ROLL NUMBER : 19131A05P1 V SATYA SIVA LALITHA GAYATHRI BODA
SEC: CSE4

Part A

Aim:SQL commands:
i) SUBQUERIES(Multiple Subqueries, Nested subqueries)

Prerequisite: Oracle.

Outcome: Understanding different ways of writing subqueirs

Theory:
In SQL a Subquery can be simply defined as a query within another query. In other words we can say that a Subquery is a query that is embedded in WHERE clause of another SQL query.
Important rules for Subqueries:

- You can place the Subquery in a number of SQL clauses: WHERE clause, HAVING clause, FROM clause.
- Subqueries can be used with SELECT, UPDATE, INSERT, DELETE statements along with expression operator. It could be equality operator or comparison operator such as =, >, =, <= and Like operator.
- A subquery is a query within another query. The outer query is called as **main query** and inner query is called as **subquery**.
- The subquery generally executes first, and its output is used to complete the query condition for the main or outer query.
- Subquery must be enclosed in parentheses.
- Subqueries are on the right side of the comparison operator.
- ORDER BY command **cannot** be used in a Subquery. GROUPBY command can be used to perform same function as ORDER BY command.
- Use single-row operators with singlerow Subqueries. Use multiple-row operators with multiple-row Subqueries

Procedure:

1. Formulate the query for given problem.
2. Write the SQL query with proper input.
3. Execute the query.

Practice Exercise:

1. Write a query to display all the information of the employees whose salary is within the range 1000 and 3000.
2. Write a query to display all the information of the employees whose salary is within the range of smallest salary and 2500.
3. Display all the information of an employee whose id is any of the number 134, 159 and 183.
4. Write a query to display the name (first name and last name) for those employees who gets more salary than the employee whose ID is 163

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5. Write a query to display the name (first name and last name), salary, department id, job id for those employees who works in the same designation as the employee works whose id is 169.
6. Write a query to display the employee id, employee name (first name and last name) for all employees who earn more than the average salary.
7. Write a query to display the name (first name and last name), salary, department id for those employees who earn such an amount of salary which is the smallest salary of any of the departments.
8. Write a query to display the employee name (first name and last name), employee id and salary of all employees who report to Payam.
9. Write a query to display the department number, name (first name and last name), job and department name for all employees in the Finance department.
10. Write a query to display all the information of an employee whose salary and reporting person id is 3000 and 121 respectively.

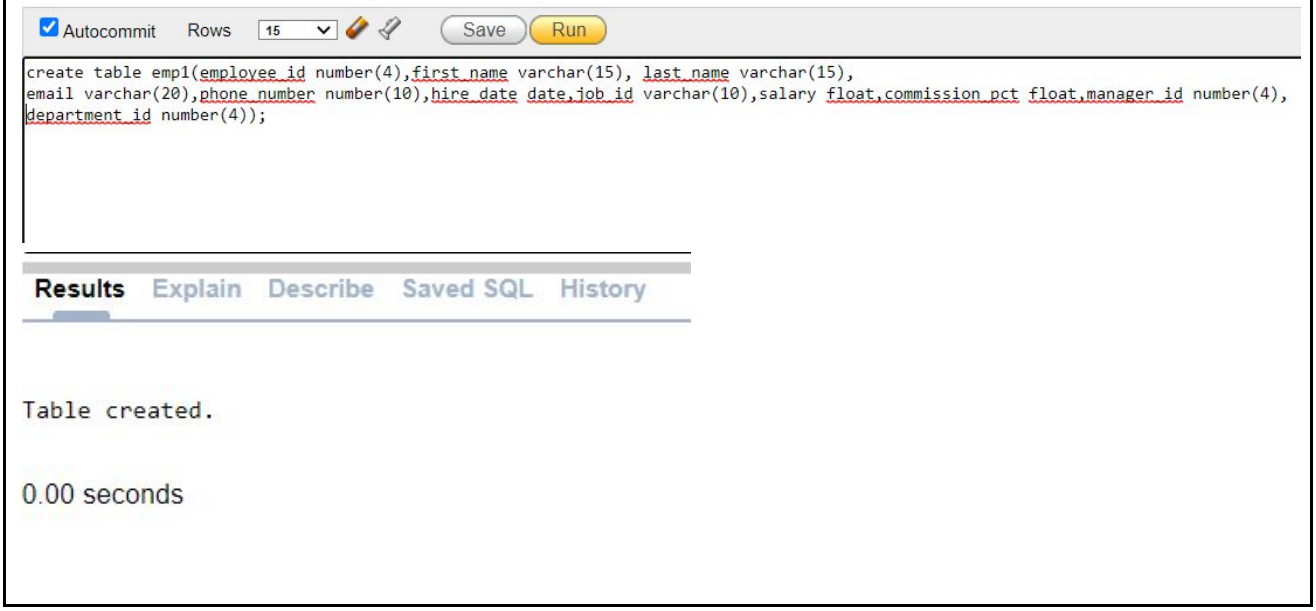
Instructions:

1. Write and execute the query in Oracle SQL server.
2. Paste the snapshot of the output in input & output section.

Part B

Code and Output:

Perform the operation and paste the running code here.



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Autocommit Rows 15 Save Run

```
insert into emp1 values(119,'Karen','Colmenares','KCOLMENA',5151274566,TO_DATE('10/08/2007','DD/MM/YYYY'),'PU_CLERK',2500.00,0.00,114,30);
insert into emp1 values(136,'Hazel','Philtanker','HPHILTAN',6501271634,TO_DATE('06/02/2008','DD/MM/YYYY'),'ST_CLERK',2200.00,0.00,122,50);
insert into emp1 values(132,'TJ','Olson','TJOLSON',6501248234,  TO_DATE('10/04/2007','DD/MM/YYYY'),'ST_CLERK',2100.00,0.00,121,50);
insert into emp1 values(134,'Michael','Rogers','MROGERS',6501271834,TO_DATE('26/08/2006','DD/MM/YYYY'),'ST_CLERK',2900.00,0.00,122,50);
insert into emp1 values(159,'Lindsey','Smith','LSMITH',1345729268,TO_DATE('10/03/2005','DD/MM/YYYY'),'SA_REP',8000.00,  0.30,146,80);
insert into emp1 values(183,'Girard','Geoni','GGEONI',6505079879,TO_DATE('03/02/2008','DD/MM/YYYY'),'SH_CLERK',2800.00,0.00,120,50);
insert into emp1 values(163,'Danielle','Greene','DGREENE',0114229268,TO_DATE('19/03/2007','DD/MM/YYYY'),'SA_REP',9500.00,0.15,147,80);
insert into emp1 values(169,'Harrison','Bloom','HBLOOM',6505079879,TO_DATE('23/03/2006','DD/MM/YYYY'),'SA_REP',10000.00,0.20,148,80);
insert into emp1 values(122,'Payam','Kaufling','PKAUFLIN',6505079879,TO_DATE('01/05/2003','DD/MM/YYYY'),'ST_MAN',7900.00,0.00,100,50);
insert into emp1 values(110,'John','Chen','JCHEN',6505079879,TO_DATE('28/09/2005','DD/MM/YYYY'),'FI_ACCOUNT',8200.00,0.00,108,100);
insert into emp1 values(112,'Jose Manuel','Urman','JMURMAN',6505079879,TO_DATE('07/03/2006','DD/MM/YYYY'),'FI_ACCOUNT',7800.00,0.00,108,100);
insert into emp1 values(187,'Anthony','Cabrio','ACABRIO',6501248234,TO_DATE('07/02/2007','DD/MM/YYYY'),'SH_CLERK',3000.00,0.00,121,50);
```

Results Explain Describe Saved SQL History

```
1 row(s) inserted.
```

0.00 seconds

Autocommit Rows 15 Save Run

```
create table dept1(
department_id number(4),
department_name varchar(20),
manager_id number(4),
location_id number(4));
```

Results Explain Describe Saved SQL History

```
Table created.
```

0.00 seconds

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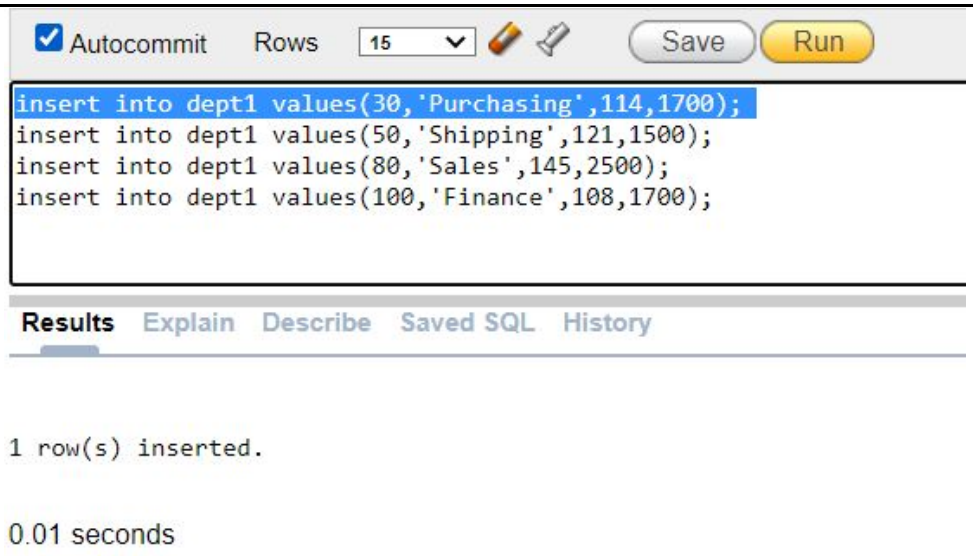

1.

```
select * from emp1 where salary in (select salary from emp1 where salary>1000 and salary<3000);
```

Results Explain Describe Saved SQL History

EMPLOYEE_ID	FIRST_NAME	LAST_NAME	EMAIL	PHONE_NUMBER	HIRE_DATE	JOB_ID	SALARY	COMMISSION_PCT	MANAGER_ID	DEPARTMENT_ID
119	Karen	Colmenares	KCOLMENA	5151274566	08/10/2007	PU_CLERK	2500	0	114	30
136	Hazel	Philtanker	HPHILTAN	6501271634	02/06/2008	ST_CLERK	2200	0	122	50
132	TJ	Olson	TJOLSON	6501248234	04/10/2007	ST_CLERK	2100	0	121	50
134	Michael	Rogers	MROGERS	6501271834	08/26/2006	ST_CLERK	2900	0	122	50
183	Girard	Geoni	GGEONI	6505079879	02/03/2008	SH_CLERK	2800	0	120	50

5 rows returned in 0.00 seconds Download

or

```
select * from emp1 where salary between 1001 and 2999;
```

Results Explain Describe Saved SQL History

EMPLOYEE_ID	FIRST_NAME	LAST_NAME	EMAIL	PHONE_NUMBER	HIRE_DATE	JOB_ID	SALARY	COMMISSION_PCT	MANAGER_ID	DEPARTMENT_ID
119	Karen	Colmenares	KCOLMENA	5151274566	08/10/2007	PU_CLERK	2500	0	114	30
136	Hazel	Philtanker	HPHILTAN	6501271634	02/06/2008	ST_CLERK	2200	0	122	50
132	TJ	Olson	TJOLSON	6501248234	04/10/2007	ST_CLERK	2100	0	121	50
134	Michael	Rogers	MROGERS	6501271834	08/26/2006	ST_CLERK	2900	0	122	50
183	Girard	Geoni	GGEONI	6505079879	02/03/2008	SH_CLERK	2800	0	120	50

5 rows returned in 0.00 seconds Download

2.

```
select * from emp1 where salary in (select salary from emp1 where salary>(select min(salary) from emp1) and salary<2500);
```

Results Explain Describe Saved SQL History

EMPLOYEE_ID	FIRST_NAME	LAST_NAME	EMAIL	PHONE_NUMBER	HIRE_DATE	JOB_ID	SALARY	COMMISSION_PCT	MANAGER_ID	DEPARTMENT_ID
136	Hazel	Philtanker	HPHILTAN	6501271634	02/06/2008	ST_CLERK	2200	0	122	50

1 rows returned in 0.00 seconds Download

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3.

```
select * from emp1 where EMPLOYEE_ID in (select EMPLOYEE_ID from emp1 where EMPLOYEE_ID=134 or EMPLOYEE_ID=159 or EMPLOYEE_ID=183);
```

Results Explain Describe Saved SQL History

EMPLOYEE_ID	FIRST_NAME	LAST_NAME	EMAIL	PHONE_NUMBER	HIRE_DATE	JOB_ID	SALARY	COMMISSION_PCT	MANAGER_ID	DEPARTMENT_ID
134	Michael	Rogers	MROGERS	6501271834	08/26/2006	ST_CLERK	2900	0	122	50
183	Girard	Geoni	GGEONI	6505079879	02/03/2008	SH_CLERK	2800	0	120	50
159	Lindsey	Smith	LSMITH	1345729268	03/10/2005	SA_REP	8000	.3	146	80

3 rows returned in 0.01 seconds Download

or

```
select * from emp1 where EMPLOYEE_ID=134 or EMPLOYEE_ID=159 or EMPLOYEE_ID=183.
```

Results Explain Describe Saved SQL History

EMPLOYEE_ID	FIRST_NAME	LAST_NAME	EMAIL	PHONE_NUMBER	HIRE_DATE	JOB_ID	SALARY	COMMISSION_PCT	MANAGER_ID	DEPARTMENT_ID
134	Michael	Rogers	MROGERS	6501271834	08/26/2006	ST_CLERK	2900	0	122	50
183	Girard	Geoni	GGEONI	6505079879	02/03/2008	SH_CLERK	2800	0	120	50
159	Lindsey	Smith	LSMITH	1345729268	03/10/2005	SA_REP	8000	.3	146	80

3 rows returned in 0.01 seconds Download

4.

```
select FIRST_NAME,LAST_NAME from emp1 where salary > (select salary from emp1 where EMPLOYEE_ID=163);
```

Results Explain Describe Saved SQL History

FIRST_NAME	LAST_NAME
Harrison	Bloom

1 rows returned in 0.00 seconds Download

5.

```
select FIRST_NAME,LAST_NAME,SALARY,DEPARTMENT_ID,JOB_ID from emp1 where JOB_ID = (select JOB_ID from emp1 where EMPLOYEE_ID=169);
```

Results Explain Describe Saved SQL History

FIRST_NAME	LAST_NAME	SALARY	DEPARTMENT_ID	JOB_ID
Danielle	Greene	9500	80	SA_REP
Harrison	Bloom	10000	80	SA_REP
Lindsey	Smith	8000	80	SA_REP

3 rows returned in 0.01 seconds Download

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6.

```
select EMPLOYEE_ID,FIRST_NAME,LAST_NAME from emp1 where SALARY > (select avg(SALARY) from emp1);
```

Results Explain Describe Saved SQL History

EMPLOYEE_ID	FIRST_NAME	LAST_NAME
163	Danielle	Greene
169	Harrison	Bloom
122	Payam	Kaufling
110	John	Chen
112	Jose Manuel	Urman
159	Lindsey	Smith

6 rows returned in 0.00 seconds Download

7.select EMPLOYEE_ID,FIRST_NAME,LAST_NAME from emp1 where SALARY in (select avg(salary) from emp1 group by department_id);

Autocommit Rows 15 Save Run

```
select EMPLOYEE_ID,FIRST_NAME,LAST_NAME from emp1 where SALARY in (select avg(salary) from emp1 group by department_id);
```

Results Explain Describe Saved SQL History

EMPLOYEE_ID	FIRST_NAME	LAST_NAME	EMAIL	PHONE_NUMBER	HIRE_DATE	JOB_ID	SALARY	COMMISSION_PCT	MANAGER_ID	DEPARTMENT_ID
119	Karen	Colmenares	KCOLMENA	5151274566	08/10/2007	PU_CLERK	2500	0	114	30
159	Lindsey	Smith	LSMITH	1345729268	03/10/2005	SA_REP	8000	.3	146	80

2 rows returned in 0.01 seconds Download

8.select * from emp1 where MANAGER_ID=(select EMPLOYEE_ID from emp1 where FIRST_NAME='Payam');

```
select * from emp1 where MANAGER_ID=(select EMPLOYEE_ID from emp1 where FIRST_NAME='Payam');
```

Results Explain Describe Saved SQL History

EMPLOYEE_ID	FIRST_NAME	LAST_NAME	EMAIL	PHONE_NUMBER	HIRE_DATE	JOB_ID	SALARY	COMMISSION_PCT	MANAGER_ID	DEPARTMENT_ID
136	Hazel	Philtanker	HPHILTAN	6501271634	02/06/2008	ST_CLERK	2200	0	122	50
134	Michael	Rogers	MROGERS	6501271834	08/26/2006	ST_CLERK	2900	0	122	50

2 rows returned in 0.00 seconds Download

9.select e.DEPARTMENT_ID ,FIRST_NAME ,LAST_NAME from emp1 e, dept1 d where d.DEPARTMENT_ID=e.DEPARTMENT_ID and department_name='Finance';

```
select e.DEPARTMENT_ID ,FIRST_NAME ,LAST_NAME from emp1 e, dept1 d where d.DEPARTMENT_ID=e.DEPARTMENT_ID and department_name='Finance';
```

Results Explain Describe Saved SQL History

DEPARTMENT_ID	FIRST_NAME	LAST_NAME
100	John	Chen
100	Jose Manuel	Urman

2 rows returned in 0.00 seconds Download

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10.select * from emp1 where SALARY=3000 and MANAGER_ID=121;

```
select * from emp1 where SALARY=3000 and MANAGER_ID=121;
```

Results Explain Describe Saved SQL History

EMPLOYEE_ID	FIRST_NAME	LAST_NAME	EMAIL	PHONE_NUMBER	HIRE_DATE	JOB_ID	SALARY	COMMISSION_PCT	MANAGER_ID	DEPARTMENT_ID
187	Anthony	Cabrio	ACABRIO	6501248234	02/07/2007	SH_CLERK	3000	0	121	50

1 rows returned in 0.01 seconds Download

Observation & Learning:

Learned how to write SUBQUERIES, Multiple Subqueries, Nested subqueries.

Conclusion:

Practiced and executed subqueries and nested queries successfully.

Questions:

1. Expain use of ALL, SOME, IN, and NOT IN.

Answers:

1. ALL operator is used to select all tuples of SELECT STATEMENT.

SOME operator compares a value to each value in a list or results from a query

IN operator allows you to specify multiple values in a WHERE **clause**

The SQL NOT IN command allows you to specify multiple values in the WHERE clause.

In operator will process the query if the attribute is in particular list of values while not in will process query if the attribute is not in particular list of values

Eg:Names of all employees whose dept no in list(50,80)

QUERY: select ename from emp where deptno in(50,80)

Eg:Names of all employees whose dept no not in list(50,80)

QUERY: select ename from emp where deptno not in(50,80

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