HANDWRITTEN SUBMISSION: (2 pages)

	22BCE 0682 MTWTF5
1	Sidehant Bhagat Date: YOUVA
(31)	
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*	solvert distinct convise in prom course.
	shows competed = tall and year = 200
	and course id in Cselect course id
amed 1	from courses where semester = spring and year = 2010);
- tacq	and year = 2010);
2013	THE CASE ASIN XX CITY
84	Query Si Con
- N	select id, name, location from 91A
	natural join IB.
- X	Comment on output:
1	After applying natural join between
at him	After applying natural join between
- Augusta	The natural join operations matches now
2 milas	from both IA and IB based on common
Sheep and the	attribute, ID. Only stone upone ID
and the	CX1848 in both tables will appear in
-	result. In this case >
	91 70
	It ID exists in one table but not
	other, it will not appear in result, as
	natural join only include nows
	with matching values in common
	25 507.1116.
	Result has common attribute ID,
	and attribute unique to each table such
	as Name from 91A and location from 91B
J. C. C. C. C. C.	
/	Natural Join results in a filtered
	output where only common on
	matching neconds between two tables are shown. This can be useful
	ale shown. This can be useful
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300	Sidohant Bhagest Date: YOUVA box merging related data but may exclude valuable records it they don't have a counterpart in other table.
3	 94 avoids dublication of common columns. Even though ID is in both 9th & 9tB, it is displayed only once in the result, making output more concise and readable.
***	Hence, natural join filtous data based on common attribute (ID), ensuring that only matching rows appear in the result. Non-matching rows are excluded, the common attribute is displayed only once. This method is straightforward but should be used when certain that only records with matching values in common columns are needed.

TOTAL BREAKDOWN OF QUESTIONS WITH SYSTEM SCREENSHOTS

Q1)

Write SQL query for the following:

• Find all the courses taught in the both the Fall 2009 and Spring 2010 semesters (5m).

avuir l	22 BCE 06:82 Page No.: YOUVA Siddhant Bhagat
(81)	Suevios 2000
*	create table courses (course name- numeric (10), instructor varchari(10), semester varchari(10), year numeric (10), primary Key (course-id, semes- ter, year);
aci	and colored you to an treed up you
*	insert into cowises values (101, DBMS), "M. Smith", "Fall", 2009);
*	insent into courses values (102, cos', 'S. Johnson', Fall', 2009);
*	insert into courses values (103, CN', P. Jason', Fall', 2009);
*	insert into courses values (104, CDSA; J. Kohli', 2009);
N9.3	Altes applying natural join better
*	insert into courses values (101, 'DBMS', "M. Smith', Spring', 2010);
	mised in to cowsel values (105 CN
*	insert into courses values (105, AI')
*	A. Davis', Spring', 2010); insert into courses values (106, SwF?; 'Q. Aavinder, Espring', 2010);

TABLE CREATED

SQL> create table courses(course_id numeric(10), course_name varchar2(10), instructor varchar2(10), semester varchar(10), year numeric(10), primary key(course_id, semester,year));

Table created.

INSERTING VALUES

SIDDHANT BHAGAT

```
SQL> insert into courses values(101, 'DBMS', 'M.Smith', 'Fall', 2009);

1 row created.

SQL> insert into courses values(102, 'OS', 'S.Johnson', 'Fall', 2009);

1 row created.

SQL> insert into courses values(103, 'CN', 'P.Jason', 'Fall', 2009);

1 row created.

SQL> insert into courses values(104, 'DSA', 'J.Kohli', 'Fall', 2009);

1 row created.

SQL> insert into courses values(101, 'DBMS', 'M.Smith', 'Spring', 2010);

1 row created.

SQL> insert into courses values(103, 'CN', 'P.Jason', 'Spring', 2010);

1 row created.

SQL> insert into courses values(105, 'AI', 'A.Davis', 'Spring', 2010);
```

SQL> insert into courses values(106, 'SWE', 'Q. Aavinder', 'Spring', 2010);

DISPLAYING VALUES IN TABLE COURSES

1 row created.

1 row created.

COURSE_ID	COURSE_NAM	INSTRUCTOR	SEMESTER	YEAR
101	DBMS	M.Smith	Fall	2009
102	OS	S.Johnson	Fall	2009
103	CN	P.Jason	Fall	2009
104	DSA	J.Kohli	Fall	2009
101	DBMS	M.Smith	Spring	2010
103	CN	P.Jason	Spring	2010
105	ΑI	A.Davis	Spring	2010
106	SWE	Q.Aavinder	Spring	2010
8 rows sele	ected.			

Finding all the courses taught in the both the Fall 2009 and Spring 2010 semesters

```
* Find all courses taught in both Fall 2009 A Spring 2010 semestors.

Select distinct course id from courses where semester = 'Fall' and year = 2009 and course id in (select course id brom courses where semester = 'Spring' and year = 2010);
```

Q2)

Assume any two relation states with 3 attributes each - Apply natural join and display only the common attribute and one more attribute from each relation – output should have just 3 attributes. Comment on the output.
 (5m)

CREATION AND DISPLAYING RELATION STATE rA

```
SQL> create table rA(id numeric(10) primary key, name varchar2(10), salary
numeric(10,2));
Table created.
```

```
SQL> insert into rA values(101,'Bob',50000);
1 row created.

SQL> insert into rA values(102,'Jasion',40000);
1 row created.

SQL> insert into rA values(103,'Mason',10000);
1 row created.

SQL> insert into rA values(104,'Mount',80000);
1 row created.
```

DISPLAYING THE TABLE

SQL> select * from rA;			
ID N	AME	SALARY	
101 B 102 J 103 M 104 M	asion ason	50000 40000 10000 80000	

CREATION AND DISPLAYING RELATION STATE rB

```
SQL> create table rB(id numeric(10) primary key, department varchar2(10), location varchar2(10));
Table created.

SQL> insert into rB values(101, 'HR', 'New York');
1 row created.

SQL> insert into rB values(102, 'IT', 'Dehli');
1 row created.

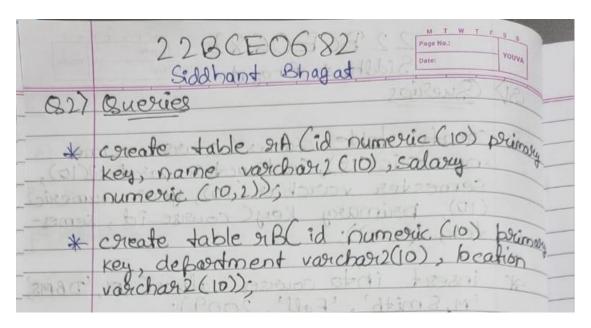
SQL> insert into rB values(105, 'Finance', 'Atalanta');
1 row created.

SQL> insert into rB values(104, 'Sales', 'Mumbai');
1 row created.
```

```
SQL> select * from rB;

ID DEPARTMENT LOCATION

101 HR New York
102 IT Dehli
105 Finance Atalanta
104 Sales Mumbai
```



PERFORMING NATURAL JOIN ON RA AND RB

SQL> select id, name, location from rA natural join rB;

X	Perform Join (Natural Join)
	CPOOL UST CORRECT 2
	Soi) soulor someron opin troops to
	select id name, location from 91A natural join 91B;
H2C	natural join 943;

ID	NAME	LOCATION
102	Bob Jasion Mount	New York Dehli Mumbai

COMMENTS:(explain)

* Comment on output:
After applying natural join between the two tables,
the natural join operations matches now
from both 91A and 91B based on common
exists in both tables will abbear in
exists in both tables will appear in result. In this case >
If ID exists in one table but not other, it will not appear in result, as
with matching values in common
columns.
Result has common attribute ID, and attribute unique to each table such as Name from 91A and location from 91B
Natural Join results in a filtered
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