to 10,2.

7. Exercise on deleting the table structure along with the data
   a. Destroy the table Client_Master along with its data.

8. Exercise on renaming the table
   a. Change the name of the Salesman_Master table to sman_mast.

Details for CLIENT_MASTER table continued.

Column Name	Data Type	Size	Default	Attributes
ADDRESS2	Varchar2	30		
CITY	Varchar2	15		
PINCODE	Number	8		
STATE	Varchar2	15		
BALDUE	Number	10,2		

Table Name: PRODUCT_MASTER
Description: Used to store product information.

Column Name	Data Type	Size	Default	Attributes
PRODUCTNO	Varchar2	6		Primary Key / first letter must start with 'P'
DESCRIPTION	Varchar2	15		Not Null
PROFITPERCENT	Number	4,2		Not Null
UNITMEASURE	Varchar2	10		Not Null
QTYONHAND	Number	8		Not Null
REORDERLVL	Number	8		Not Null
SELLPRICE	Number	8,2		Not Null, Cannot be 0
COSTPRICE	Number	8,2		Not Null, Cannot be 0

Table Name: SALESMAN_MASTER
Description: Used to store salesman information working for the company.

Column Name	Data Type	Size	Default	Attributes
SALESMANNO	Varchar2	6		Primary Key / first letter must start with 'S'
SALESMANNAME	Varchar2	20		Not Null
ADDRESS1	Varchar2	30		Not Null
ADDRESS2	Varchar2	30		
CITY	Varchar2	20		
PINCODE	Number	8		
STATE	Varchar2	20		
SALAMT	Number	8,2		Not Null, Cannot be 0
TGTTOGET	Number	6,2		Not Null, Cannot be 0
YTDSALES	Number	6,2		Not Null
REMARKS	Varchar2	60		

Table Name: SALES_ORDER
Description: Used to store client's orders.

Column Name	Data Type	Size	Default	Attributes
ORDERNO	Varchar2	6		Primary Key / first letter must start with 'O'
CLIENTNO	Varchar2	6		Foreign Key references ClientNo of Client Master table
ORDERDATE	Date			Not Null
DELYADDR	Varchar2	25		
SALESMANNO	Varchar2	6		Foreign Key references Salesmanno of Salesman_Master table
DELYTYPE	Char	1	F	Delivery: part (P) / full (F)
BILLYN	Char	1		
DELYDATE	Date			Cannot be less than Order Date
ORDERSTATUS	Varchar2	10		Values ('In Process', 'Fulfilled', 'BackOrder', 'Cancelled'

Table Name: SALES_ORDER_DETAILS
Description: Used to store client's orders with details of each product ordered.

Column Name	Data Type	Size	Default	Attributes
ORDERNO	Varchar2	6		Foreign Key references OrderNo of Sales_Order table
PRODUCTNO	Varchar2	6		Foreign Key references ProductNo of Product_Master table
QTYORDERED	Number	8		
QTYDISP	Number	8		
PRODUCTRATE	Number	10,2		

2. Insert the following data into their respective tables:

a) Re-insert the data generated for tables CLIENT_MASTER, PRODUCT_MASTER_ and SALESMAN_MASTER. Refer to hands-on exercised for Chapter 07:Interactive SQL-Part I.

b) Data for Sales_Order table:

OrderNo	ClientNo	OrderDate	SalesmanNo	DelyType	BillYN	DelyDate	OrderStatus
O19001	C00001	12-June-04	S00001	F	N	20-July-02	In Process
O19002	C00002	25-June-04	S00002	P	N	27-June-02	Cancelled
O46865	C00003	18-Feb-04	S00003	F	Y	20-Feb-02	Fulfilled
O19003	C00001	03-Apr-04	S00001	F	Y	07-Apr-02	Fulfilled
O46866	C00004	20-May-04	S00002	P	N	22-May-02	Cancelled
O19008	C00005	24-May-04	S00004	F	N	26-July-02	In Process

c) Data for Sales_Order_Details table:

OrderNo	ProductNo	QtyOrdered	QtyDisp	ProductRate
O19001	P00001	4	4	525
O19001	P07965	2	1	8400
O19001	P07885	2	1	5250
O19002	P00001	10	0	525
O46865	P07868	3	3	3150
O46865	P07885	3	1	5250
O46865	R00001	10	10	525
O46865	P0345	4	4	1050
O19003	P03450	2	2	1050
O19003	P06734	1	1	12000
O46866	P07965	1	0	8400
O46866	P07975	1	0	1050
O19008	P00001	10	5	525
O19008	P07975	5	3	1050

LPAD returns the string passed as a parameter after left padding it to a specified length.

The TO_CHAR (date conversion) converts a value of a NUMBER datatype to a character datatype, using the optional format string.

The DATE data type is used to store date and time information.

The TO_DATE() function also disallows part insertion of a DATE value into a column.

The ADD_MONTHS function returns date after adding the number of months specified in the function.

The TO-DATE function allows a user to insert date into a date column in any required format, by specifying the character value of the date to be inserted and its format.

HANDS ON EXERCISES

Using the tables created previously generate the SQL statements for the operations mentioned below. The tables in user are as follows:

a. Client_Master
b. Product_Master
c. Salesman_Master
d. Sales_Order
e. Sales_Order_Details

1. Perform the following computations on table data:

a. List the names of all clients having 'a' as the second letter in their names.
b. List the clients who stay in a city whose First letter is 'M'.
c. List all clients who stay in 'Bangalore' or 'Mangalore'
d. List all clients whose BalDue is greater than value 10000.
e. List all information from the Sales_Order table for orders placed in the month of June.
f. List the order information for ClientNo 'C00001' and 'C00002'.
g. List products whose selling price is greater than 500 and less than or equal to 750.
h. List products whose selling price is more than 500. Calculate a new selling price as, original selling price * .15. Rename the new column in the output of the above query as new_price.
i. List the names, city and state of clients who are not in the state of 'Maharashtra'.
j. Count the total number of orders.
k. Calculate the average price of all the products.
l. Determine the maximum and minimum product prices. Rename the output as max_price and min_price respectively.
m. Count the number of products having price less than or equal to 500.
n. List all the products whose QtyOnHand is less than reorder level.

2. Exercise on Date Manipulation:

a. List the order number and day on which clients placed their order.
b. List the month (in alphabets) and date when the orders must be delivered.
c. List the OrderDate in the format 'DD-Month-YY'. e.g. 12-February-02.
d. List the date, 15 days after today's date.

In the union clause multiple queries can be put together but their outputs cannot be combined.

Unions can be used in subqueries.

The Intersect clause outputs only rows produced by both the queries intersected.

The Minus clause outputs the rows produced by the first query, before filtering the rows retrieved by the second query.

HANDS ON EXERCISES

1. Exercises on using Having and Group By Clauses:
   a. Print the description and total qty sold for each product.
   b. Find the value of each product sold.
   c. Calculate the average qty sold for each client that has a maximum order value of 15000.00.
   d. Find out the total of all the billed orders for the month of June.

2. Exercises on Joins and Correlation:
   a. Find out the products, which have been sold to 'Ivan Bayross'.
   b. Find out the products and their quantities that will have to be delivered in the current month.
   c. List the ProductNo and description of constantly sold (i.e. rapidly moving) products.
   d. Find the names of clients who have purchased 'Trousers'.
   e. List the products and orders from customers who have ordered less than 3 units of 'Pull Overs'.
   f. Find the products and their quantities for the orders placed by 'Ivan Bayross' and 'Mamta Muzumdar'.
   g. Find the products and their quantities for the orders placed by ClientNo 'C00001' and 'C00002'.

3. Exercise on Sub-queries:
   a. Find the ProductNo and description of non-moving products i.e. products not being sold.
   b. List the customer Name, Address1, Address2, City and PinCode for the client who has placed order no 'O19001'.
   c. List the client names that have placed orders before the month of May'02.
   d. List if the product 'Lycra Top' has been ordered by any client and print the Client_no, Name to whom it was sold.
   e. List the names of clients who have placed orders worth Rs. 10000 or more.

Guru Nanak Institute of Technology
C.S.E. 3'rd Year, 5'th Semester.
DBMS LAB ASSIGNMENT

Consider the following default tables of Oracle:

Description of the table EMP:

Name	Null?	Type
EMPNO	NOT NULL	NUMBER(4)
ENAME		VARCHAR2(10)
JOB		VARCHAR2(9)
MGR		NUMBER(4)
HIREDATE		DATE
SAL		NUMBER(7,2)
COMM		NUMBER(7,2)
DEPTNO		NUMBER(2)

Description of the table DEPT:

Name	Null?	Type
DEPTNO	NOT NULL	NUMBER(2)
DNAME		VARCHAR2(14)
LOC		VARCHAR2(13)

Description of the table SALGRADE:

Name	Null?	Type
GRADE		NUMBER
LOSAL		NUMBER
HISAL		NUMBER

Description of the table BONUS:

Name	Null?	Type
ENAME		VARCHAR2(10)
JOB		VARCHAR2(9)
SAL		NUMBER
COMM		NUMBER

Experiment No. – 01

Using the default table of Oracle, such as Emp.

Write SQL queries for the following :

(a) List the names and code of all employees.
(b) List the names, employee code and department code of all clerks.
(c) List the names, employee code and salary of all managers.
(d) List the names, employee code and hiredate of all analysts.
(e) List the employees whose salary lies between 2000 and 3000.
(f) List the employees whose salary less than 1000.
(g) List the employees whose salary greater than 4000.
(h) List the employees whose salaries are 800, 1600 or 2450.
(i) List the names of all employees who are either clerks or salesman or analyst .
(j) List the employee those who are not getting commission.
(k) List the employee those who are getting commission.
(l) List the employee name starts with 'F'.

Experiment No. – 02

Write SQL queries for the following.

(a) List the names and job of all employees who have names exactly 5 characters in length.
(b) List all employees whose names start with 'G' .
(c) List all employees who name ends with 'N'.
(d) List the names and job of all employees who have names exactly 5 characters in length and ends with 'S'.
(e) List all employees who have not joined between 1/1/81 and 31/12/81.
(f) List all employees whose job does not start will "CL".
(g) List all managers who earn more than Rs. 4000/-.
(h) List all clerks and salesman who earn more than Rs. 1600/-
(i) List the names and salaries of all employees who were joined as manager during 1981.

Experiment No. – 03

For the EMP relation, frame the following queries using SQL.

(a) Calculate the average salary of all employees.
(b) Calculate the average salary of all Managers.
(c) Calculate the total salary of all employees.
(d) Calculate the total salary of all managers.
(e) Find the minimum salaries earned by the employees.
(f) Find the maximum salaries earned by the employees.
(g) Find the minimum salaries earned by a clerks.
(h) Find the maximum salaries earned by a salesman.
(i) Find the minimum and maximum and average salaries earned by a employees.
(j) Find the minimum and maximum and average salaries earned by a clerks.
(k) List the total number of employees and the average salaries of the different departments.
(l) Calculate total number of employees.
(m) Calculate total number of managers.
(n) Calculate the number of employees who are not getting any commission.

(o) Calculate the number of employees who are getting any commission.
(p) List the details of all managers in ascending order of joining dates.
(q) List the average salaries for each different job.
(r) Display the average salary for each different job.
(s) Display the minimum, maximum, and average salaries for each job group.
(t) Find all departments which have less than 3 employees.
(u) List the details of the employees in ascending order of department number, and within each department, in descending order of salary.
(v) Display the name, deptno and annual salary of each employee in order salary and deptno.
(w) Display the name of employee who earns maximum salary.
(x) Display the name of employee who earns minimum salary.
(y) Display the name of employee who earns maximum salary whose job is salesman.
(z) Display the name of employee who earns minimum salary whose job is clerk.
(aa) Display the department number whose average salary is maximum.

Experiment No. – 04

Using the default table of Oracle, such as Emp and Dept.

Write SQL queries for the following ?

(a) List all employee names, dept name and the city, in department name order.
(b) List all employee name, dept number, dept name and salary.
(c) List all employees working in Dallas in descending order of salary.
(d) List all employee's name, job, salary and department name for everyone in the company except clerks. Sort the report with respect to job and salary.
(e) List all employee names who work in the same city as an employee named 'FORD'.
(f) Display the name of the dept that has no employee.

Experiment No. – 05

a) List the employees belonging to the department 20.
b) List the name and salary of the employees whose salary is more than 1000.
c) List the employee number and the name of the manager.
d) List the names of the clerks working in the department 20.
e) List the name of the analysts and salesman.
f) List the details of the employees who have joined before the end of September 81.
g) List the names of the employees ho are not managers.
h) List the name of the employees whose employee numbers 7369,7521,7839,7934,7788.
i) List the employee details not belonging to the department 10,30 and 40.
j) List the employee names who have joined before 30th June'81 and after December '81.
k) List the name of the employee and designation (job) of the employee who does not report to anybody (who doesn't have manager).
l) List the different jobs (designations) available in the emp table.
m) List the employees not assigned to any department.
n) List the details of the employees whose salary is greater than 2000 and not eligible for commission.
o) List the employee names having 'I' as the second character.
p) List the name, salary and PF amount of all the employees (PF is calculated as 10% of salary).

q) List the employee number, name and salary in ascending order of salary.
r) Lists the employee name and hiredate in descending order of hiredate.
s) List the employee name, salary, PF, HRA, DA and gross salary;order the result in ascending order of gross.HRA is 50% of salary and DA is 30% of salary.
t) List the department number and the total salary payable in each department. List the jobs and number of employees in each job.The result should be in descending order of the number of employees.
u) List the total salary, maximum, minimum and average salary of the employee's job wise.
v) List the average salary from each job excluding manager.
w) List the average monthly salary for each job type within department.
x) List average salary for all departments employing more than five people.
y) List job of all the employees where maximum salary is greater than or equal to 3000.
z) List the total salary, maximum and minimum salary and the average salary of employees job wise for department number 20 and display only those rows having average salary greater than 1000.

Experiment No. – 06

a) List the employees earns more than any employee in CHICAGO.
b) List the name of the employee who works in the same department as SMITH.
c) List the name, employee number ,their manager name and manager number.
d) List the name of the employee job is same as 'CLARK'.
e) List the name of employee whose salary is more than 'TURNER'.
f) List the name of employee who joined after 'ALLEN'.
g) Display the name of the department whose job is 'SALESMAN'.
h) Display the name of the department in which 'FORD' works.
i) Display the name of the department whose salary is maximum.
j) Display the name of the city(location) in which 'SMITH' works.
k) Display the name of the city in which the manager works.
l) Display the grade of the employee named 'MARTIN'.
m) List the employees earns more than every employee in 'DALLAS'.
n) Display the name of the department which has no employee.
o) List name, employee number and the name, employee number of their managers' manager.
p) list the name of the employee who joined in the same year of 'ADAMS'.
q) list the name of the employee who joined in the same month of 'BLAKE'.
r) list the name of the employee who joined in the same date of 'ADAMS'.
s) List the name of the department who gets commission.

Experiment No. – 07

Write SQL queries for the following :

(a) List all employee who work in Dallas or have joined the company as manager before 82.
(b) List all employees who work in Boston and earn more than any employee working in Chicago.
(c) List name of the employee who earns the minimum salary.
(d) List all employees who work in the same post as Smith.
(e) List all employees who earn the lowest salary in their respective dept.
(f) List all employees who earn more than every employee in the 'Sales' department.

(g) Find the job with the highest average salary.

Experiment No. – 08

Write SQL queries for the following.

(a) List the names, jobs and salaries of employees whose salary is greater than the highest salary in Operations dept.
(b) Find the department is not having any employee.
(c) List the top 10 earners in the company.
(d) List the top 2 earner in each department.
(e) List the years and the number of people joining in that year.
(f) Give an increment of 20% to all employees who have joined before 1/1/82 or earner less than Rs. 3000/-.

Experiment No. – 09

(a) Create a Account table with following attribute
Acc_no(4), Acc_type(1), Cust_no1(6), Cust_no2(6), Opp_date.
(b) Create the same table using Not Null on all and Default on Opp_date constraint.
(c) Add a field called Balance(7,2) to the table Account.
(d) Increase the field of Acc_no to 6.
(e) Remove the constraint of Cust_no2.
(f) Disable the constraint of Acc_type.
(g) Remove the table from the database.

1. Create a table called CRICKTERS, with columns as specified below:

Column Name	Description
Country	Character string
Name	Character string (max length 20)
Runs	Number
Wickets	number
Catches	number
Date-of-birth	date

The *country* and *name* fields should be declared NOT NULL.

2. Modify the table CRICKETERS to

a) Add a field *centuries*, which will hold the number of centuries scored.
b) Add a field *five's*, which will hold the number at times he has taken five wickets in an innings.
c) A Boolean field *caption*, indicating whether the person is currently the caption of the team.

Use the DESC command to check the column defines.

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Experiment No. – 08

a) Insert following information in Account table.

Acc_no	Acc_type	Cust_no1	Cust_no2	Opp_date	Balance
S00001	S	C00001		20-FEB-98	2600
S00002	J	C00002	C00003	01-APR-98	14657
S00003	J	C00004	C00005	02-MAR-98	368
S00004	S	C00003		01-JAN-98	27000
S00005	F	C00006	C00007	01-JAN-98	51000
S00006	S	C00008		10-JUL-98	14562
S00007	F	C00009		25-MAR-98	12000
S00008	J	C00008	C00010	30-MAY-98	8765

b) Insert a value of Acc_no, Acc_type and Cust_no1 only.

Acc_no	Acc_type	Cust_no1	Cust_no2	Opp_date	Balance
S00009	J	C00012			

c) Insert an information with Opp_date on 07-FEB-2000.

Acc_no	Acc_type	Cust_no1	Cust_no2	Opp_date	Balance
S00009	J	C00001	C00012	20-FEB-98	2600

d) Use insert operation with substitution variables.

e) Delete the Joint Account who have balance less than Rs. 500.

f) Give extra bonus of 10% on balance those have more than Rs. 10000 and not Fixed Account.

3. It is necessary to create a table to contain information pertaining to a railway reservation system. Identify the columns of the table, their data types, and hence create the table using SQL.

Experiment No. – 10

a) Create a Transaction table with the following attribute :
Acc_no(4), T_date(date), T_type(1), T_mode(6), Cheque_no(7), Operator(20), Drawn_bank(30), T_amount(7,2), Clear(1).

- T_date should be **Sysdate.**
- T_type will be **Deposit** or **Withdraw.**
- T_mode will be **Cheque** or **Cash.**
- Clear will be **Yes** or **No.**
- Maintain the relationship with Account table.

b) Insert some appropriate data in these tables.

Experiment No. – 10

Using the default table of Oracle, such as Emp and Dept.

a) Define a view according to the following output :

Deptno	NaxSal	MinSal	No. of emp
10	5000	1400	3
20	3000	800	5
30	2850	950	6

b) From the transaction table define a view of all deposits done in last 2 months.
c) Define the following table:

Project	
Account	MGR
A-2000	3101
B-2500	3102
C-3000	3103
O-0010	4101

Rate	
Empid	Ratehour
2101	21.5
2102	24
2103	18.5
2104	15.5
2105	14
3101	32
3102	36
3103	30
4101	42

Time Card			
Empid	Account	Period	Hours
2101	A-2000	1	20
2101	B-2500	1	40
2101	C-3000	1	20
2102	A-2000	1	30
2102	B-2500	1	50
2103	C-3000	1	32
2104	A-2000	1	80
2105	C-2500	1	24
2105	C-3000	1	56
3101	A-2000	1	20
3101	O-0010	1	60
3102	B-2500	1	40
3102	O-0010	1	40
3103	C-3000	1	40
3103	O-0010	1	40

Experiment No. – 11

a) Create a view which will give the information of the each employee rate/hour and they are details of their MGR's.
b) Create a view, which will give the information for each employee's total income.
c) Create a view, which will give the information of the total expenses for each account.

Experiment No. – 12

Using the default table of Oracle, such as Emp and Dept.

a) Produce a report which will look similar to the following. Make sure that format of the data/column, heading and specify page titles and footers.

Department	Job	Name	Hire Date	Monthly Salary	Annual Comm.	Total
ACCOUNTING	CLERK	MILLER	11/83	1,400.00		16,800.00
ACCOUNTING	MANAGER	CLERK	05/84	2,4500.00		29,400.00
ACCOUNTING	PRESIDENT	KING	07/84	5,000.00		60,000.00
RESEARCH	ANALYST	SCOTT	03/84	3,000.00		36,000.00
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b) From a Library Database produce a report which will give following reports.

1) Display all Borrowers and the books details they have taken.
2) Produce a report which will give the details of all.

Experiment No. – 13

Using the default table of Oracle, such as Emp and Dept.

Produce the following Report:

Deptno	Job	Empno.	Ename	Salary
10	Clerk	Empno.	Ename	Sal
		Empno.	Ename	Sal
	Analyst	Empno.	Ename	Sal
	President	Empno.	Ename	Sal
20	Clerk	Empno.	Ename	Sal
		Empno.	Ename	Sal
	----------	----------	----------	----------
30	----------	----------	----------	----------
	----------	----------	----------	----------

Produce the following Report:

Deptno	Job	Empno.	Ename	Salary
10	Clerk	Empno.	Ename	Sal
		Empno.	Ename	Sal
	Analyst	Empno.	Ename	Sal
	President	Empno.	Ename	Sal
				**********
				Total Sal
20	Clerk	Empno.	Ename	Sal
		Empno.	Ename	Sal
	----------	----------	----------	----------
				**********
				Total Sal
30	----------	----------	----------	----------

15

	----------	----------	----------	----------
				********** Total Sal

Experiment No. – 14

1> Write a PL/SQL block which will accept a value from the user and it will insert the factorial result into a table called Result.

2> Write a block which will accept an empno and check his salary, if it is less then 2000 then increment it by 20% of the salary.

Experiment No. – 15

1> Write a block which will accept a JOB from the user and check if this job occur once display proper message, if more then one display a message and if not exists in the company then NOT FOUND.

2> Write a block which will accept an empno and check his salary, if it is less then 2000 then increment it by 20% of the salary, if greater then raise user defined exception and if empno not exists then NOT FOUND.

3> Write a Procedure which will accept the value of the borrowed relation and before inserting in the borrowed table it will evaluate the data with required check and finally after insertion it will be commited.

GURNANAK INSTITUTE OF TECCHNOLOGY

Department of Computer Science & Engineering

3rd Year, 1st Semester, B.Tech

DBMS Lab.

LIST OF EXPERIMENTS:

Description of the table EMP:

Name	Null?	Type
EMPNO	NOT NULL	NUMBER(4)
ENAME		VARCHAR2(10)
JOB		VARCHAR2(9)
MGR		NUMBER(4)
HIREDATE		DATE
SAL		NUMBER(7,2)
COMM		NUMBER(7,2)
DEPTNO		NUMBER(2)

Description of the table DEPT:

Name	Null?	Type
DEPTNO	NOT NULL	NUMBER(2)
DNAME		VARCHAR2(14)
LOC		VARCHAR2(13)

Description of the table SALGRADE:

Name	Null?	Type
GRADE		NUMBER
LOSAL		NUMBER
HISAL		NUMBER

Description of the table BONUS:

Name	Null?	Type
ENAME		VARCHAR2(10)
JOB		VARCHAR2(9)
SAL		NUMBER
COMM		NUMBER

Experiment No. – 01

Using the default table of Oracle, such as Emp.

Write SQL queries for the following :

(a) List the names and code of all employees.
(b) List the names, employee code and department code of all clerks.
(c) List the names, employee code and salary of all managers.
(d) List the names, employee code and hiredate of all analysts.
(e) List the employees whose salary lies between 2000 and 3000.
(f) List the employees whose salary less than 1000.
(g) List the employees whose salary greater than 4000.
(h) List the employees whose salaries are 800, 1600 or 2450.
(i) List the names of all employees who are either clerks or salesman or analyst .
(j) List the employee those who are not getting commission.
(k) List the employee those who are getting commission.
(l) List the employee name starts with 'F'.

Experiment No. – 01

Write SQL queries for the following.

(a) List the names and job of all employees who have names exactly 5 characters in length.
(b) List all employees whose names start with 'G' .
(c) List all employees who name ends with 'N'.
(d) List the names and job of all employees who have names exactly 5 characters in length and ends with 'S'.
(e) List all employees who have not joined between 1/1/81 and 31/12/81.
(f) List all employees whose job does not start will "CL".
(g) List all managers who earn more than Rs. 4000/-.
(h) List all clerks and salesman who earn more than Rs. 1600/-
(i) List the names and salaries of all employees who were joined as manager during 1981.

Experiment No. – 02

For the EMP relation, frame the following queries using SQL.

(a) Calculate the average salary of all employees.
(b) Calculate the average salary of all Managers.
(c) Calculate the total salary of all employees.
(d) Calculate the total salary of all managers.
(e) Find the minimum salaries earned by the employees.
(f) Find the maximum salaries earned by the employees.
(g) Find the minimum salaries earned by a clerks.
(h) Find the maximum salaries earned by a salesman.
(i) Find the minimum and maximum and average salaries earned by a employees.
(j) Find the minimum and maximum and average salaries earned by a clerks.
(k) List the total number of employees and the average salaries of the different departments.
(l) Calculate total number of employees.
(m) Calculate total number of managers.
(n) Calculate the number of employees who are not getting any commission.
(o) Calculate the number of employees who are getting any commission.
(p) List the details of all managers in ascending order of joining dates.
(q) List the average salaries for each different job.
(r) Display the minimum, maximum, and average salaries for each job group.
(s) Find all departments which have less than 3 employees.
(t) List the details of the employees in ascending order of department number, and within each department, in descending order of salary.
(u) Display the name, deptno and annual salary of each employee in order salary and deptno.
(v) Display the name of employee who earns maximum salary.
(w) Display the name of employee who earns minimum salary.
(x) Display the name of employee who earns maximum salary whose job is salesman.
(y) Display the name of employee who earns minimum salary whose job is clerk.
(z) Display the department number whose average salary is maximum.

(s) Find all departments which have less than 3 employees.
(t) List the details of the employees in ascending order of department number, and within each department, in descending order of salary.
(u) Display the name, deptno and annual salary of each employee in order salary and deptno.
(v) Display the name of employee who earns maximum salary.
(w) Display the name of employee who earns minimum salary.
(x) Display the name of employee who earns maximum salary whose job is salesman.
(y) Display the name of employee who earns minimum salary whose job is clerk.
(z) Display the department number whose average salary is maximum.

Experiment No. – 04

Using the default table of Oracle, such as Emp and Dept.

Write SQL queries for the following ?

(a) List all employee names, dept name and the city, in department name order.
(b) List all employee name, dept number, dept name and salary.
(c) List all employees working in Dallas in descending order of salary.
(d) List all employee's name, job, salary and department name for everyone in the company except clerks. Sort the report with respect to job and salary.
(e) List all employee names who work in the same city as an employee named 'FORD'.
(f) Display the name of the dept that has no employee.

Experiment No. – 05

a) List the employees belonging to the department 20.
b) List the name and salary of the employees whose salary is more than 1000.
c) List the employee number and the name of the manager.
d) List the names of the clerks working in the department 20.
e) List the name of the analysts and salesman.
f) List the details of the employees who have joined before the end of September 81.
g) List the names of the employees ho are not managers.
h) List the name of the employees whose employee numbers 7369,7521,7839,7934,7788.
i) List the employee details not belonging to the department 10,30 and 40.
j) List the employee names who have joined before 30th June'81 and after December '81.
k) List the name of the employee and designation (job) of the employee who does not report to anybody (who doesn't have manager).
l) List the different jobs (designations) available in the emp table.
m) List the employees not assigned to any department.
n) List the details of the employees whose salary is greater than 2000 and not eligible for commission.
o) List the employee names having 'I' as the second character.
p) List the name, salary and PF amount of all the employees (PF is calculated as 10% of salary).
q) List the employee number, name and salary in ascending order of salary.
r) Lists the employee name and hiredate in descending order of hiredate.
s) List the employee name, salary, PF, HRA, DA and gross salary;order the result in ascending order of gross.HRA is 50% of salary and DA is 30% of salary.

t) List the department number and the total salary payable in each department. List the jobs and number of employees in each job. The result should be in descending order of the number of employees.
u) List the total salary, maximum, minimum and average salary of the employee's job wise.
v) List the average salary from each job excluding manager.
w) List the average monthly salary for each job type within department.
x) List average salary for all departments employing more than five people.
y) List job of all the employees where maximum salary is greater than or equal to 3000.
z) List the total salary, maximum and minimum salary and the average salary of employees job wise for department number 20 and display only those rows having average salary greater than 1000.

Experiment No. – 06

a) List the employees earns more than any employee in CHICAGO.
b) List the name of the employee who works in the same department as SMITH.
c) List the name, employee number ,their manager name and manager number.
d) List the name of the employee job is same as 'CLARK'.
e) List the name of employee whose salary is more than 'TURNER'.
f) List the name of employee who joined after 'ALLEN'.
g) Display the name of the department whose job is 'SALESMAN'.
h) Display the name of the department in which 'FORD' works.
i) Display the name of the department whose salary is maximum.
j) Display the name of the city(location) in which 'SMITH' works.
k) Display the name of the city in which the manager works.
l) Display the grade of the employee named 'MARTIN'.
m) List the employees earns more than every employee in 'DALLAS'.
n) Display the name of the department which has no employee.
o) List name, employee number and the name, employee number of their managers' manager.
p) list the name of the employee who joined in the same year of 'ADAMS'.
q) list the name of the employee who joined in the same month of 'BLAKE'.
r) list the name of the employee who joined in the same date of 'ADAMS'.
s) List the name of the department who gets commission.

Experiment No. – 07

Write SQL queries for the following :

(a) List all employee who work in Dallas or have joined the company as manager before 82.
(b) List all employees who work in Boston and earn more than any employee working in Chicago.
(c) List name of the employee who earns the minimum salary.
(d) List all employees who work in the same post as Smith.
(e) List all employees who earn the lowest salary in their respective dept.
(f) List all employees who earn more than every employee in the 'Sales' department.
(g) Find the job with the highest average salary.

Experiment No. – 08

Write SQL queries for the following.

(a) List the names, jobs and salaries of employees whose salary is greater than the highest salary in Operations dept.
(b) Find the department is not having any employee.
(c) List the top 10 earners in the company.
(d) List the top 2 earner in each department.
(e) List the years and the number of people joining in that year.
(f) Give an increment of 20% to all employees who have joined before 1/1/82 or earner less than Rs. 3000/-.
(g) Display the name of the employees whose subordinate has subordinate.
(h) Display the name of the employees whose subordinate has not subordinate
(i) Display the name of the employees and their subordinate's subordinates.
(j) Display the name, salary of the employees who has got maximum and minimum salary in one row with proper heading.
(k) Display the department number, member of employees in each department and the total number of employees in the company.

Experiment No. – 09

1. Find the job, which exist in deptno 30 but not in 10.
2. Find the employees who earn the highest salary in each job type.(solve in two ways)
3. Find the most recently hired employees in each department.
4. List the department having no employees (using sub quarry, using outer join, using correlated subquary, and using set operation).
5. Display the employee names getting salaries greater than their managers.
6. Display the employee names getting salary greater than their dept. avg-sal.
7. Select the third highest earner in the emp table.
8. Display the name of the employee whose boss has a boss.
9. Check the uniqueness of the empno of the emp table.
10. Display the name of the employees who has more than two subordinates (solving two ways).
11. Delete the duplicate records from a table to make it single occurrence.
12. Add a new column in the dept table called no_of_emp(represents the number of employee). Now update this column value using the single command.
13. Display those employee names who has a manager (using exist clause).
14. Display employee no.-empname,deptno,number of the employees in the dept. and no. of the employee in the company for each employee in the emp table.
15. Display the names if more than two employees are reporting to his boss.
16. Display the employee name, deptno, salary, and avg. sal of the dept. and avg. sal of the company for each employee in the EMP table.

Experiment No : 10

(a) Create an Account table with the following attributes :
Acc_no(4), Acc_type(1), Cust_no1(6), Cust_no2(6), Opp_date.
(b) Create the same table using Not Null on all and Default on Opp_date constraint.
(c) Add a field called Balance(7,2) to the table Account.
(d) Increase the field of Acc_no to 6.
(e) Remove the constraint of Cust_no2.
(f) Disable the constraint of Acc_type.
(g) Remove the table from the database.

1. Create a table called CRICKTERS, with columns as specified below:

Column Name	Description
Country	Character string
Name	Character string (max length 20)
Runs	Number
Wickets	number
Catches	number
Date-of-birth	date

The *country* and *name* fields should be declared **NOT NULL.**

2. Modify the table **CRICKETERS** to

a) Add a field *centuries*, which will hold the number of centuries scored.
b) Add a field *fives*, which will hold the number at times he has taken five wickets in an innings.
c) A Boolean field *caption*, indicating whether the person is currently the caption of the team.

Use the DESC command to check the column defines.

Experiment No. – 11

a) Insert following information in the Account table that you have created in Experiment No 9.

Acc_no	Acc_type	Cust_no1	Cust_no2	Opp_date	Balance
S00001	S	C00001		20-FEB-98	2600
S00002	J	C00002	C00003	01-APR-98	14657
S00003	J	C00004	C00005	02-MAR-98	368
S00004	S	C00003		01-JAN-98	27000
S00005	F	C00006	C00007	01-JAN-98	51000
S00006	S	C00008		10-JUL-98	14562
S00007	F	C00009		25-MAR-98	12000
S00008	J	C00008	C00010	30-MAY-98	8765

b) Insert a value of Acc_no, Acc_type and Cust_no1 only.

Acc_no	Acc_type	Cust_no1	Cust_no2	Opp_date	Balance
S00009	J		C00012		

c) Use insert operation with substitution variables.

d) Delete the Joint Account who have balance less than Rs. 500.

e) Give extra bonus of 10% on balance those has more than Rs. 10000 and not Fixed Account.

3. It is necessary to create a table to contain information pertaining to a railway reservation system. Identify the columns of the table, their data types, and hence create the table using SQL.

Experiment No. – 12

a) Create a Transaction table with the following attribute :
Acc_no(4), T_date(date), T_type(1), T_mode(6), Cheque_no(7), Operator(20), Drawn_bank(30), T_amount(7,2), Clear(1).

- T_date should be **Sysdate.**
- T_type will be **Deposit** or **Withdraw.**
- T_mode will be **Cheque** or **Cash.**
- Clear will be **Yes** or **No.**
- Maintain the relationship with Account table.

b) Insert some appropriate data in these tables.

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S00006	S	C00008		10-JUL-98	14562
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- T_date should be Sysdate.
- T_type will be Deposit or Withdraw.
- T_mode will be Cheque or Cash.
- Clear will be Yes or No.
- Maintain the relationship with Account table.

b) Insert some appropriate data in these tables.

Experiment No. – 13

a) Create a table employee with the following attribute :

EMPNO	NUMBER(4)
ENAME	VARCHAR2(10)
JOB	VARCHAR2(9)
MGR	NUMBER(2)
D_O_J	DATE
SALARY	NUMBER(7,2)
COMM	NUMBER(7,2)
DEPTNO	NUMBER(2)

b) Make the EMPNO NOT NULL.
c) Increase the size of MGR by 2.
d) Make the EMPNO as primary Key (give the name of the constraint).
e) Make the JOB unique.
f) Drop the constraint on JOB.
g) DEPTNO can be any one 10,20,30.
h) Drop the constraint on DEPTNO.
i) Make the JOB, DEPTNO unique.
j) Drop the constraint on JOB, DEPTNO.

(After making the constraint each time you put a correct tuple and a wrong tuple and then the tuple).

Experiment No. – 14

a) Create a table Department with the following attribute :

DEPTNO	NUMBER(2)
DNAME	VARCHAR2(14)
LOC	VARCHAR2(13)

b) Make the DEPTNO NOT NULL.
c) Make the DEPTNO as primary Key (give the name of the constraint).
d) Make the DEPTNO of Employee table as foreign key with respect to DEPTNO of Department table.
e) Drop the table employee.
f) Create the employee table in assignment no 12 with empno primary key deptno foreign key with cascade option.

Experiment No. – 15

a) Create a table called PROJECTS, with columns as specified below. In addition, define PROJECTID as the Primary key column and ensure that P_END_DATE dates are not earlier than P_START_DATE dates.

Column Name	Data Type	Size
PROJECTID	NUMBER	4
P_DESC	VARCHAR2	20
P_START_DATE	DATE	
P_END_DATE	DATE	
BUDGET_AMOUNT	NUMBER	7,2
MAX_NO_STAFF	NUMBER	2

b) Create a second table, ASSIGNMENTS, as shown below. Define its PROJID column as a foreign key which references the PROJECTS table. Your table's EMPNO column is a further foreign to Employee, these two columns should not allow NULL values (PROJECTID and EMPNO).

Column Name	Data Type	Size
PROJECTID	NUMBER	4
EMPNO	NUMBER	4
A_START_DATE	DATE	
A_END_DATE	DATE	
BILL_RATE	NUMBER	4,2
ASSIGN_TYPE	VARCHAR2	2

c) Use the DESCRIBE command to check the column definitions.

Experiment No. – 16

Using the default table of Oracle, such as Emp and Dept.

a) Define a view according to the following output :

Deptno	NaxSal	MinSal	No_of_emp
10	5000	1400	3
20	3000	800	5
30	2850	950	6

b) From the transaction table define a view of all deposits done in last 2 months.

Database Management System Assignment.

Paper Code: EC704C

1. A database is being constructed to keep track of the teams and games of a sports league.A team has a number of players,not all of whom participate in each game.It is desired to keep track of the players participating in each game for each team,the positions they played in that game,and the result of the game.Design an ER schema diagram for this application,stating any assumptions you make.Choose your favorite sports(eg-soccer,baseball,football).

2 Draw the ER diagram of University Registration System.

3 Write the queries for the following:

i)Select all the columns of a table Employee.

ii)Display the last names of all employees where the third letter of the name is an 'a'.

iii)Create a query to display the employee last name and department numberfor employee number 176.

iv) Display the last name and department number of all employees in departments 20 and 30 in alphabetic order by name.

v)Display the employee last name,job id,salary of an employee.order the query in ascending order according to the salary they get.