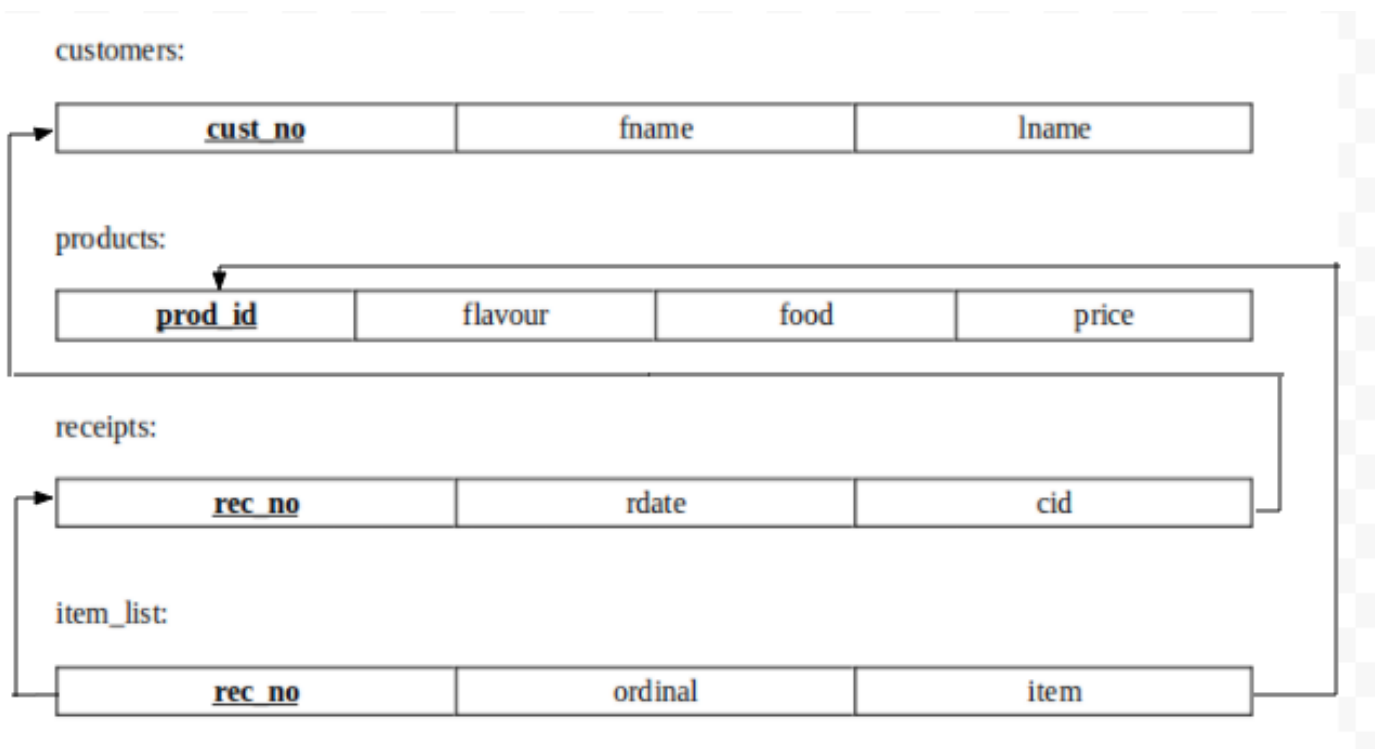


Assignment 3 – Joins and SubQueries

Validation:

Schema diagram:



Script file:

```
SQL> @C:/Krithika/DBL/a3data.sql;
SQL> REM Assignment 3
SQL> REM Population of Bakery Database
SQL> REM -----
> REM CUSTOMERS ( customer number, Last name, First name)
SQL> REM -----
>
```

```
SQL> drop table item_list;
```

Table dropped.

```
SQL> drop table receipts;
```

Table dropped.

```
SQL> drop table products;
```

Table dropped.

```
SQL> drop table customers;
```

Table dropped.

```
SQL>
SQL> create table customers(
2      cust_no number(2) constraint c_pk primary key,
3      lname varchar2(20),
4      fname varchar2(20)
5      );
```

Table created.

```
SQL>
SQL> insert into customers values(1, 'LOGAN', 'JULIET');
```

1 row created.

.
.
.

```
SQL> insert into customers values(21, 'JOHN', 'DAVID');
```

1 row created.

```
SQL>
SQL> REM -----
> REM PRODUCTS (product number, Flavor, Food, Price)
SQL> REM -----
>
```

```
SQL> create table products(
2     prod_id varchar2(20) constraint prod_pk primary key,
3     flavour varchar2(20),
4     food varchar2(20),
5     price number(5)
6 );
```

Table created.

```
SQL>
SQL> insert into products values('20-BC-C-10','Chocolate','Cake',8.95);
```

1 row created.

.
.
.

```
SQL> insert into products values('51-BLU','Blueberry','Danish',1.15);
```

1 row created.

```
SQL>
SQL> REM -----
> REM RECEIPTS(receipt number, receipt Date, Customer)
SQL> REM -----
>
SQL> create table receipts(
2     rec_no number(5) constraint rec_pk primary key,
3     rdate date,
4     cid number(2) constraint rec_fk references customers(cust_no)
5 );
```

Table created.

```
SQL>
SQL> INSERT INTO Receipts values(18129, '28-Oct-2007', 15);
```

1 row created.

.
.
.

```
SQL> INSERT INTO Receipts values(34378, '23-Oct-2007', 6);
```

1 row created.

```
SQL>
SQL> REM -----
> REM ITEM_LIST (receipt number, Ordinal, Item)
SQL> REM -----
>
```

```
SQL> create table item_list(
2     rec_no number(5) constraint it_fk1 references receipts(rec_no),
3     ordinal number(2),
4     item varchar2(20) constraint it_fk2 references products(prod_id),
5     constraint item_pk primary key(rec_no,ordinal)
6 );
```

Table created.

```
SQL>
SQL> insert into item_list values(18129, 1, '70-TU');
```

1 row created.

.
.
.

```
SQL> insert into item_list values(34378, 2, '45-VA');
```

1 row created.

```
SQL>
SQL> REM *** End of database population ***
SQL>
SQL>
SQL> REM *** Checking tables ***
SQL>
SQL> select * from customers;
```

CUST_NO	LNAME	FNAME
1	LOGAN	JULIET
2	ARZT	TERRELL
3	ESPOSITA	TRAVIS
4	ENGLEY	SIXTA
5	DUNLOW	OSVALDO
6	SLINGLAND	JOSETTE
7	TOUSSAND	SHARRON
8	HELING	RUPERT
9	HAFFERKAMP	CUC
10	DUKELOW	CORETTA
11	STADICK	MIGDALIA

CUST_NO	LNAME	FNAME
12	MCMAHAN	MELLIE
13	ARNN	KIP
14	SOPKO	RAYFORD
15	CALLENDAR	DAVID
16	CRUZEN	ARIANE
17	MESDAQ	CHARLENE
18	DOMKOWSKI	ALMETA
19	STENZ	NATACHA
20	ZEME	STEPHEN
21	JOHN	DAVID

21 rows selected.

```
SQL> select * from products;
```

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PROD_ID	FLAVOUR	FOOD	PRICE
20-BC-C-10	Chocolate	Cake	9
20-BC-L-10	Lemon	Cake	9
20-CA-7.5	Casino	Cake	16
24-8x10	Opera	Cake	16
25-STR-9	Strawberry	Cake	12
26-8x10	Truffle	Cake	16
45-CH	Chocolate	Eclair	3
45-CO	Coffee	Eclair	4
45-VA	Vanilla	Eclair	3
46-11	Napoleon	Cake	13
90-ALM-I	Almond	Tart	4

PROD_ID	FLAVOUR	FOOD	PRICE
90-APIE-10	Apple	Pie	5
90-APP-11	Apple	Tart	3
90-APR-PF	Apricot	Tart	3
90-BER-11	Berry	Tart	3
90-BLK-PF	Blackberry	Tart	3
90-BLU-11	Blueberry	Tart	3
90-CH-PF	Chocolate	Tart	4
90-CHR-11	Cherry	Tart	3
90-LEM-11	Lemon	Tart	3
90-PEC-11	Pecan	Tart	4
70-GA	Ganache	Cookie	1

PROD_ID	FLAVOUR	FOOD	PRICE
70-GON	Gongolais	Cookie	1
70-R	Raspberry	Cookie	1
70-LEM	Lemon	Cookie	1
70-M-CH-DZ	Chocolate	Meringue	1
70-M-VA-SM-DZ	Vanilla	Meringue	1
70-MAR	Marzipan	Cookie	1
70-TU	Tuile	Cookie	1
70-W	Walnut	Cookie	1
50-ALM	Almond	Croissant	1
50-APP	Apple	Croissant	1
50-APR	Apricot	Croissant	1

PROD_ID	FLAVOUR	FOOD	PRICE
50-CHS	Cheese	Croissant	2
50-CH	Chocolate	Croissant	2
51-APR	Apricot	Danish	1
51-APP	Apple	Danish	1
51-ATW	Almond	Twist	1
51-BC	Almond	Bear Claw	2
51-BLU	Blueberry	Danish	1

40 rows selected.

SQL> select * from receipts;

REC_NO	RDATE	CID
18129	28-OCT-07	15
51991	17-OCT-07	14
83085	12-OCT-07	7
70723	28-OCT-07	20
13355	19-OCT-07	7
52761	27-OCT-07	8
99002	13-OCT-07	20
58770	22-OCT-07	18
84665	10-OCT-07	6
55944	16-OCT-07	19
42166	14-OCT-07	8
REC_NO	RDATE	CID

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16034	10-OCT-07	4
25906	29-OCT-07	15
27741	25-OCT-07	8
64451	10-OCT-07	11
41028	06-OCT-07	17
73716	29-OCT-07	18
76667	14-OCT-07	15
21040	03-OCT-07	6
48332	15-OCT-07	20
35011	10-OCT-07	20
95962	26-OCT-07	8

REC_NO	RDATE	CID
--------	-------	-----

44798	04-OCT-07	16
60270	31-OCT-07	11
21162	04-OCT-07	8
77406	09-OCT-07	13
32565	24-OCT-07	14
36343	31-OCT-07	19
96619	07-OCT-07	18
86678	24-OCT-07	3
44330	20-OCT-07	18
91937	21-OCT-07	12
21545	22-OCT-07	12

REC_NO	RDATE	CID
--------	-------	-----

29226	26-OCT-07	14
25121	20-OCT-07	18
54935	16-OCT-07	14
36423	24-OCT-07	16
83437	15-OCT-07	8
49854	12-OCT-07	2
99994	21-OCT-07	6
21622	10-OCT-07	7
64861	15-OCT-07	10
33456	05-OCT-07	16
75468	21-OCT-07	10

REC_NO	RDATE	CID
--------	-------	-----

56365	14-OCT-07	12
91192	10-OCT-07	5
82056	07-OCT-07	18
27192	28-OCT-07	9
59716	30-OCT-07	2
82795	08-OCT-07	15
26240	07-OCT-07	16
56724	09-OCT-07	13
70796	31-OCT-07	12
37636	20-OCT-07	1
63998	13-OCT-07	20

REC_NO	RDATE	CID
--------	-------	-----

48981	24-OCT-07	20
66704	29-OCT-07	14
12698	23-OCT-07	19
79287	30-OCT-07	8
55690	15-OCT-07	19
94371	22-OCT-07	8
26148	19-OCT-07	20
11923	09-OCT-07	15
46598	03-OCT-07	14
76951	27-OCT-07	14
85858	31-OCT-07	1

REC_NO	RDATE	CID
--------	-------	-----

85881	13-OCT-07	1
89937	20-OCT-07	7
66227	10-OCT-07	1

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60240	17-OCT-07	17
86085	16-OCT-07	1
67314	23-OCT-07	6
10013	17-OCT-07	15
26741	24-OCT-07	7
38157	23-OCT-07	16
45873	05-OCT-07	13
37540	03-OCT-07	20

REC_NO	RDATE	CID
--------	-------	-----

11891	30-OCT-07	7
61797	30-OCT-07	8
52369	15-OCT-07	5
96430	04-OCT-07	18
64301	12-OCT-07	14
45976	03-OCT-07	10
39605	12-OCT-07	12
52013	05-OCT-07	13
88626	25-OCT-07	17
53376	30-OCT-07	8
15584	13-OCT-07	3

REC_NO	RDATE	CID
--------	-------	-----

73437	01-OCT-07	6
24200	16-OCT-07	9
92252	25-OCT-07	7
39685	28-OCT-07	1
61378	08-OCT-07	11
96761	14-OCT-07	20
26198	12-OCT-07	11
78179	24-OCT-07	14
68890	27-OCT-07	7
75526	22-OCT-07	18
86162	10-OCT-07	16

REC_NO	RDATE	CID
--------	-------	-----

13496	30-OCT-07	11
60469	20-OCT-07	4
50660	18-OCT-07	9
64553	08-OCT-07	17
57784	15-OCT-07	7
84258	22-OCT-07	2
68199	04-OCT-07	9
78187	17-OCT-07	14
81517	10-OCT-07	1
18951	14-OCT-07	20
20411	08-OCT-07	7

REC_NO	RDATE	CID
--------	-------	-----

55494	20-OCT-07	15
42162	16-OCT-07	7
49977	18-OCT-07	3
89638	07-OCT-07	4
73438	18-OCT-07	10
96258	12-OCT-07	8
19258	25-OCT-07	5
12800	22-OCT-07	11
81368	17-OCT-07	19
70655	06-OCT-07	2
19002	19-OCT-07	6

REC_NO	RDATE	CID
--------	-------	-----

31874	13-OCT-07	2
72207	15-OCT-07	1
65091	09-OCT-07	17
42833	22-OCT-07	3
72949	02-OCT-07	6
46248	12-OCT-07	11

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38849	25-OCT-07	1
86861	26-OCT-07	9
32701	19-OCT-07	16
89182	29-OCT-07	5
68753	11-OCT-07	5

REC_NO	RDATE	CID
39217	19-OCT-07	20
96531	12-OCT-07	8
53922	13-OCT-07	2
64477	16-OCT-07	6
99058	03-OCT-07	14
77032	28-OCT-07	14
15286	11-OCT-07	6
59774	02-OCT-07	16
35073	23-OCT-07	5
34910	07-OCT-07	20
17685	02-OCT-07	12

REC_NO	RDATE	CID
45062	23-OCT-07	1
39109	02-OCT-07	16
37063	22-OCT-07	14
18567	13-OCT-07	7
37586	03-OCT-07	8
62707	07-OCT-07	8
28117	09-OCT-07	5
64574	02-OCT-07	6
40305	25-OCT-07	8
33060	29-OCT-07	20
12396	10-OCT-07	10

REC_NO	RDATE	CID
43103	07-OCT-07	4
39575	20-OCT-07	20
70162	09-OCT-07	19
23034	15-OCT-07	17
79296	03-OCT-07	19
74741	12-OCT-07	20
98806	15-OCT-07	17
43752	05-OCT-07	5
47353	12-OCT-07	6
39829	31-OCT-07	3
87454	21-OCT-07	6

REC_NO	RDATE	CID
76663	04-OCT-07	10
85492	20-OCT-07	12
48647	09-OCT-07	3
61008	09-OCT-07	14
96402	04-OCT-07	6
35904	21-OCT-07	10
49845	31-OCT-07	20
46014	16-OCT-07	15
46876	06-OCT-07	13
34579	08-OCT-07	7
17729	16-OCT-07	16

REC_NO	RDATE	CID
74952	16-OCT-07	5
61948	04-OCT-07	5
41064	25-OCT-07	16
17947	27-OCT-07	7
20913	07-OCT-07	8
95514	09-OCT-07	10
24829	07-OCT-07	15
44590	12-OCT-07	1
65165	04-OCT-07	4

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89588	09-OCT-07	7
53240	03-OCT-07	14

REC_NO	RDATE	CID
46674	29-OCT-07	15
67946	18-OCT-07	7
31233	20-OCT-07	13
15904	06-OCT-07	13
17488	20-OCT-07	6
97097	23-OCT-07	9
50512	27-OCT-07	8
11548	21-OCT-07	13
29908	14-OCT-07	13
20127	07-OCT-07	15
41963	29-OCT-07	8

REC_NO	RDATE	CID
16532	21-OCT-07	4
34378	23-OCT-07	6

200 rows selected.

SQL> select * from item_list;

REC_NO	ORDINAL	ITEM
18129	1	70-TU
51991	1	90-APIE-10
51991	2	90-CH-PF
51991	3	90-APP-11
51991	4	26-8x10
83085	1	25-STR-9
83085	2	24-8x10
83085	3	90-APR-PF
83085	4	51-ATW
83085	5	26-8x10
70723	1	45-CO

REC_NO	ORDINAL	ITEM
13355	1	24-8x10
13355	2	70-LEM
13355	3	46-11
52761	1	90-ALM-I
52761	2	26-8x10
52761	3	50-CHS
52761	4	90-BLK-PF
52761	5	90-ALM-I
99002	1	50-CHS
99002	2	45-VA
58770	1	50-CHS

REC_NO	ORDINAL	ITEM
58770	2	46-11
58770	3	45-CH
58770	4	20-CA-7.5
84665	1	90-BER-11
55944	1	20-CA-7.5
55944	2	90-LEM-11
55944	3	70-R
55944	4	70-R
55944	5	50-CHS
42166	1	70-M-VA-SM-DZ
16034	1	46-11

REC_NO	ORDINAL	ITEM
16034	2	26-8x10
16034	3	45-CH

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16034	4 70-R
16034	5 46-11
25906	1 25-STR-9
27741	1 90-BLK-PF
27741	2 51-BC
27741	3 90-APR-PF
64451	1 90-BER-11
64451	2 51-BC
64451	3 24-8x10

REC_NO	ORDINAL ITEM
--------	--------------

64451	4 90-BLK-PF
41028	1 90-BER-11
73716	1 90-PEC-11
73716	2 90-ALM-I
73716	3 70-LEM
73716	4 50-CH
76667	1 70-GON
76667	2 90-LEM-11
21040	1 70-R
21040	2 20-BC-L-10
21040	3 90-CH-PF

REC_NO	ORDINAL ITEM
--------	--------------

48332	1 70-GA
48332	2 70-R
35011	1 50-CHS
95962	1 90-APR-PF
95962	2 90-CHR-11
95962	3 50-CH
95962	4 45-VA
44798	1 90-APR-PF
44798	2 90-CH-PF
44798	3 90-APIE-10
44798	4 90-APP-11

REC_NO	ORDINAL ITEM
--------	--------------

44798	5 25-STR-9
60270	1 20-BC-L-10
60270	2 90-BLU-11
21162	1 90-APP-11
21162	2 70-TU
21162	3 90-APR-PF
77406	1 51-ATW
77406	2 90-BLK-PF
77406	3 50-APR
77406	4 50-APR
77406	5 24-8x10

REC_NO	ORDINAL ITEM
--------	--------------

32565	1 50-APP
32565	2 50-APP
32565	3 45-VA
36343	1 51-BC
36343	2 51-BC
36343	3 70-M-VA-SM-DZ
36343	4 50-ALM
96619	1 90-BLK-PF
86678	1 70-M-VA-SM-DZ
86678	2 90-LEM-11
44330	1 70-R

REC_NO	ORDINAL ITEM
--------	--------------

44330	2 90-BLU-11
91937	1 51-BC
91937	2 51-APR
21545	1 90-BER-11
21545	2 70-GA

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21545	3 50-ALM
21545	4 90-BER-11
21545	5 45-VA
29226	1 90-PEC-11
29226	2 90-APIE-10
29226	3 51-BC

REC_NO	ORDINAL ITEM
29226	4 70-W
29226	5 50-ALM
25121	1 50-CHS
25121	2 90-BER-11
25121	3 45-CH
54935	1 70-R
54935	2 45-CH
36423	1 45-VA
83437	1 90-LEM-11
83437	2 51-APR
49854	1 90-BER-11

REC_NO	ORDINAL ITEM
49854	2 90-APP-11
99994	1 25-STR-9
99994	2 26-8x10
99994	3 90-PEC-11
99994	4 50-CH
21622	1 45-CO
64861	1 50-ALM
64861	2 46-11
33456	1 46-11
33456	2 90-BLK-PF
75468	1 70-M-CH-DZ

REC_NO	ORDINAL ITEM
75468	2 70-M-CH-DZ
75468	3 90-CHR-11
56365	1 50-APR
91192	1 51-APP
91192	2 51-ATW
91192	3 50-APP
82056	1 90-APP-11
82056	2 50-CH
82056	3 90-BLK-PF
82056	4 45-CO
27192	1 70-R

REC_NO	ORDINAL ITEM
27192	2 90-BLU-11
27192	3 70-TU
59716	1 51-APR
59716	2 70-MAR
59716	3 90-BLU-11
59716	4 45-CO
59716	5 90-APP-11
82795	1 90-APR-PF
26240	1 20-CA-7.5
56724	1 70-M-VA-SM-DZ
70796	1 45-CO

REC_NO	ORDINAL ITEM
70796	2 20-BC-L-10
70796	3 45-CH
70796	4 90-BLU-11
37636	1 90-APR-PF
37636	2 90-CH-PF
37636	3 24-8x10
63998	1 70-M-VA-SM-DZ
48981	1 90-CHR-11

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48981	2 50-CHS
66704	1 90-BER-11
66704	2 51-APR

REC_NO	ORDINAL ITEM
66704	3 70-LEM
12698	1 51-APP
12698	2 70-R
12698	3 26-8x10
79287	1 90-PEC-11
79287	2 45-VA
79287	3 90-LEM-11
79287	4 90-APP-11
79287	5 51-BLU
55690	1 70-M-CH-DZ
55690	2 51-BLU

REC_NO	ORDINAL ITEM
55690	3 90-APP-11
94371	1 51-BLU
26148	1 20-CA-7.5
26148	2 90-BLU-11
26148	3 51-BLU
26148	4 70-M-CH-DZ
11923	1 70-LEM
46598	1 70-R
46598	2 70-W
46598	3 70-R
76951	1 51-BLU

REC_NO	ORDINAL ITEM
85858	1 20-CA-7.5
85858	2 70-M-VA-SM-DZ
85858	3 51-BLU
85881	1 90-APP-11
89937	1 51-BLU
89937	2 51-BC
89937	3 90-BER-11
89937	4 70-R
66227	1 90-APP-11
66227	2 90-APIE-10
66227	3 70-MAR

REC_NO	ORDINAL ITEM
66227	4 90-BLK-PF
60240	1 90-APP-11
60240	2 50-ALM
86085	1 50-APR
86085	2 50-APP
86085	3 90-APR-PF
86085	4 51-ATW
67314	1 51-BC
67314	2 50-CHS
67314	3 70-TU
67314	4 20-CA-7.5

REC_NO	ORDINAL ITEM
10013	1 70-M-CH-DZ
26741	1 70-GA
26741	2 50-APP
38157	1 70-MAR
38157	2 90-CHR-11
38157	3 70-LEM
38157	4 90-CHR-11
45873	1 70-M-VA-SM-DZ
37540	1 45-CO
37540	2 51-APR
11891	1 45-CO

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REC_NO	ORDINAL ITEM
11891	2 50-APR
11891	3 46-11
61797	1 70-GON
61797	2 90-CH-PF
61797	3 70-M-VA-SM-DZ
61797	4 70-M-CH-DZ
61797	5 90-BER-11
52369	1 90-CHR-11
52369	2 70-TU
96430	1 90-PEC-11
64301	1 70-W

REC_NO	ORDINAL ITEM
64301	2 51-APR
64301	3 90-BER-11
45976	1 24-8x10
45976	2 51-BC
39605	1 90-BER-11
52013	1 70-W
52013	2 50-ALM
52013	3 90-ALM-I
52013	4 90-APP-11
88626	1 90-APP-11
53376	1 51-APR

REC_NO	ORDINAL ITEM
53376	2 90-CHR-11
53376	3 90-APIE-10
53376	4 46-11
53376	5 90-BLU-11
15584	1 70-LEM
73437	1 70-M-CH-DZ
24200	1 50-CHS
92252	1 70-GON
92252	2 51-ATW
92252	3 51-BLU
92252	4 45-VA

REC_NO	ORDINAL ITEM
92252	5 70-M-VA-SM-DZ
39685	1 50-APP
39685	2 70-M-CH-DZ
39685	3 90-APR-PF
39685	4 90-APIE-10
61378	1 51-APR
61378	2 90-BLK-PF
96761	1 26-8x10
96761	2 70-LEM
96761	3 50-CHS
96761	4 50-CHS

REC_NO	ORDINAL ITEM
26198	1 70-GA
26198	2 70-GON
26198	3 50-APP
26198	4 20-BC-L-10
26198	5 70-R
78179	1 51-BLU
78179	2 50-CHS
78179	3 90-BLK-PF
78179	4 45-CO
78179	5 70-R
68890	1 50-ALM

REC_NO	ORDINAL ITEM
--------	--------------

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Name: Krithika Swaminathan
Roll No.: 205001057

75526	1 90-LEM-11
86162	1 51-BLU
86162	2 50-ALM
86162	3 50-CHS
86162	4 70-TU
86162	5 50-ALM
13496	1 70-W
13496	2 90-ALM-I
13496	3 51-ATW
13496	4 50-APP
60469	1 51-APR

REC_NO	ORDINAL ITEM
--------	--------------

50660	1 70-TU
50660	2 90-APIE-10
64553	1 51-BC
64553	2 90-APP-11
64553	3 70-LEM
64553	4 90-APP-11
57784	1 90-CH-PF
84258	1 51-APP
84258	2 51-BC
68199	1 51-APR
68199	2 24-8x10

REC_NO	ORDINAL ITEM
--------	--------------

78187	1 51-ATW
78187	2 51-ATW
81517	1 70-M-CH-DZ
81517	2 51-ATW
18951	1 51-APR
20411	1 90-APP-11
20411	2 90-APR-PF
55494	1 90-APP-11
55494	2 45-VA
42162	1 70-M-VA-SM-DZ
49977	1 26-8x10

REC_NO	ORDINAL ITEM
--------	--------------

49977	2 45-CO
49977	3 45-CH
49977	4 20-BC-L-10
89638	1 70-M-CH-DZ
89638	2 70-M-CH-DZ
89638	3 50-ALM
89638	4 90-CH-PF
73438	1 90-CHR-11
73438	2 50-APR
96258	1 90-CHR-11
96258	2 90-BLK-PF

REC_NO	ORDINAL ITEM
--------	--------------

96258	3 24-8x10
96258	4 70-LEM
19258	1 90-CHR-11
12800	1 70-LEM
12800	2 20-CA-7.5
12800	3 90-ALM-I
12800	4 90-APR-PF
81368	1 50-CHS
81368	2 90-CH-PF
70655	1 26-8x10
70655	2 70-TU

REC_NO	ORDINAL ITEM
--------	--------------

70655	3 90-ALM-I
70655	4 45-CO
19002	1 26-8x10

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Name: Krithika Swaminathan
Roll No.: 205001057

19002	2 25-STR-9
31874	1 70-MAR
31874	2 70-MAR
31874	3 90-LEM-11
72207	1 70-MAR
72207	2 20-CA-7.5
65091	1 51-APR
42833	1 90-CHR-11

REC_NO	ORDINAL ITEM
42833	2 70-W
42833	3 51-BC
72949	1 51-APR
72949	2 70-LEM
72949	3 90-BLK-PF
72949	4 51-BLU
72949	5 70-W
46248	1 70-M-CH-DZ
38849	1 45-VA
38849	2 70-M-VA-SM-DZ
38849	3 46-11

REC_NO	ORDINAL ITEM
38849	4 51-ATW
38849	5 50-APR
86861	1 20-BC-L-10
86861	2 50-CHS
86861	3 70-GON
86861	4 51-BLU
32701	1 90-BLK-PF
32701	2 50-APR
32701	3 20-CA-7.5
89182	1 51-APR
89182	2 51-APP

REC_NO	ORDINAL ITEM
89182	3 70-LEM
89182	4 50-ALM
89182	5 45-CH
68753	1 70-R
68753	2 46-11
68753	3 51-BLU
68753	4 70-W
68753	5 51-BC
39217	1 90-ALM-I
39217	2 51-ATW
39217	3 45-CH

REC_NO	ORDINAL ITEM
39217	4 90-BLK-PF
96531	1 24-8x10
96531	2 50-APP
96531	3 70-GA
96531	4 50-CHS
53922	1 70-M-VA-SM-DZ
53922	2 46-11
53922	3 20-BC-L-10
53922	4 70-GON
64477	1 70-TU
64477	2 90-PEC-11

REC_NO	ORDINAL ITEM
64477	3 90-BLK-PF
64477	4 51-ATW
64477	5 20-CA-7.5
99058	1 50-CHS
99058	2 90-BLU-11
99058	3 51-BLU

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Name: Krithika Swaminathan
Roll No.: 205001057

99058	4 45-CH
99058	5 90-CHR-11
77032	1 50-CH
77032	2 46-11
77032	3 50-ALM

REC_NO	ORDINAL ITEM
77032	4 70-MAR
15286	1 70-MAR
15286	2 50-APP
15286	3 90-APR-PF
59774	1 51-BLU
59774	2 70-GA
59774	3 90-ALM-I
35073	1 90-CHR-11
35073	2 70-GON
34910	1 51-APP
34910	2 24-8x10

REC_NO	ORDINAL ITEM
34910	3 90-PEC-11
34910	4 51-BC
17685	1 20-BC-L-10
17685	2 50-APP
17685	3 51-ATW
17685	4 70-MAR
45062	1 50-CHS
45062	2 20-CA-7.5
39109	1 90-APIE-10
39109	2 90-APP-11
37063	1 70-TU

REC_NO	ORDINAL ITEM
37063	2 90-APP-11
37063	3 70-W
18567	1 70-LEM
18567	2 90-APR-PF
37586	1 70-TU
62707	1 70-R
62707	2 90-CHR-11
62707	3 20-BC-L-10
62707	4 90-APR-PF
28117	1 90-CH-PF
28117	2 50-APP

REC_NO	ORDINAL ITEM
28117	3 25-STR-9
64574	1 51-ATW
64574	2 70-TU
64574	3 70-W
40305	1 20-CA-7.5
40305	2 70-GA
33060	1 45-CO
33060	2 46-11
33060	3 90-BLK-PF
12396	1 90-BER-11
12396	2 70-M-VA-SM-DZ

REC_NO	ORDINAL ITEM
12396	3 51-BC
12396	4 90-APR-PF
12396	5 20-CA-7.5
43103	1 70-M-CH-DZ
39575	1 70-M-CH-DZ
70162	1 46-11
70162	2 70-M-CH-DZ
70162	3 50-APR
70162	4 70-MAR

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Name: Krithika Swaminathan
Roll No.: 205001057

23034 1 70-M-CH-DZ
23034 2 90-APR-PF

REC_NO	ORDINAL	ITEM
79296	1	90-PEC-11
79296	2	50-APR
79296	3	90-ALM-I
79296	4	51-BC
79296	5	90-PEC-11
74741	1	90-APP-11
74741	2	51-APP
74741	3	70-MAR
98806	1	26-8x10
98806	2	50-APR
98806	3	90-APIE-10

REC_NO	ORDINAL	ITEM
98806	4	51-APP
43752	1	90-BLU-11
47353	1	90-APR-PF
47353	2	90-APIE-10
47353	3	70-TU
47353	4	90-BLK-PF
39829	1	20-BC-L-10
87454	1	90-APIE-10
87454	2	50-APP
76663	1	25-STR-9
76663	2	90-APP-11

REC_NO	ORDINAL	ITEM
85492	1	70-M-CH-DZ
85492	2	25-STR-9
85492	3	90-BLU-11
85492	4	70-M-CH-DZ
48647	1	51-BC
48647	2	90-APIE-10
48647	3	90-CHR-11
61008	1	20-CA-7.5
61008	2	90-APP-11
96402	1	50-ALM
96402	2	20-CA-7.5

REC_NO	ORDINAL	ITEM
96402	3	90-APP-11
35904	1	46-11
35904	2	90-APR-PF
49845	1	90-BLK-PF
49845	2	70-LEM
49845	3	50-CH
49845	4	90-PEC-11
46014	1	51-ATW
46014	2	90-APR-PF
46014	3	45-VA
46014	4	90-CH-PF

REC_NO	ORDINAL	ITEM
46014	5	90-BLK-PF
46876	1	70-TU
46876	2	51-APP
34579	1	24-8x10
34579	2	70-GA
34579	3	70-TU
34579	4	26-8x10
17729	1	51-ATW
17729	2	50-APP
17729	3	90-BLU-11
17729	4	90-CH-PF

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Name: Krithika Swaminathan
Roll No.: 205001057

REC_NO	ORDINAL ITEM
17729	5 20-CA-7.5
74952	1 45-VA
74952	2 90-APP-11
74952	3 90-BER-11
61948	1 70-MAR
61948	2 70-GON
61948	3 45-CH
61948	4 24-8x10
41064	1 70-R
41064	2 90-APR-PF
41064	3 51-APP

REC_NO	ORDINAL ITEM
17947	1 50-APP
20913	1 90-LEM-11
20913	2 70-M-CH-DZ
20913	3 70-LEM
95514	1 45-CH
95514	2 46-11
95514	3 70-MAR
95514	4 51-APP
24829	1 20-CA-7.5
44590	1 90-BLU-11
44590	2 24-8x10

REC_NO	ORDINAL ITEM
44590	3 90-BLU-11
44590	4 45-CH
44590	5 90-PEC-11
65165	1 24-8x10
65165	2 90-ALM-I
65165	3 70-R
65165	4 45-CO
89588	1 90-BLK-PF
53240	1 25-STR-9
53240	2 51-ATW
46674	1 51-BC

REC_NO	ORDINAL ITEM
67946	1 90-PEC-11
67946	2 90-APR-PF
67946	3 90-APR-PF
67946	4 90-LEM-11
31233	1 70-M-VA-SM-DZ
31233	2 50-APR
31233	3 50-CHS
31233	4 51-BC
15904	1 90-CH-PF
17488	1 50-APP
97097	1 70-MAR

REC_NO	ORDINAL ITEM
50512	1 90-APP-11
11548	1 45-CO
11548	2 90-APIE-10
29908	1 45-VA
29908	2 51-ATW
29908	3 25-STR-9
29908	4 70-GA
29908	5 90-CH-PF
20127	1 90-BER-11
20127	2 70-M-CH-DZ
41963	1 50-ALM

REC_NO	ORDINAL ITEM
41963	2 90-CH-PF

```
16532      1 50-APP
16532      2 70-MAR
16532      3 70-TU
16532      4 24-8x10
34378      1 90-CHR-11
34378      2 45-VA
```

557 rows selected.

```
SQL>
SQL> REM ***** END OF DATA FILE *****
SQL>
```

```
SQL> @C:/Krithika/DBL/a3queries.sql;
SQL> REM Assignment 3
SQL>
```

```
SQL> REM -----
> REM *** ASSIGNMENT QUESTIONS ***
SQL> REM -----
```

```
>
SQL> REM **I** ____ Write the following using sub-queries: ____ **
SQL>
```

```
SQL> REM 1. Display the food details that is not purchased by any of customers.
```

```
SQL>
```

```
SQL> select * from products where prod_id not in (select item from item_list);
```

PROD_ID	FLAVOUR	FOOD	PRICE
20-BC-C-10	Chocolate	Cake	9

```
SQL> REM Verification:
```

```
SQL> select * from item_list where item='20-BC-C-10';
```

no rows selected

```
SQL>
```

```
SQL> REM 2. Show the customer details who had placed more than 2 orders on the same date.
```

```
SQL>
```

```
SQL> select * from customers where cust_no in (select cid from receipts group by cid,rdate having count(rec_no)>2) order by cust_no;
```

CUST_NO	LNAME	FNAME
8	HELING	RUPERT
14	SOPKO	RAYFORD

```
SQL> REM Verification:
```

```
SQL> select cid,rdate,count(rec_no) from receipts group by cid,rdate having count(rec_no)>2;
```

CID	RDATE	COUNT(REC_NO)
8	30-OCT-07	3
14	03-OCT-07	3

```
SQL>
```

```
SQL>
```

SQL> REM 3. Display the products details that has been ordered maximum by the customers. (use ALL)

SQL>

SQL> select * from products where prod_id in (select item from item_list group by item having count(item)>= all(select max(count(item)) from item_list group by item));

PROD_ID	FLAVOUR	FOOD	PRICE
90-APP-11	Apple	Tart	3

SQL> REM Verification:

SQL> select item, count(item) from item_list group by item order by count(item) desc;

ITEM	COUNT(ITEM)
90-APP-11	25
90-APR-PF	22
90-BLK-PF	20
70-M-CH-DZ	20
51-BC	19
50-CHS	19
51-ATW	18
70-R	18
50-APP	17
20-CA-7.5	17
90-CHR-11	16

ITEM	COUNT(ITEM)
46-11	16
70-TU	16
90-BER-11	15
24-8x10	15
70-MAR	15
70-LEM	15
51-BLU	15
50-ALM	14
70-M-VA-SM-DZ	14
90-CH-PF	14
51-APR	14

ITEM	COUNT(ITEM)
90-BLU-11	13
45-CO	13
45-VA	13
90-APIE-10	13
26-8x10	12
90-PEC-11	12
50-APR	12
45-CH	12
90-ALM-I	11
51-APP	10
25-STR-9	10

ITEM	COUNT(ITEM)
70-W	10
20-BC-L-10	10
70-GA	9
90-LEM-11	9
70-GON	8
50-CH	6

39 rows selected.

SQL>

SQL>

SQL> REM 4. Show the number of receipts that contain the product whose price is more than the average price of its food type.

SQL>

SQL> select count(distinct(rec_no)) as no_of_receipts from item_list where item in (select prod_id from products p where price > any (select avg(price) from products group by food having p.food = food));

NO_OF_RECEIPTS

85

SQL> REM Verification:

SQL> select food, avg(price) from products group by food;

FOOD AVG(PRICE)

FOOD	AVG(PRICE)
Cake	13
Bear Claw	2
Danish	1
Eclair	3.333333333
Twist	1
Pie	5
Meringue	1
Tart	3.3
Cookie	1
Croissant	1.4

10 rows selected.

SQL> select prod_id, food, price from products p_outer where price > any(select avg(price) from products group by food having p_outer.food = food);

PROD_ID	FOOD	PRICE
20-CA-7.5	Cake	16
24-8x10	Cake	16
26-8x10	Cake	16
45-CO	Eclair	4
90-ALM-I	Tart	4
90-CH-PF	Tart	4
90-PEC-11	Tart	4
50-CHS	Croissant	2
50-CH	Croissant	2

9 rows selected.

SQL> REM select item, count(distinct(rec_no)) from item_list where item in (select prod_id from products p where price > any (select avg(price) from products group by food having p.food = food)) group by item order by item;

SQL>

SQL>

SQL>

SQL> REM **||** ____ Write the following using JOIN: (Use sub-query if required) ____ **

SQL>

SQL>

SQL> REM 5. Display the customer details along with receipt number and date for the receipts that are dated on the last day of the receipt month.

SQL>

SQL> select c.cust_no, c.fname, c.lname, r.rec_no, r.rdate from receipts r join customers c on (c.cust_no = r.cid) where r.rdate = last_day(r.rdate);

CUST_NO	FNAME	LNAME	REC_NO	RDATE
1	JULIET	LOGAN	85858	31-OCT-07
3	TRAVIS	ESPOSITA	39829	31-OCT-07
11	MIGDALIA	STADICK	60270	31-OCT-07
12	MELLIE	MCMAHAN	70796	31-OCT-07
19	NATACHA	STENZ	36343	31-OCT-07
20	STEPHEN	ZEME	49845	31-OCT-07

6 rows selected.

SQL>

SQL>

SQL> REM 6. Display the receipt number(s) and its total price for the receipt(s) that contain Twist as one among five items. Include only the receipts with total price more than \$25.

SQL>

```
SQL> select rec_no, sum(price) from item_list
2 join receipts using (rec_no)
3 join products on (prod_id = item)
4 where rec_no in
5     (select rec_no from item_list join products on (prod_id = item)
6       where food = 'Twist' group by rec_no)
7 group by rec_no having sum(price)>25 and count(*)=5;
```

REC_NO	SUM(PRICE)
83085	48

SQL> REM Verification:

```
SQL> select rec_no, sum(price), count(*) from item_list
2 join receipts using (rec_no)
3 join products on (prod_id = item)
4 where rec_no in
5     (select rec_no from item_list join products on (prod_id = item)
6       where food = 'Twist' group by rec_no)
7 group by rec_no;
```

REC_NO	SUM(PRICE)	COUNT(*)
83085	48	5
92252	7	5
81517	2	2
13496	7	4
17685	12	4
46014	14	5
91192	3	3
38849	19	5
29908	21	5
17729	25	5
39217	11	4

REC_NO	SUM(PRICE)	COUNT(*)
64477	25	5
64574	3	3
86085	6	4
78187	2	2
77406	22	5
53240	13	2

17 rows selected.

SQL>

SQL>

SQL> REM 7. Display the details (customer details, receipt number, item) for the product that was purchased by the least number of customers.

SQL>

```
SQL> select i.item, rec_no, p.flavour, p.food, c.cust_no, c.fname, c.lname
  2  from item_list i
  3  join receipts r using (rec_no)
  4  join customers c on (c.cust_no = r.cid)
  5  join products p on (p.prod_id = i.item)
  6  where i.item in (
  7      select item from item_list group by item having count(item) in (
  8          select min(count(item)) from item_list group by item
  9      )
 10  );
```

ITEM	REC_NO	FLAVOUR	FOOD
CUST_NO	FNAME	LNAME	
50-CH 18 ALMETA	73716	Chocolate DOMKOWSKI	Croissant
50-CH 8 RUPERT	95962	Chocolate HELING	Croissant
50-CH 6 JOSETTE	99994	Chocolate SLINGLAND	Croissant

ITEM	REC_NO	FLAVOUR	FOOD
CUST_NO	FNAME	LNAME	
50-CH 18 ALMETA	82056	Chocolate DOMKOWSKI	Croissant
50-CH 14 RAYFORD	77032	Chocolate SOPKO	Croissant
50-CH 20 STEPHEN	49845	Chocolate ZEME	Croissant

6 rows selected.

SQL> REM Verification:

SQL> select min(count(item)) from item_list group by item;

```
MIN(COUNT(ITEM))
-----
6
```

SQL> select item, count(item) from item_list group by item having count(item) = 6;

ITEM	COUNT(ITEM)
50-CH	6

SQL>

SQL>

SQL> REM 8. Display the customer details along with the receipt number who ordered all the flavors of Meringue in the same receipt.

SQL>

```
SQL> select cust_no, fname, lname, rec_no from customers
2 join receipts on (cust_no = cid)
3 where rec_no in (
4     select rec_no from item_list join products p on (prod_id = item)
5     where flavour in (select flavour from products where food='Meringue') and
food='Meringue'
6     group by rec_no having count(distinct(flavour))=(select count(*) from
products where food='Meringue')
7 );
```

CUST_NO	FNAME	LNAME	REC_NO
8	RUPERT	HELING	61797

SQL> REM Verification:

```
SQL> select rec_no, item, flavour, food from item_list join products on (prod_id = item)
where flavour in ('Chocolate','Vanilla') and food='Meringue' order by rec_no;
```

REC_NO	ITEM	FLAVOUR	FOOD
10013	70-M-CH-DZ	Chocolate	Meringue
12396	70-M-VA-SM-DZ	Vanilla	Meringue
20127	70-M-CH-DZ	Chocolate	Meringue
20913	70-M-CH-DZ	Chocolate	Meringue
23034	70-M-CH-DZ	Chocolate	Meringue
26148	70-M-CH-DZ	Chocolate	Meringue
31233	70-M-VA-SM-DZ	Vanilla	Meringue
36343	70-M-VA-SM-DZ	Vanilla	Meringue
38849	70-M-VA-SM-DZ	Vanilla	Meringue
39575	70-M-CH-DZ	Chocolate	Meringue
39685	70-M-CH-DZ	Chocolate	Meringue

REC_NO	ITEM	FLAVOUR	FOOD
42162	70-M-VA-SM-DZ	Vanilla	Meringue
42166	70-M-VA-SM-DZ	Vanilla	Meringue
43103	70-M-CH-DZ	Chocolate	Meringue
45873	70-M-VA-SM-DZ	Vanilla	Meringue
46248	70-M-CH-DZ	Chocolate	Meringue
53922	70-M-VA-SM-DZ	Vanilla	Meringue
55690	70-M-CH-DZ	Chocolate	Meringue
56724	70-M-VA-SM-DZ	Vanilla	Meringue
61797	70-M-CH-DZ	Chocolate	Meringue
61797	70-M-VA-SM-DZ	Vanilla	Meringue
63998	70-M-VA-SM-DZ	Vanilla	Meringue

REC_NO	ITEM	FLAVOUR	FOOD
70162	70-M-CH-DZ	Chocolate	Meringue
73437	70-M-CH-DZ	Chocolate	Meringue
75468	70-M-CH-DZ	Chocolate	Meringue
75468	70-M-CH-DZ	Chocolate	Meringue
81517	70-M-CH-DZ	Chocolate	Meringue
85492	70-M-CH-DZ	Chocolate	Meringue
85492	70-M-CH-DZ	Chocolate	Meringue
85858	70-M-VA-SM-DZ	Vanilla	Meringue
86678	70-M-VA-SM-DZ	Vanilla	Meringue
89638	70-M-CH-DZ	Chocolate	Meringue
89638	70-M-CH-DZ	Chocolate	Meringue

REC_NO	ITEM	FLAVOUR	FOOD
92252	70-M-VA-SM-DZ	Vanilla	Meringue

34 rows selected.

SQL> select rec_no, count(distinct(flavour)) as diff_flavs, food from item_list join products on (prod_id = item) where flavour in ('Chocolate','Vanilla') and food='Meringue' group by rec_no,food order by rec_no;

REC_NO DIFF_FLAVS FOOD

```
-----
10013      1 Meringue
12396      1 Meringue
20127      1 Meringue
20913      1 Meringue
23034      1 Meringue
26148      1 Meringue
31233      1 Meringue
36343      1 Meringue
38849      1 Meringue
39575      1 Meringue
39685      1 Meringue
```

REC_NO DIFF_FLAVS FOOD

```
-----
42162      1 Meringue
42166      1 Meringue
43103      1 Meringue
45873      1 Meringue
46248      1 Meringue
53922      1 Meringue
55690      1 Meringue
56724      1 Meringue
61797      2 Meringue
63998      1 Meringue
70162      1 Meringue
```

REC_NO DIFF_FLAVS FOOD

```
-----
73437      1 Meringue
75468      1 Meringue
81517      1 Meringue
85492      1 Meringue
85858      1 Meringue
86678      1 Meringue
89638      1 Meringue
92252      1 Meringue
```

30 rows selected.

SQL>

SQL>

SQL>

SQL> REM **III** _____ Write the following using Set Operations: _____ **

SQL>

SQL> REM 9. Display the product details of both Pie and BEAR CLAW.

SQL> REM UNION

SQL>

SQL> (select * from products where food='Pie') union (select * from products where food='Bear Claw');

PROD_ID	FLAVOUR	FOOD	PRICE
51-BC	Almond	Bear Claw	2
90-APIE-10	Apple	Pie	5

SQL> REM Verification:

SQL> select * from products where food='Pie' or food='Bear Claw' order by prod_id;

PROD_ID	FLAVOUR	FOOD	PRICE
---------	---------	------	-------

51-BC	Almond	Bear Claw	2
90-APIE-10	Apple	Pie	5

SQL>

SQL>

SQL> REM 10. Display the customers details who have not placed any orders.

SQL> REM DIFF OF SETS

SQL>

```
SQL> select * from customers where cust_no in (  
2      (select cust_no from customers) minus (select cid from receipts)  
3      );
```

CUST_NO	LNAME	FNAME
21	JOHN	DAVID

SQL> REM Verification:

SQL> select distinct(cust_no) from customers order by cust_no;

CUST_NO
1
2
3
4
5
6
7
8
9
10
11

CUST_NO
12
13
14
15
16
17
18
19
20
21

21 rows selected.

SQL> select distinct(cid) from receipts order by cid;

CID
1
2
3
4
5
6
7
8
9
10
11

CID

12
13
14
15
16
17
18
19
20

20 rows selected.

SQL> select cust_no, fname, lname from customers c left outer join receipts r on
(c.cust_no = r.cid) where r.rec_no is null;

CUST_NO	FNAME	LNAME
21	DAVID	JOHN

SQL>

SQL>

SQL> REM 11. Display the food that has the same flavor as that of the common flavor
between the Meringue and Tart.

SQL> REM INTERSECTION

SQL>

SQL> select food from products where flavour in (
2 (select flavour from products where food='Meringue')
3 intersect
4 (select flavour from products where food='Tart')
5);

FOOD

Cake
Eclair
Tart
Meringue
Croissant

SQL> REM Verification:

SQL> select p1.flavour from products p1, products p2 where (p1.food='Meringue' and
p2.food='Tart') and (p1.flavour=p2.flavour);

FLAVOUR

Chocolate

SQL> select food,flavour from products where flavour in (select p1.flavour from
products p1, products p2 where (p1.food='Meringue' and p2.food='Tart') and
(p1.flavour=p2.flavour));

FOOD	FLAVOUR
Cake	Chocolate
Eclair	Chocolate
Tart	Chocolate
Meringue	Chocolate
Croissant	Chocolate

SQL> REM ***** END OF FILE *****
