**PART-A**

**Program2:Product and Purchase**

**step1:creating table**

SQL>create table Product(PID Number(10) Primary Key,Name Varchar2(20) Not Null, Price Number(8,2));

SQL>desc Product;

SQL>create table Purchase(PO Number(10) Primary Key,PRODUCT\_ID Number(10) references Product(PID),Qty Number(5));

**step2:viewing all tables**

SQL>select table\_name,status from User\_tables;

**step3:insert into table**

SQL>insert into product(PID,NAME,PRICE)values(10,'PRINTER',20000);

SQL>insert into product(PID,NAME,PRICE)values(20,'KEYBOARD',15000);

SQL>insert into product(PID,NAME,PRICE)values(30,'MONITOR',20000);

SQL>insert into product(PID,NAME,PRICE)values(40,'TABLE',25000);

SQL>insert into product(PID,NAME,PRICE)values(50,'SCANNER',14000);

SQL>insert into purchase(PO,PRODUCT\_ID,QTY)values(101,10,25);

SQL>insert into purchase(PO,PRODUCT\_ID,QTY)values(102,40,20);

SQL>insert into purchase(PO,PRODUCT\_ID,QTY)values(107,30,40);

SQL>insert into purchase(PO,PRODUCT\_ID,QTY)values(104,40,50);

SQL>insert into purchase(PO,PRODUCT\_ID,QTY)values(105,40,10);

**step4:dislay product and purchase table**

SQL>select \*from product;

SQL>select \*from purchase;

**step5:update the product name for pid=40 as camera**

SQL>update product set Name='CAMERA' where PID=40;

SQL>select \*from product;

**step6:delete information about product whose pid=50**

SQL>DELETE from product where PID=50;

SQL>select \*from product;

**step7:perform saving and undoing**

SQL>insert into product(PID,NAME,PRICE)values(50,'MOBILE',35000);

SQL>insert into product(PID,NAME,PRICE)values(60,'LAPTOP',70000);

SQL>commit;

SQL>select \* from product;

SQL>savepoint S1;

SQL>insert into product(PID,NAME,PRICE)values(70,'TABLE',50000);

SQL>insert into product(PID,NAME,PRICE)values(80,'CHAIR',25000);

SQL>rollback to S1;

SQL>select \* from product;

**3)altering table dropping/Truncating/Renaming**

**step1:creating table**

SQL>create table lib(bid varchar2(8) primary key,title varchar2(20) not null,author varchar2(20),publication varchar2(20),year\_of\_publication number(4));

**step2:alter table name**

SQL>alter table lib rename to library;

**step3: Add a new column price with not null constraints to the existing table library**

SQL>alter table library add price number(8,2) not null;

**step4: All constraints and views that reference the column are dropped automatically**

SQL>alter table library drop column author cascade constraints;

**step5:rename bid to bookid**

SQL> alter table library rename column bid to bookid;

**step6:change the datatype of column year\_of\_publication of length 15**

SQL>alter table library modify year\_of\_publication varchar2(15);

**step7:Insert data into table**

SQL>insert into library values('SP001','DBMS','Skyward Publication','2022',300);

**step8: Truncate table to delete the records**

SQL>truncate table library;

**step9: drop table**

SQL>drop table library;

**Program(5-9):**

**creating table:**

**department table:**

SQL>create table dept(dno number(4) primary key,dname varchar2(20) not null,dlocation varchar2(20));

**employee table:**

SQL>create table emp(eno number(6) primary key,ename varchar2(20) not null,ebdate date,address varchar2(20),gender char,salary number(10) not null,deptno number(4) references dept);

**Project table:**

SQL>create table project(pno number(10) primary key,pname varchar2(20) not null,dnum number(4) references dept);

**works on table:**

SQL>create table works\_on(eno number(6) references emp not null,pnum number(10) references project not null,hours number(3,1) not null,primary key(eno,pnum));

**inserting into table:**

**department:**

SQL> insert into dept(dno,dname,dlocation)values(2,'Accounts','Jayanagar');

SQL> insert into dept(dno,dname,dlocation)values(4,'Research','Kengeri');

SQL> insert into dept(dno,dname,dlocation)values(5,'Admin','SouthEnd');

**Employee:**

SQL> insert into emp(eno,ename,ebdate,address,gender,salary,deptno)values(1001,'Anirudh','14-jan-1990','Banglore','M',45000,4);

SQL> insert into emp(eno,ename,ebdate,address,gender,salary,deptno)values(1004,'Lakshmi','4-mar-1998','Mysore','F',55000,4);

SQL> insert into emp(eno,ename,ebdate,address,gender,salary,deptno)values(1002,'Sinhcana','26-dec-1990','Manglore','F',50000,2);

SQL> insert into emp(eno,ename,ebdate,address,gender,salary,deptno)values(1007,'Prashant','26-jan-1989','Dharwad','M',20000,4);

SQL> insert into emp(eno,ename,ebdate,address,gender,salary,deptno)values(1003,'Vinay','26-nov-1990','Hubli','M',30000,2);

SQL> insert into emp(eno,ename,ebdate,address,gender,salary,deptno)values(1005,'Vidya','26-nov-1978','Hubli','F',35000,4);

SQL> insert into emp(eno,ename,ebdate,address,gender,salary,deptno)values(1006,'Prajwal','2-feb-1974','Banglore','M',65000,5);

SQL> insert into emp(eno,ename,ebdate,address,gender,salary,deptno)values(1008,'Rajesh','2-feb-2010','Banglore','M',25000,2);

**Project:**

SQL> insert into project(pno,pname,dnum)values(10,'erp',5);

SQL> insert into project(pno,pname,dnum)values(20,'Banking',2);

SQL> insert into project(pno,pname,dnum)values(30,'Connect\_tech',4);

SQL> insert into project(pno,pname,dnum)values(40,'Smart\_seek',5);

SQL> insert into project(pno,pname,dnum)values(50,'Finance',2);

SQL> insert into project(pno,pname,dnum)values(60,'Analytica',4);

SQL> insert into project(pno,pname,dnum)values(70,'Project\_research',4);

SQL> insert into project(pno,pname,dnum)values(80,'Smart\_search',4);

**works on:**

SQL> insert into works\_on(eno,pnum,hours)values(1001,10,4.5);

SQL> insert into works\_on(eno,pnum,hours)values(1002,10,6);

SQL> insert into works\_on(eno,pnum,hours)values(1008,10,4);

SQL> insert into works\_on(eno,pnum,hours)values(1006,20,4);

SQL> insert into works\_on(eno,pnum,hours)values(1004,20,8);

SQL> insert into works\_on(eno,pnum,hours)values(1005,40,8);

SQL> insert into works\_on(eno,pnum,hours)values(1003,50,8);

SQL> insert into works\_on(eno,pnum,hours)values(1007,60,5);

**5)**

a]how the resulting salaries if every employee working on the 'Research' Departments is given a 10 percent raise.

SQL>select e.eno,e.ename,d.dname,1.1\*e.salary as "INC\_SALARY" from emp e,dept d where e.deptno=d.dno and d.dname='Research';

b] Find the sum of the salaries of all employees of the 'Accounts' department, as well as the maximum salary,the minimum salary, and the average salary in this department.

SQL>select max(e.salary),min(e.salary),sum(e.salary),avg(e.salary) from emp e,dept d where e.deptno=d.dno and d.dname='Accounts';

**6]**

a]Retrieve the number of each employee Controlled by department number 5(use EXISTS operator).

SQL>select e.ename from emp e where exists(select d.dno from dept d where e.deptno=d.dno and e.deptno=5);

b]Retrieve the name of each dept and number of employees working in each department which has atleast 2 employees.

SQL>select d.dname,count(\*) from emp e,dept d where e.deptno=d.dno group by d.dname having count(\*)>=2;

**7)**

a] For each project,retrive the project number,the project name,and the number of employee who work on that project(use Group By)

SQL>select p.pno,p.pname,count(\*) as "no\_of\_emp" from project p,works\_on w where p.pno=w.pnum group by p.pno,p.pname;

b] Retrieve the name of employees who born in the year 1990

SQL>select ename,ebdate from emp where ebdate like'%-%-90';

**8)**

a]For each department that has more than five employees, retrive the department number and number of employees who are making salary more than 40000

SQL>select d.dname,d.dno,count(\*) as "No\_of\_Emp" from emp e, dept d where e.deptno=d.dno and e.salary>40000 and d.dno in(select deptno from emp group by deptno having count(\*)>=5) group by d.dno,d.dname;

b]For each department that has more than two employees,retrieve the departmwnt number and number of employees who are making salary more than 40,000

SQL>select d.dname,d.dno,count(\*) from emp e,dept d where e.deptno=d.dno and e.salary>40000 and d.dno in(select deptno from emp group by deptno having count(\*)>2) group by d.dno,d.dname;

**9)For each project on which more than two employees work,retrive the project number,project name and the number of employees who work on that project.**

a] select p.pno,p.pname,count(\*) as"No\_of\_Emp\_Working" from project p,works\_on w where p.pno=w.pnum group by p.pno,p.pname having count(\*)>2;