Name: Mahizha M

Reg No: 73772121158

Email -Id: mahizha.mk1474@gmail.com

SQL_JOINS

1)Innerjoin

a) Equijoins

AGENT_CODE	AGENT_NAME	WORKING_AREA
 A101	agent1	 Chennai
A102	agent2	Chennai
A103	agent3	Bangalore
A104	agent4	Bangalore
SQL> select * fro	om customers;	
CUSTOMER_CODE	CUSTOMER_NAME	CUSTOMER_AREA
 C101	Customer1	Chennai
C102	Customer2	Chennai
	Customer3	Chennai
C103	Customers	Chennai
C103 C104	Customer3 Customer4	Bangalore
C104 C105 SQL> select agent	Customer4 Customer5 ts.agent_name, custome	Bangalore Bangalore rs.customer_name, customers.customer_area from agen
C104 C105 SQL> select agent	Customer4 Customer5 ts.agent_name, custome	Bangalore Bangalore
C104 C105 SQL> select agent	Customer4 Customer5 ts.agent_name, custome	Bangalore Bangalore rs.customer_name, customers.customer_area from agen
C104 C105 SQL> select agent join customers o	Customer4 Customer5 ts.agent_name, custome on agents.working_area	Bangalore Bangalore s.customer_name, customers.customer_area from ager = customers.customer_area;
C104 C105 SQL> select agent join customers o AGENT_NAME	Customer4 Customer5 ts.agent_name, custome on agents.working_area CUSTOMER_NAME	Bangalore Bangalore rs.customer_name, customers.customer_area from ager = customers.customer_area; CUSTOMER_AREA
C104 C105 SQL> select agent join customers o AGENT_NAME agent1	Customer4 Customer5 ts.agent_name, custome on agents.working_area CUSTOMER_NAME	Bangalore Bangalore rs.customer_name, customers.customer_area from ager = customers.customer_area; CUSTOMER_AREA
C104 C105 SQL> select agent join customers of AGENT_NAME agent1 agent2	Customer4 Customer5 ts.agent_name, custome on agents.working_area CUSTOMER_NAME	Bangalore Bangalore rs.customer_name, customers.customer_area from ager = customers.customer_area; CUSTOMER_AREA
C104 C105 SQL> select agent join customers of AGENT_NAME agent1 agent2 agent1	Customer4 Customer5 ts.agent_name, custome on agents.working_area CUSTOMER_NAME Customer1 Customer1 Customer2	Bangalore Bangalore rs.customer_name, customers.customer_area from ager = customers.customer_area; CUSTOMER_AREA
C104 C105 SQL> select agent join customers of agent a	Customer4 Customer5 ts.agent_name, custome on agents.working_area CUSTOMER_NAME Customer1 Customer1 Customer2 Customer2 Customer2	Bangalore Bangalore rs.customer_name, customers.customer_area from ager = customers.customer_area; CUSTOMER_AREA
C104 C105 SQL> select agent join customers of agent lagent 2 agent 1 agent 2 agent 2 agent 2 agent 2 agent 2 agent 2 agent 1	Customer4 Customer5 ts.agent_name, custome on agents.working_area CUSTOMER_NAME Customer1 Customer1 Customer2 Customer2 Customer3	Bangalore Bangalore rs.customer_name, customers.customer_area from ager = customers.customer_area; CUSTOMER_AREA Chennai Chennai Chennai Chennai Chennai Chennai Chennai
C104 C105 SQL> select agent join customers of agent lagent 2 agent 1 agent 2 agent 2 agent 1	Customer4 Customer5 ts.agent_name, custome on agents.working_area CUSTOMER_NAME	Bangalore Bangalore rs.customer_name, customers.customer_area from ager = customers.customer_area; CUSTOMER_AREA Chennai Chennai Chennai Chennai Chennai Chennai Chennai Bangalore Bangalore
C104 C105 SQL> select agent join customers of agent lagent 2 agent 1 agent 2 agent 2 agent 1	Customer4 Customer5 ts.agent_name, custome on agents.working_area CUSTOMER_NAME	Bangalore Bangalore Bangalore rs.customer_name, customers.customer_area from ager = customers.customer_area; CUSTOMER_AREA

b)Non Equijoins

AGENT_CODE	AGENT_NAME	WORKING_AREA
 A101	agent1	Chennai
A102	agent2	Chennai
A103	agent3	Bangalore
A104	agent4	Bangalore
SQL> select * fr	rom customers;	
CUSTOMER_CODE	CUSTOMER_NAME	CUSTOMER_AREA
 C101	Customer1	 Chennai
C102	Customer2	Chennai
C102		
C102 C103	Customer3	Chennai
C103	Customer3 Customer4	Chennai Bangalore
C103 C104 C105 SQL> select agen	Customer4 Customer5 its.agent_name, custome	Bangalore Bangalore rs.customer_name, customers.customer_area from ager
C103 C104 C105 SQL> select agen	Customer4 Customer5 its.agent_name, custome	Bangalore Bangalore
C103 C104 C105 SQL> select agen join customers AGENT_NAME	Customer4 Customer5 ts.agent_name, custome on agents.working_area CUSTOMER_NAME	Bangalore Bangalore rs.customer_name, customers.customer_area from ager <> customers.customer_area; CUSTOMER_AREA
C103 C104 C105 SQL> select agen join customers AGENT_NAME 	Customer4 Customer5 ts.agent_name, custome on agents.working_area	Bangalore Bangalore rs.customer_name, customers.customer_area from ager <> customers.customer_area; CUSTOMER_AREA
C103 C104 C105 SQL> select agen join customers AGENT_NAME agent1 agent1	Customer4 Customer5 ts.agent_name, custome on agents.working_area CUSTOMER_NAME Customer4	Bangalore Bangalore rs.customer_name, customers.customer_area from ager <> customers.customer_area; CUSTOMER_AREA
C103 C104 C105 SQL> select agen join customers AGENT_NAME	Customer4 Customer5 its.agent_name, custome on agents.working_area CUSTOMER_NAME Customer4 Customer5	Bangalore Bangalore rs.customer_name, customers.customer_area from ager <> customers.customer_area; CUSTOMER_AREA Bangalore Bangalore Bangalore
C103 C104 C105 SQL> select agen join customers AGENT_NAME agent1 agent1 agent2	Customer4 Customer5 ts.agent_name, custome on agents.working_area CUSTOMER_NAME Customer4 Customer5 Customer4	Bangalore Bangalore rs.customer_name, customers.customer_area from ager <> customers.customer_area; CUSTOMER_AREA Bangalore Bangalore Bangalore Bangalore
C103 C104 C105 SQL> select agen join customers AGENT_NAME agent1 agent1 agent2 agent2 agent3	Customer4 Customer5 ts.agent_name, custome on agents.working_area CUSTOMER_NAME Customer4 Customer5 Customer4 Customer5 Customer5	Bangalore Bangalore rs.customer_name, customers.customer_area from ager <> customers.customer_area; CUSTOMER_AREA Bangalore Bangalore Bangalore Bangalore Bangalore Bangalore Bangalore Bangalore Bangalore
C103 C104 C105 SQL> select agen join customers AGENT_NAME agent1 agent1 agent2 agent2 agent3 agent3	Customer4 Customer5 ts.agent_name, custome on agents.working_area CUSTOMER_NAME Customer4 Customer5 Customer4 Customer5 Customer5 Customer1	Bangalore Bangalore rs.customer_name, customers.customer_area from ager <> customers.customer_area; CUSTOMER_AREA Bangalore Bangalore Bangalore Bangalore Bangalore Chennai
C103 C104 C105 SQL> select agen join customers AGENT_NAME agent1 agent1 agent2 agent2	Customer4 Customer5 ts.agent_name, custome on agents.working_area CUSTOMER_NAME Customer4 Customer5 Customer4 Customer5 Customer1 Customer2	Bangalore Bangalore rs.customer_name, customers.customer_area from ager <> customers.customer_area; CUSTOMER_AREA
C103 C104 C105 SQL> select agen join customers AGENT_NAME agent1 agent1 agent2 agent2 agent3 agent3 agent3	Customer4 Customer5 ts.agent_name, custome on agents.working_area CUSTOMER_NAME Customer4 Customer5 Customer4 Customer5 Customer1 Customer2 Customer3	Bangalore Bangalore rs.customer_name, customers.customer_area from ager <> customers.customer_area; CUSTOMER_AREA Bangalore Bangalore Bangalore Bangalore Chennai Chennai Chennai

2)Outerjoin

a)Leftouterjoin (or) Leftjoin

SQL> select * from	agents;		
AGENT_CODE	AGENT_NAME	WORKING_AREA	
A101	 agent1	 Chennai	
A102	agent2	Chennai	
A103	agent3	Bangalore	
A104	agent4	Bangalore	
A105	agent5	New York	
SQL> select * from	customers;		
CUSTOMER_CODE	CUSTOMER_NAME	CUSTOMER_AREA	
C101	Customer1	Chennai	
C102	Customer2	Chennai	
C103	Customer3	Chennai	
C104	Customer4	Bangalore	
C105	Customer5	Bangalore	
C106	Customer6	Delhi	
6 rows selected.			
SQL> select * from);	agents, customers whe	re agents.working_area = cust	comers.customer_area(+
AGENT_CODE	AGENT_NAME	WORKING_AREA	
CUSTOMER_CODE	CUSTOMER_NAME	CUSTOMER_AREA	
A101	 agent1	Chennai	
C101	Customer1	Chennai	
A102	agent2	Chennai	
C101	Customer1	Chennai	
A101	agent1	Chennai	
C102	Customer2	Chennai	

AGENT_CODE	AGENT_NAME	WORKING_AREA	
CUSTOMER_CODE	CUSTOMER_NAME	CUSTOMER_AREA	
A102 C102	agent2 Customer2	Chennai Chennai	
A101 C103	agent1 Customer3	Chennai Chennai	
A102 C103	agent2 Customer3	Chennai Chennai	
AGENT_CODE	AGENT_NAME	WORKING_AREA	
CUSTOMER_CODE	CUSTOMER_NAME	CUSTOMER_AREA	
A103 C104	agent3 Customer4	Bangalore Bangalore	
A104 C104	agent4 Customer4	Bangalore Bangalore	
A103 C105	agent3 Customer5	Bangalore Bangalore	
AGENT_CODE	AGENT_NAME	WORKING_AREA	
CUSTOMER_CODE	CUSTOMER_NAME	CUSTOMER_AREA	
A104 C105	agent4 Customer5	Bangalore Bangalore	
A105	agent5	New York	
11 rows selected.			

b)Rightouterjoin (or) Rightjoin

-	agents, customers wher	e agents.working_area(+) = customers.customer_	are
a;			
AGENT_CODE	AGENT_NAME	WORKING_AREA	
CUSTOMER_CODE	CUSTOMER_NAME	CUSTOMER_AREA	
A101	agent1	Chennai	
C101	Customer1	Chennai	
A101	agent1	Chennai	
C102	Customer2	Chennai	
A101	agent1	Chennai	
C103	Customer3	Chennai	
AGENT_CODE	AGENT_NAME	WORKING_AREA	
CUSTOMER_CODE	CUSTOMER_NAME	CUSTOMER_AREA	
A102	agent2	Chennai	
C101	Customer1	Chennai	
A102	agent2	Chennai	
C102	Customer2	Chennai	
A102	agent2	Chennai	
C103	Customer3	Chennai	
AGENT_CODE	AGENT_NAME	WORKING_AREA	
CUSTOMER_CODE	CUSTOMER_NAME	CUSTOMER_AREA	
A103	 agent3	Bangalore	
C104	Customer4	Bangalore	
A103	agent3	Bangalore	
C105	Customer5	Bangalore	
A104	agent4	Bangalore	
C104	Customer4	Bangalore	

AGENT_CODE	AGENT_NAME	WORKING_AREA
CUSTOMER_CODE	CUSTOMER_NAME	CUSTOMER_AREA
A104 C105	agent4 Customer5	Bangalore Bangalore
C106	Customer6	Delhi
11 rows selected.		

b)Fullouterjoin (or) Fulljoin

SQL> select * fro area;	m agents full join cu	stomers on agents.work
AGENT_CODE	AGENT_NAME	WORKING_AREA
CUSTOMER_CODE	CUSTOMER_NAME	CUSTOMER_AREA
A101	 agent1	 Chennai
C101	Customer1	Chennai
A102	agent2	Chennai
C101	Customer1	Chennai
A101	agent1	Chennai
C102	Customer2	Chennai
AGENT_CODE	AGENT_NAME	WORKING_AREA
CUSTOMER_CODE	CUSTOMER_NAME	CUSTOMER_AREA
A102	agent2	Chennai
C102	Customer2	Chennai
A101	agent1	Chennai
C103	Customer3	Chennai
A102	agent2	Chennai
C103	Customer3	Chennai
AGENT_CODE	AGENT_NAME	WORKING_AREA
CUSTOMER_CODE	CUSTOMER_NAME	CUSTOMER_AREA
A103	agent3	Bangalore
C104	Customer4	Bangalore
A104	agent4	Bangalore
C104	Customer4	Bangalore
A103	agent3	Bangalore
C105	Customer5	Bangalore

3)Selfjoin

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SQL> select a.agent_code, b.agent_name from agents a, agents b where a.working_area = b.wo
rking_area;
AGENT_CODE
                     AGENT_NAME
A101
                     agent1
                     agent1
A102
A101
                     agent2
A102
                     agent2
A103
                     agent3
                     agent3
agent4
A104
A103
A104
                     agent4
A105
                     agent5
9 rows selected.
```

4)Crossjoin

SQL> select agents.agent_name, customers.customer_name, customers.customer_area from agent s cross join customers;

AGENT_NAME	CUSTOMER_NAME	CUSTOMER_AREA	
agent1	 Customer1		
agent1	Customer2	Chennai	
agent1	Customer3	Chennai	
agent1	Customer4	Bangalore	
agent1	Customer5	Bangalore	
agent1	Customer6	Delhi	
agent2	Customer1	Chennai	
agent2	Customer2	Chennai	
agent2	Customer3	Chennai	
agent2	Customer4	Bangalore	
agent2	Customer5	Bangalore	
AGENT_NAME	CUSTOMER_NAME	CUSTOMER_AREA	
agent2	Customer6	Delhi	
agent3	Customer1	Chennai	
agent3	Customer2	Chennai	
agent3	Customer3	Chennai	
agent3	Customer4	Bangalore	
agent3	Customer5	Bangalore	
agent3	Customer6	Delhi	
agent4	Customer1	Chennai	
agent4	Customer2	Chennai	
agent4	Customer3	Chennai	
agent4	Customer4	Bangalore	
AGENT_NAME	CUSTOMER_NAME	CUSTOMER_AREA	
agent4	Customer5	Bangalore	
agent4	Customer6	Delhi	
agent5	Customer1	Chennai	
agent5	Customer2	Chennai	
agent5	Customer3	Chennai	
agent5	Customer4	Bangalore	
agent5	Customer5	Bangalore	
agent5	Customer6	Delhi	
30 rows selected.			

5)Naturaljoin

SQL> select agents.a	gent_name, customers.	customer_name,	customers.customer_area from agent
s natural join custo	omers;		
AGENT_NAME	CUSTOMER_NAME	CUSTOMER_AREA	
			
agent1	Customer1	Chennai	
agent1	Customer2	Chennai	
agent1	Customer3	Chennai	
agent1	Customer4	Bangalore	
agent1	Customer5	Bangalore	
agent1	Customer6	Delhi	
agent2	Customer1	Chennai	
agent2	Customer2	Chennai	
agent2	Customer3	Chennai	
agent2	Customer4	Bangalore	
agent2	Customer5	Bangalore	
AGENT_NAME	CUSTOMER_NAME	CUSTOMER_AREA	
agent2	Customer6	Delhi	
agent3	Customer1	Chennai	
agent3	Customer2	Chennai	
agent3	Customer3	Chennai	
agent3	Customer4	Bangalore	
agent3	Customer5	Bangalore	
agent3	Customer6	Delhi	
agent4	Customer1	Chennai	
agent4	Customer2	Chennai	
agent4	Customer3	Chennai	
agent4	Customer4	Bangalore	
AGENT_NAME	CUSTOMER_NAME	CUSTOMER_AREA	
agent4	Customer5	Bangalore	
agent4	Customer6	Delhi	
agent5	Customer1	Chennai	
agent5	Customer2	Chennai	
agent5	Customer3	Chennai	
agent5	Customer4	Bangalore	
agent5	Customer5	Bangalore	
agent5	Customer6	Delhi	
30 rows selected.			

SQL SUB QUERY

SQL> select * from customers where customer_area in (select working_area from agents where agent_code = 'A101' or agent_code='A104'); CUSTOMER_CODE CUSTOMER_NAME CUSTOMER_AREA C101 Customer1 Chennai C102 Customer2 Chennai C103 Customer3 Chennai Bangalore C104 Customer4 Bangalore C105 Customer5 SQL>