DBMS LAB MANUAL

1. Write a SQL query to create a table named employee including following columns

(EMPLOYEE_ID INT(10), EMPLOYEE_NAME VARCHAR (50), DEPT_NAME VARCHAR(50), SALARY INT)

a. Insert ten records into the employee table.
b. Display all record of the employee table.
c. Add a column named Date of joining to the employee table.
d. Delete the column employee_address.
e. Rename the column employee_id to job_id.
f. Display all employees who joined after '2022-01-01' and have a salary greater than 60000.
g. Find the average salary of employees for each department.
h. Create a new table named department with columns DEPT_NAME and LOCATION, and add a foreign key constraint on DEPT_NAME in the employee table.
i. Write a query to find the department with the highest average salary.
j. Create a trigger to automatically set the Date_of_Joining to the current date when a new employee is inserted.
k. Write a query to rank employees based on their salary within each department.
l. Write a query to display employees whose names start with 'A' and end with 'r'.
m. Write a query to find the total salary paid to each department.

2. Create book table with following structure

Name	Type
Book_id	integer
Book_title	varchar
Book_author	varchar
Publish_year	integer
Publisher_name	varchar

a) Insert ten record into the table.
b) Add a column named BOOK_PRICE.
c) List of all records of book table grouped by Book_id.
d) Update the record where publish_year is 2010.
e) Delete the row of book table where publish_year is 2008.
f) Drop publisher_name column of book table.

3. Create Book table with following structure

Name	Type
S_name	varchar
S_address	varchar
rollno	integer
Course	varchar
DOB	date
Gender	varchar

a) Find details of all student who are from Bhubaneswar.
b) Find name and date of birth of all student.
c) Find name and address of all students whose date of birth is before 1-1-2001.
d) Add a column age.
e) Find name of all student who are doing course MSC.
f) Display all records.
g) Count the number of students **in each course** and display the result.
h) Update the **age** column based on the **current date and DOB** of each student.

4. Create a table of employee and Department with following structure.

Employee

Name	Type
emp_code	int
emp-name	varchar
desg	varchar
Head	Int
DOJ	Date
Basic	float
Dept_Code	Int

Department

Name	Type
Dept_code	Int
Dept-name	varchar

a) Insert Five Record into the table.
b) List the name of the assistance working in department.
c) List the name of employee not belonging to department 10 and 40.
d) List different positions available in the employee table.
e) List the name of those employee whose name either start or end with R.
f) List the name, salary and PF (10% of basic) of all employees.
g) List the name, Salary, pf (10% of basic), hra (30% of basic), da(50% of basic) and gross of all employees. The result should be in descending order of gross.
h) List average salary and no. of employee working in each department.
i) List the average salary of those department which employing at least 4 employees.

5. Create a table of supplier

Name	Type
Sno	Int
Sname	Varchar
Scity	Varchar
Turn_over	Int

a) Insert five records into the table.
b) Get full details of all supplier.
c) Get Sno and turn_over in descending order.
d) Get Sno and Sname who are not from cuttack.
e) Get the details of supplier who operate from Mumbai with turnover 7.5 Lakhs.
f) Get the name and city of supplier whose name begins with C.
g) Get the supplier number whose turnover is null.
h) Get the supplier no. of supplier who are located in the same city as cuttack .

6. Create a table named employee

Name	Type
Emp_name	Varchar
Emp_salary	Integer

a) Insert five records into table.
b) Display the total salary paid to the employee in employee table.
c) Diplay the average salary paid to employee.
d) Find the max salary given to employee.
e) Find the minimum salary given to employee.

7. Create a State and District Table

State

Name	Type
State_id	Int
State_name	Varchar
Population	Int
Area	float

District

Name	Type
dist_id	Int
dist_name	Varchar
dof	date
area	float
State_id	Int

a. Find list of districts of State Odisha.
b. Find the name of most populated district of Bihar.
c. Find the name of States in descending order of area.
d. Find the name of State which has maximum number of district.
e. Find the district of all States formed after 1-1-2002.
f. Find all districts if Odisha whose name starts with S.
g. Find smallest district of all States in terms of area.

8. Create a table Student and Mark

Student

Name	Type
S_name	Varchar
Rollno	Int
Address	Varchar
Dob	date

Mark

Name	Type
rollno	Int
P1_mark	Float
P2_mark	Float

a. Insert five records into the table.
b. Display the records from table Student where dob is equal to '10-Mar-1990' and rollno is not 5.
c. Display the records from Student table where do is not in between '10-Mar-1980' and '10-Mar-1990'.
d. Display the records from the table Student where the first alphabet of the name is 'S' or 'a'.
e. Display the records from table mark where P1_mark = 9.
f. Display the records from the table mark where P1_mark = 9 and P2_mark = 9.9.
g. Add another field tot_mark and replace this field as sum of P1_mark and P2_mark for al rows.

9- Create a Table as Bank and the Details are:

S.No	Cust_Name	Acc_No	Balance	Cust_Branch
1	Ramesh	12378	100000	Sambalpur
2	Sam	12367	152500	Angul
3	Harish	12345	250000	Bhubaneswar

Perform the following:

a) Simple select
b) Select with where clause
c) Select with comparison operator '7'
d) Select with between in the field Balance
e) Update the Cus_Branch second row as Burla

10- Create a table as book and the details are:

S.No	Book_Name	Author	Price	Publisher
1	DBMS	Seema Kedhar	250	Charulatha
2	TOC	John Martin	400	Tata MC Graw Hill
3	C	E.Balagurusamy	300	Technical

Perform the following:

a) Commit the table Book
b) Create a save point for the table Book as B
c) Rollback the table Book after inserting 4 & 5 row
d) Increase the Book Price of DBMS by 15%

11- Create employee table and Department table.

DEPT (DEPT_NO, DEPT_NAME, LOC)

EMP(EMP_NO, E_NAME, JOB,MGR_ID, HIREDATE, SAL, COMM, DEPT_NO) [MGR_ID: MANAGER ID]

a) Update the employee salary by 15% whose experience is greater than 10 years.
b) Delete the employee, who completed 30 years of service.
c) Create a view, which contain employee names and their manager.
d) Display the **department-wise highest paid employee**, including their name, department, and salary.
e) Write a query to display the **total salary paid by each department**, and only show departments where the **total salary exceeds 100,000**.

12- Using the above table perform the following:

a) Display the employee details, departments that the departments are same in both the emp and dept.
b) Display the employee name and department name by implementing a left outer join.
c) Display the employee name and department name by implementing a right outer join.
d) Display the details of those employee who draw the salary greater than the average salary.
e) Develop a query to grant all privilages of employee table in to department table.
f) Develop a query to revoke some privilages of employee table in to department table.

13- Create sales table with following fields

(SALES_NO, SALES_NAME, BRANCH, SALES_AMOUNT, DOB)

a) Insert five records.
b) Calculate total sales amount in each branch.
c) Calculate average sales amount in each branch.
d) Display all the salesman DOB who are born in the month of December.
e) Display the name and DOB of salesman in alphabetical order of the month.

14- Consider the following relations for a transport management system application:

BUS (ROUTE_NO, SOURCE, DESTINATION)

DRIVER (D_ID, D_NAME, DOB, GENDER)

ASSIGN_ROUTE (D_ID, ROUTE_NO, JOURNEY_DATE)

a) Insert five records.
b) Include constraints that the Route no starts with letter 'S' and Gender of driver is always male.
c) Display the list of details of driver who have traveled more than three times on the same route.
d) Create a sequence named DRIVER_SEQUENCE that will get incremented by 1. Use the created sequence while inserting D_ID into Driver table.
e) Create a view that displays the D_ID, D_NAME, assigned for Route no 'S^5'.

15- Create the following tables.

CUSTOMER (CUST_ID, CUST_NAME, ADDR, PH_NO, PAN_NO)

LOAN (LOAN_ID, AMOUNT, INTEREST, CUST_ID)

a) Insert five records
b) Display the CUST_NAME having both loan and account.
c) Display number of loans, the sum of loan amount of a particular customer named "Leema".
d) Display the customer name who does not hold any account nor taken any loan.
e) Add a column named NUMBER_OF_LOANS.
f) Display the name of customers who have taken loan more than RS.50000.

16- Create following table

VOTER (VOTER_ID, VOTER_NAME, GENDER, BOOTH_ID, CHECK_VOTE) [CHECK_VOTE IS 1 (VOTED)

OR 0 (NOT VOTED)]

BOOTH (BOOTH_ID, LOCATION)

a) Insert five records.
b) List the count of male voters voted.
c) Display the overall count of voters voted in the election.
d) Display the BOOTH_ID, LOCATION and count of voters voted.

17. Create Following table:

USER (USER_ID, NAME, DEPT, BOOK_ID, ACCDATE)

BOOK (BOOK_ID, BOOK_NAME, AUTHOR, PUBLICATION, PRICE)

a) Insert five Records.
b) List the name of user who had accessed the costliest book.
c) List the userid and count of books accessed by the user
d) List the books published by Wiley publisher.
e) List the **users who accessed books authored by more than one author** (Assume authors can be comma-separated or use separate rows if normalized).
f) Display the **total price of books accessed by each department**, sorted in **descending order** of total price.

18- Create the following table:

PRODUCT (PRODUCT_ID, PRONAME, PRICE, STOCK)

SALES (SALE_ID, PRODUCT_ID, QTY, CUSTNAME)

PURCHASE (PURCHASE_ID, PRODUCT_ID, QTY, SUPPLIER NAME)

a) Insert five records
b) Update the stock of all product by 10.
c) Display list of product details (productid, proname, price) supplied by a particular supplier("ABC").
d) Display productid and sum of quantity purchased.
e) Display Product details (Productid, proname, price) of products which are purchased as well as sold.

19. Create following table.

PASSENGER (PNAME, PNR_NUMBER, AMOUNT, DOJ, STATUS)

RESERVED FOR (PN_NUMBER, TRAIN_NO)

TRAIN (TRAIN_NO, TRAIN_NAME, SOURCE, DESTINATION)

TICKET (TICKET_NO, DOJ, AMOUNT, TRAIN_NAME)

a) Insert 8 Records.
b) List train numbers along with train names that travels from Bengaluru to Chennai on journey dates between 13-November-2015 and 15-November-2015.
c) Get the total number of tickets Reserved on each date of journey.
d) List the ticket numbers whose amount is more than the amount of every ticket on 13 November-2016.
e) Add a **primary key constraint** to PASSENGER on PNR_NUMBER.
f) Add a **foreign key** in RESERVED_FOR referencing PASSENGER(PNR_NUMBER) and TRAIN(TRAIN_NO).
g) Display the list of all passengers and their respective train names using proper joins.
h) Display the **train name(s)** which have the **maximum number of passengers** reserved.

i) Write a query to **delete** all tickets whose journey date is before **1-January-2015**.
j) Write a query to **update** the status of all passengers whose journey is scheduled for a future date (greater than today's date) to 'Confirmed'.
k) Display passengers who **haven't reserved any train** (use LEFT JOIN or NOT EXISTS).
l) List all trains and the number of passengers traveling in each train, even if no one is booked yet (use LEFT JOIN).
m) Create a view named train_reservations to show TRAIN_NAME, PNAME, DOJ, and STATUS.
n) Create a **trigger** to automatically set the passenger STATUS to "Pending" when a new record is inserted without a value.
o) Write a query to find **duplicate bookings** by the same passenger (same PNR_NUMBER, same DOJ, same TRAIN_NO.

20. Create following table

TOURIST (TOURIST_ID, TOURIST_NAME, DOB, ADDRESS)

TRAVELS ON (TOURIST_ID, TOUR_ID)

TOUR (TOUR_ID, TOUR_NAME, TOUR_TYPE, AGENT, AMOUNT)

a) Insert Eight Records.
b) Show the tour details in ascending order of tour name and
c) descending order of agent.
d) Display least and highest tour package amount offered by each travel agent.
e) list tourist names along with there in tour names and package amount whose age is equal to 25 years.
f) Display tour names whose package amount is less than the package amount of every tour offered "Bharat agency".
g) Add a primary key to each table and appropriate foreign keys between TRAVELS_ON, TOURIST, and TOUR.
h) Display all tourists who have not yet enrolled in any tour.
i) Display the number of tourists registered for each tour, sorted by the highest number first.