Classical Music Mail Order Database
http://www.puebloelectronica.com/view_cust.php

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Course Project
CS622
12/07/07

Relational Instance

Customer Table

custid	custfname	custlname	custaddress
1	Al	Alexander	123 Allen ST
2	Bill	Bronco	234 Bronson RD
3	Carly	Cortez	345 Cally ST
4	Dodson	Dobbs	456 Fort RD
5	Earl	Eddison	567 Evening DR
6	Frank	Fetherson	678 Fifth Ave
7	Gary	Giggles	789 Gary ST

Order Table

orderid	custid	orderdate	shipdate
1	1	11/21/07	pending
2	3	11/23/07	pending
3	4	11/23/07	pending
4	6	11/25/07	pending

Order Items Table

orderid	recordid	quantity	medium
1	2	1	CD
2	3	1	CD
2	5	1	cassette
3	6	2	CD
3	4	1	CD
3	2	1	CD
3	7	1	CD
1	3	2	cassette
4	5	3	cassette
4	3	1	cassette

Music Titles

recordid	recordname	composer	price	image
2	Fifth Symphony	Mozart	21.00	
3	Third Symphony	Beethoven	18.99	
4	Four Seasons	Vivaldi	14.99	
5	Fifth Symphony	Beethoven	16.49	
6	Third Symphony	Mozart	15.00	
7	Adagios	Vivaldi	21.99	

Composer Table

composer name
Beethoven
J. S. Bach
Mozart
Vivaldi

Label/Title Table

label name	record id
CBS	2
CBS	3
EMI	5
RCA	7
Sony	4
Sony	6

Label Table

label name	label address
Sony	1540 Madison Ave NY, NY
EMI	133 Broadway NY, NY
CBS	1 CBS Plaza NY, NY
RCA	1800 42nd St NY, NY

Queries

Query 1
Which customers have ordered Mozart's fifth symphony?

SELECT c.custfname, c.custlname
FROM cust_tb AS c
WHERE c.custid IN
(
SELECT c1.custid
FROM cust_tb AS c1, order_tb AS o1, order_record_tb AS or1, record_tb AS r1
WHERE c1.custid = o1.custid AND o1.orderid = or1.orderid AND or1.recordid = r1.recordid
AND r1.composername = 'Mozart' AND r1.recordname ='Fifth Symphony'
)

custfname	custlname
Al	Alexander
Dodson	Dobbs

Query 2
How many customers have ordered both cassettes and CDs?

SELECT COUNT(*) AS cust_count
FROM cust_tb AS c1, order_tb AS o1, order_record_tb AS or1, order_tb AS o2, order_record_tb AS or2
WHERE c1.custid = o1.custid AND o1.orderid = or1.orderid AND or1.medium = 'CD'
AND c1.custid = o2.custid AND o2.orderid = or2.orderid AND or2.medium = 'cassette'

count
2

Query 3
Which composer sold the most recordings?

SELECT t1.composername
FROM
(
SELECT p1.composername, SUM(or1.quantity) AS sumsold
FROM composer_tb AS p1, record_tb AS r1, order_record_tb AS or1
WHERE p1.composername = r1.composername AND r1.recordid=or1.recordid
GROUP BY p1.composername
)

composer name
Beethoven

Query 4

For Beethoven's Third Symphony, how many were sold as CDs and how many were sold as cassettes?

SELECT t1.sumsold AS cdsold, t2.sumsold AS cassettesold
FROM
(
SELECT p1.composername, SUM(or1.quantity) AS sumsold
FROM composer_tb AS p1, record_tb AS r1, order_record_tb AS or1
WHERE p1.composername = r1.composername AND r1.recordid=or1.recordid
AND p1.composername = 'Beethoven' AND r1.recordname = 'Third Symphony' AND or1.medium = 'CD'
GROUP BY p1.composername
) AS t1,
(
SELECT p1.composername, SUM(or1.quantity) AS sumsold
FROM composer_tb AS p1, record_tb AS r1, order_record_tb AS or1
WHERE p1.composername = r1.composername AND r1.recordid=or1.recordid
AND p1.composername = 'Beethoven' AND r1.recordname = 'Third Symphony' AND or1.medium = 'cassette'
GROUP BY p1.composername
) AS t2

cd sold	cassette sold
1	3

Query 5

Which recording labels sell compositions by Vivaldi?

SELECT l1.labelname
FROM label_tb as l1, label_record_tb AS lr1, record_tb AS r1, composer_tb AS p1
WHERE l1.labelname = lr1.labelname AND lr1.recordid = r1.recordid AND r1.composername = p1.composername
AND p1.composername = 'Vivaldi'
GROUP BY l1.labelname

label name
RCA
Sony

Query 6

Which recording labels sell compositions by both Mozart and Beethoven?

[subquery]

SELECT l1.labelname

FROM label_tb as l1, label_record_tb AS lr1, record_tb AS r1, composer_tb AS p1

WHERE l1.labelname = lr1.labelname AND lr1.recordid = r1.recordid AND r1.composername = p1.composername

AND p1.composername = 'Mozart'

GROUP BY l1.labelname

l1.labelname
CBS
Sony

[subquery]

SELECT l2.labelname

FROM label_tb as l2, label_record_tb AS lr2, record_tb AS r2, composer_tb AS p2

WHERE l2.labelname = lr2.labelname AND lr2.recordid = r2.recordid AND r2.composername = p2.composername

AND p2.composername = 'Beethoven'

GROUP BY l2.labelname

l2.labelname
CBS
EMI

SELECT l3.labelname

FROM label_tb as l3,

(

SELECT l1.labelname

FROM label_tb as l1, label_record_tb AS lr1, record_tb AS r1, composer_tb AS p1

WHERE l1.labelname = lr1.labelname AND lr1.recordid = r1.recordid AND r1.composername = p1.composername

AND p1.composername = 'Mozart'

GROUP BY l1.labelname

) AS t1,

(

SELECT l2.labelname

FROM label_tb as l2, label_record_tb AS lr2, record_tb AS r2, composer_tb AS p2

WHERE l2.labelname = lr2.labelname AND lr2.recordid = r2.recordid AND r2.composername = p2.composername

AND p2.composername = 'Beethoven'

GROUP BY l2.labelname

) AS t2

WHERE l3.labelname = t1.labelname AND t1.labelname = t2.labelname

label name
CBS

Query 7
Which recording label sold the fewest recordings?

[subquery]
SELECT l1.labelname, SUM(or1.quantity) AS sumsold
FROM label_tb as l1, label_record_tb AS lr1, record_tb AS r1, composer_tb AS p1, order_record_tb AS or1
WHERE l1.labelname = lr1.labelname AND lr1.recordid = r1.recordid AND r1.recordid = or1.recordid
GROUP BY l1.labelname

label name	sumsold
CBS	24
EMI	16
RCA	4
Sony	12

SELECT t1.labelname
FROM
(
SELECT l1.labelname, SUM(or1.quantity) AS sumsold
FROM label_tb as l1, label_record_tb AS lr1, record_tb AS r1, composer_tb AS p1, order_record_tb AS or1
WHERE l1.labelname = lr1.labelname AND lr1.recordid = r1.recordid AND r1.recordid = or1.recordid
GROUP BY l1.labelname
) AS t1
WHERE t1.sumsold <= ALL
(
SELECT SUM(or2.quantity) AS sumsold
FROM label_tb as l2, label_record_tb AS lr2, record_tb AS r2, composer_tb AS p2, order_record_tb AS or2
WHERE l2.labelname = lr2.labelname AND lr2.recordid = r2.recordid AND r2.recordid = or2.recordid
GROUP BY l2.labelname
)

label name
RCA

Query 8

Which recording labels have sold no cassettes?

[subquery]

SELECT l1.labelname

FROM label_tb as l1, label_record_tb AS lr1, record_tb AS r1, composer_tb AS p1, order_record_tb AS or1

WHERE l1.labelname = lr1.labelname AND lr1.recordid = r1.recordid AND r1.recordid = or1.recordid

AND or1.medium = 'cassette'

labelname
CBS
EMI

SELECT l2.labelname

FROM label_tb AS l2

WHERE l2.labelname NOT IN

(

SELECT l1.labelname

FROM label_tb as l1, label_record_tb AS lr1, record_tb AS r1, composer_tb AS p1, order_record_tb AS or1

WHERE l1.labelname = lr1.labelname AND lr1.recordid = r1.recordid AND r1.recordid = or1.recordid

AND or1.medium = 'cassette'

)

label name
RCA
Sony

Query 9

From labels that sold at least one CD, which label sold the fewest CDs?

[subquery]

SELECT l1.labelname, SUM(or1.quantity) AS sumsold

FROM label_tb as l1, label_record_tb AS lr1, record_tb AS r1, composer_tb AS p1, order_record_tb AS or1

WHERE l1.labelname = lr1.labelname AND lr1.recordid = r1.recordid AND r1.recordid = or1.recordid

AND or1.medium = 'CD'

GROUP BY l1.labelname

label name	sumsold
CBS	12
RCA	4
Sony	12

SELECT t1.labelname

FROM

(

SELECT l1.labelname, SUM(or1.quantity) AS sumsold

FROM label_tb as l1, label_record_tb AS lr1, record_tb AS r1, composer_tb AS p1, order_record_tb AS or1

WHERE l1.labelname = lr1.labelname AND lr1.recordid = r1.recordid AND r1.recordid = or1.recordid

AND or1.medium = 'CD'

GROUP BY l1.labelname

) AS t1

WHERE t1.sumsold <= ALL

(

SELECT SUM(or2.quantity) AS sumsold

FROM label_tb as l2, label_record_tb AS lr2, record_tb AS r2, composer_tb AS p2, order_record_tb AS or2

WHERE l2.labelname = lr2.labelname AND lr2.recordid = r2.recordid AND r2.recordid = or2.recordid

AND or2.medium = 'CD'

GROUP BY l2.labelname

)

label name
RCA

Query 10

How many customers bought more than four CDs?

[subquery]

SELECT c1.custid, SUM(or1.quantity) AS sumbought

FROM cust_tb AS c1, order_tb AS o1, order_record_tb AS or1

WHERE c1.custid = o1.custid AND o1.orderid = or1.orderid

AND or1.medium = 'CD'

GROUP BY c1.custid

Custid	sumbought
1	1
3	1
4	5

SELECT COUNT(*) AS custcount

FROM

(

SELECT c1.custid, SUM(or1.quantity) AS sumbought

FROM cust_tb AS c1, order_tb AS o1, order_record_tb AS or1

WHERE c1.custid = o1.custid AND o1.orderid = or1.orderid

AND or1.medium = 'CD'

GROUP BY c1.custid

) AS t1

WHERE 4 < t1.sumbought

count
1

Query 11
Insert Label Record

INSERT INTO label_tb (labelname, labeladdress)
VALUES
('$_POST[labelname]','$_POST[labeladdress]')

*SEE PRINTOUT

Query 12

Print out a report containing a list of all CDs bought by each customer.

SELECT c1.custfname, c1.custlname, r1.recordname, p1.composername
FROM cust_tb AS c1, order_tb AS o1, order_record_tb AS or1, record_tb AS r1, composer_tb AS p1
WHERE c1.custid = o1.custid AND o1.orderid = or1.orderid AND or1.recordid = r1.recordid AND r1.composername = p1.composername
AND or1.medium = 'CD'

custfname	custlname	recording	composer
Al	Alexander	Fifth Symphony	Mozart
Carly	Cortez	Third Symphony	Beethoven
Dodson	Dobbs	Fifth Symphony	Mozart
Dodson	Dobbs	Four Seasons	Vivaldi
Dodson	Dobbs	Third Symphony	Mozart
Dodson	Dobbs	Adagios	Vivaldi

*SEE PRINTOUT