**Practical File**

**DBMS LAB**

**(BCA-176)**

Submitted in partial fulfilment of the requirements for the

award of the degree of

**Bachelor of Computer Applications**

**Guru Gobind Singh Indraprastha University, Delhi**

Submitted to: Submitted by:

* Mr. Ashish Nayyar (Professor) Divyansh Jha
* Dr. Harmeet Malhotra (Asst. Professor) Enrolment no – 07713702021



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| **1** | **1.1 Introduction To Oracle:**  **1.2 Oracle Versions:**  **1.3 Current Version:-**  **1.4 Login Procedure:-** |  |  |
| **2** | **2.1 History of SQL and component languages:**  **1. Data Definition Language (DDL)**  **2.Data Manipulation Language (DML)**  **3. Data Control Language (DCL**  **2.2 SQL Datatypes** |  |  |
| **3** | **3.1 SQL DDL COMMANDS SYNATX**  **1. CREATE command syntax with column level constraints**  **2. CREATE command syntax with table level constraints**  **3. ALTER to add column, remove column, add constraint and remove constraint**  **4. MODIFY**  **5. DROP**   1. **TRUNCATE** 2. **RENAME (Column and Table)** |  |  |
| **4** | **3.2 SQL DDL EXERCISE1**   1. **Create a table student containing a unique roll no., address, date of birth where year should be greater than 1992, phone no., course which should only be either MCA or MBA.** 2. **Create a table marks containing roll no. as foreign key from student table, exam date, exam name and marks of 3 subjects.** 3. **Insert atleast 10 records in above tables** 4. **Alter student table to add two new column city& hobby with city name from four fixed.** 5. **Alter marks database table to add new percent column.** 6. **Drop column hobby from student table.** 7. **Rename student table to stud table.** |  |  |
| **5** | **create table client with following columns**  **Client\_id varchar(6),**  **name varchar(25),**  **city varchar(20),**  **pincode int(8),**  **state varchar(5),**  **balance int(10,2)**  **Describe the structure of above table client?**  **Insert 10 rows into given tables?**  **Write a command show all tables?**  **List all the clients from table client?**  **List clients located in mumbai for table client?**  **Find the names of client whose balance is 30,000 in client table** |  |  |
| **6** | **4.1 Write down general syntax of following commands and explain with example**   1. **INSERT** 2. **INSERT with &** 3. **INSERT with NULL values** 4. **UPDATE** 5. **DELETE** 6. **SELECT & SELECT WITH WHERE** 7. **SELECT USING OPERATORS (=, <,>,<>, <=, >=, AND , OR , NOT , BETWEEN, IN ,LIKE)** |  |  |
| **7** | **4.2 SQL DML EXERCISE**  **1. Find details of all students of 'MCA'**  **2. Find details of all students between 1990 to 2014**  **3. Find name and roll no of all students with middle name 'Singh'**  **4. Find student scoring marks below 70 in any one subject.**  **5. Find details of student have name starting with 'S'.**  **6. Find details of students having all subject marks between 75 and 90.**  **7. Find details of students having marks above 60 in all subjects.**  **8. Find the name, dob, age of all students having age>=20.**  **9. Delete all students record without dob.**  **10. Update City value in student table.**  **11. Find the name of the students living outside Delhi.**  **12. Update percentage in marks table (as (s1+s2+s3)/3).** |  |  |
| **8** | **Create a table Supplier with the following structure.**  **suplierid int(5);**  **name varchar(10);**  **S\_code int(5);**  **Deposit int(7);**  **Describe the above table after inserting 10 rows in the table supplier.**  **Add new columns pin code, city to the table supplier.**  **Change the size of pin code or the width of pincode to 6.**  **Add a primary key after table creation.**  **Add a not null constraint.**  **Drop a not null constraint.**  **To add a primary key constraint to the table supplier** |  |  |
| **9** | **Create the following tables populate the tables and answer the queries given below: (Apply all integrity constraints applicable).**  **Sailors (Sid: integer, Sname:string, Rating:integer, Age:integer, Income:real)**  **Boats (Bid: integer, Bname:string, Color:string)**  **Reserves (Sid:integer,Bid:integer,dob:date, dot:date)** |  |  |
| **10** | **Execute the following DDL commands:**  **1. Create table Sailors & Boats.**  **2. Alter table sailors.**  **3. Add check constraints.**  **4. Insert data into table Sailors & Boats.**  **5. Create duplicate table for Sailor.**  **6. Use of Drop table command.**  **7. Create table Reserves with foreign key constraint.**  **8. Alter table Reserve - add composite primary key.**  **9. Insert data into Reserve tables.**  **10. Delete data from sailor or boat table.** |  |  |
| **11** | **Solve the following queries:**  **1. Find the names of all sailors with a rating above 8.**  **2. Find the Id of sailors who have reserved boat number 104.**  **3. Find the names of all sailors with income above 5000.**  **4. Find the names of all sailors with income between 5000 to10000.**  **5. Find the names of all ‘brown’ color boats.**  **6. Find the names of all sailors having either rating above 7 or income above 6000.**  **7. Find the details of all boats reserved from 1st Jan 2011 to 10th Jan 2011.**  **8. Find the names of sailors who have reserved a ‘black’ or ‘brown’ boat.**  **9. Find the details of sailors having names starting from ‘R’.**  **10. Find the details of sailors having names middle name as ‘Kr’ and rating between 5-6**  **11. Find the names of sailors whose names begins and ends with ‘S’ and has atleast three characters.**  **12. Find the ids of all ‘brown’ color boats in ascending order.** |  |  |
| **12** | **Create table customer with the fields;**  **customer id,**  **firstname,**  **lastname,**  **city,**  **state,**  **pincode;**  **Insert 10 rows into the table customer.**  **Display the content of customer table.**  **Display customer id and first name of customers.**  **Display first name, last name and state of all the customers.**  **Display all records from the customer table where the state is Delhi.**  **Display first names, last name of customers concatenated with state and name it as customer and their location.**  **Display the records of those customers who pin-code is not entered.**  **Display the states to which all the customers belong.**  **Select records of customers from Delhi having name rajeev.**  **Display records of customers of state Delhi or Mumbai;**  **Display the names of customer where customer id is 5.**  **Display details of customer expect the customer with customer id=5.**  **Retrieve all rows where customer\_id is between 10 and 50.**  **Display those rows where name begins with letter t.**  **Display all rows where first\_name contains the letter raj.** |  |  |
| **13** | **Queries on string and math functions**  **1. Show the details of sailors in Lower order**  **2. Show the details of boats in Upper order**  **3. Show the details of boats in initcap order.**  **4. Find concatenation between two words using ||**  **5. Find concatenation between two words using concat**  **6. Find the position of letters in a word.**  **7 Find first five letters in a word**  **8. Perform ltrim and rtrim on a string**  **9. Find ASCII code in a word**  **10. Find length of any string.**   1. **Perform lpad & rpad on a string** |  |  |
| **14** | 1. **Perform round, truncate of 50.789.** 2. **Perform ceil of 50.789.** 3. **Perform abs of 50.789, 50.90000000.** 4. **Perform power function.** 5. **Find square root of 36.** 6. **Find 50 mod 100.** |  |  |
| **15** | 1. **Find the date 3 months from the today** 2. **Find last day of month.** 3. **Find next day of month.** 4. **Find the month between of year.** 5. **Find the date 15 days from the current date.** 6. **Convert the date in character to date format.** 7. **Print the date in dd-mm-yy format.** |  |  |
| **16** | **7.1 General syntax and notes on types of Join**  **1     Equi join**  **2     Non-equi join**  **3     Self join**  **4     Natural join**  **5     Cross join**  **6     Outer join** |  |  |
| **17** | **7.2 Queries on JOINS**  **1.Perform the equijoin on sailor and reserve table**  **2.Perform the inner join on boat and reserve table**  **3.Perform the outer join on sailor and reserve table**  **4. Perform the equijoin on sailor, boat and reserve table**  **5. Find the details of sailors who have reserved boat number not as 104.**  **6. Find the names of sailors who have reserved a ‘black’ or ‘brown’ boat.**  **7. Find the color of boats reserved by ‘Sam’.**  **8. Find the names of sailors who have reserved atleast one boat.**  **9. Find the sids of sailors who have a rating 5 or have reserved boat number 101.**  **10. Find the names of sailors who have not reserved a black boat.**  **11. Find the names and sids of sailors whose rating is better than some sailor called Lobo.**  **12. Find the sailors with highest rating.**  **13. Find the names and sids of sailors who have reserved all boats.** |  |  |
| **18** | **7.3 Group by, having clause, group value functions**  **14. Find the average age of all the sailors.**  **15. Find the average age of sailors with a rating of 10.**  **16. Find the name and age of the oldest sailor.**  **17. Count the number of sailors.**  **18. Find the names of sailors who are younger than the oldest sailor with a rating of 10.**  **19. Count the number of different sailor names.**  **20. Find the age of youngest sailor for each rating level.**  **21. Find the age of youngest sailor who is eligible to vote for each rating level with atleast two such sailors.**  **22. Find the average age of sailors for each rating level that has atleast two sailors.**  **23. Find those ratings for which the average age of sailors is the minimum of overall ratings.**  **24. Find the names of sailors who have reserved a ‘black’ or ‘brown’ boat.** |  |  |
| **19** | **Create table employee with following attributes**  **Emp\_no, emp\_name(notnull),salary(not null),phone\_number,designation,department no.**  **Insert 8 rows tuples in employee table.**  **Find average and total salary of all employees?**  **Find min salary of manager?**  **Find max salary of the manager?**  **How many employees are managers find out?**  **Add 50 % salary to the salary column and name it as HRA?**  **Count the total no of employees.**  **Count the no departments available.**  **Count the no of employees in each department.**  **Update the commission to 10% of salary for all the employees having salary greater than 50,000?**  **Find the salary of lowest paid employees for each department?**  **Update the salary of all employees in department no 5 by hiking it by 15%.**  **Find out the different between highest and lowest salary of each department.**  **List average salary of all the departments which have more than 2 employees.**  **List type of designation off all the employees’ fair maximum salary is greater than equal to 40,000.**  **List average salary of each employee excluding manager.** |  |  |
| **20** | **Create table employee with fields empno(primary key), salary, dno(not null), dname, ename.**  **Insert 8 tuples in table employ.**  **Find the details of those employs whose salary is equal to MAX salary in the organization.**  **Find the details of those employs who earn less than AVG salary in organization.**  **Find department name where SCOTT works.**  **Find detail of those employs that drew more than avg salary in organization.**  **Find the details of those employs that drew the highest salary.**  **Find the details of the employ provided at least 2 people work in the department 30.** |  |  |
| **21** | **Create a table employee with the following attributes e.no(Primary key),ename,ecity,salary,dept\_no?**  **Insert 8 rows into the table employee?**  **Create a view having ename and city?**  **In the above view update the ecity to delhi where the ename is JOHN?**  **Create a view containg ename, city, deptno, salary?**  **Update the view by increasing the salary of all employees of dept no 10 by rs 5000?**  **Create view having details of employee working in dept no 10.**  **Create a view having grouping function max (salary), min (salary).**  **Update the above view set the max salary to 9000 and observes the result.**  **Drop the view.** |  |  |
| **22** | **1. Write a simple PL/SQL block to show the use of begin and end section.**  **2. Write a simple PL/SQL block of code to demonstrate the use of declare section.**  **3. Write a program to demonstrate the use of if-end if control**  **4. Write a PL/SQL block of code to demonstrate use of IF-THEN-ELSE-ENDIF control.**  **5. Write a PL/SQL block of code to demonstrate use of IF-THEN-ELSEIF-ELSE-ENDIF control.** |  |  |
| **23** | **6. Create a simple loop which displays the calculated values in a table format.**  **7. Write PL/SQL code to print the table of a number.**  **8.Write a PL/SQL block of code for inverting a given number using for loop.** |  |  |
| **24** | **9. Write a PL/SQL block of code to check whether a number entered by the user is Armstrong or not.**  **10. Write PL/SQL code to print the factorial of a number.** |  |  |
| **25** | **.11. Write PL/SQL code to print the pattern**  **\* \* \* \* \***  **\* \* \* \***  **\* \* \***  **\* \***  **\*** |  |  |
| **26** | **12. Write a PL/SQL block of code for demonstrating the use of implicit cursors.**  **13. Write a PL/SQL block of code for demonstrating the use of explicit cursors.**  **14. Write a PL/SQL block of code for demonstrating the use of cursors using while loop.**  **15. Write a PL/SQL block of code to retrieve all employee names and their salary from the table emp\_rec using cursor for loop.** |  |  |
| **27** | **16. Write a PL/SQL block of code to raise an exception for divide by zero.**  **17. Write a PL/SQL block of code for demonstrating the use of NO\_DATA\_FOUND exception handler** |  |  |
| **28** | **18. Write a PL/SQL block of code for demonstrating the use of DUP\_VAL\_ON\_INDEX exception handler**  **19.Write a PL/SQL block of code to raise an application error using numbered exception**  **20. Write a PL/SQL block of code to reraise an exception from different blocks.** |  |  |
| **29** | **21. Write a PL/SQL block of code demonstrating the use of procedures**  **22. Write a PL/SQL block of code demonstrating the use of functions** |  |  |
| **30** | **23. Write a PL/SQL block of code demonstrating the use of triggers(after)**  **24. Write a PL/SQL block of code demonstrating the use of triggers(before)** |  |  |