Module 4 Problems

The problems use the intercollegiate athletics database. The course website also contains Oracle and MySQL CREATE TABLE statements as well as INSERT statements.

1. List the customer number, the name, the phone number, and the city of customers.
2. List the customer number, the name, the phone number, and the city of customers who reside in Colorado (State is CO).
3. List all columns of the *EventRequest* table for events costing more than $4000. Order the result by the event date (*DateHeld*).
4. List the event number, the event date (DateHeld), and the estimated audience number with approved status and audience greater than 9000 or with pending status and audience greater than 7000.
5. List the event number, event date (DateHeld), customer number and customer name of events placed in January 2013 by customers from Boulder.
6. List the average number of resources used (NumberFld) by plan number. Include only location number L100.
7. List the average number of resources used (NumberFld) by plan number. Only include location number L100. Eliminate plans with less than two event lines containing location number L100.

Module 4 Problem Solutions

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6. List the average number of resources used (NumberFld) by plan number. Include only location number L100.
7. List the average number of resources used (NumberFld) by plan number. Only include location number L100. Eliminate plans with less than two event lines containing location number L100.

Solutions

1.
```
SELECT CustNo, CustName, Phone, City
  FROM Customer
```

2.
```
SELECT CustNo, CustName, Phone, City
```

```
 FROM Customer
 WHERE State = 'CO'
```

3.

```
SELECT *
 FROM EventRequest
 WHERE EstCost > 4000
 ORDER BY DateHeld
```

4. The parentheses are necessary when mixing the logical AND and OR connectors.

```
SELECT EventNo, DateHeld, Status, EstAudience
 FROM EventRequest
 WHERE (Status = 'Approved' AND EstAudience > 9000)
       OR (Status = 'Pending' AND EstAudience > 7000)
```

5.

Oracle solutions:

```
SELECT EventNo, DateHeld, Customer.CustNo, CustName
 FROM EventRequest, Customer
 WHERE City = 'Boulder' AND DateHeld BETWEEN ‘1-Dec-2013' AND ’31-Dec-
2013'
      AND EventRequest.CustNo = Customer.CustNo;

SELECT  EventNo, DateHeld, Customer.CustNo, CustName
 FROM  EventRequest INNER JOIN Customer ON  EventRequest.CustNo =
Customer.CustNo
 WHERE  City = 'Boulder' AND DateHeld BETWEEN ‘1-Dec-2013' AND ’31-
Dec-2013' ;
```

MySQL solution

```
SELECT EventNo, DateHeld, Customer.CustNo, CustName
 FROM EventRequest, Customer
 WHERE City = 'Boulder' AND DateHeld BETWEEN '2013-12-01'AND '2013-12-
31'
      AND EventRequest.CustNo = Customer.CustNo;

SELECT  EventNo, DateHeld, Customer.CustNo, CustName
 FROM  EventRequest INNER JOIN Customer ON  EventRequest.CustNo =
Customer.CustNo
 WHERE  City = 'Boulder' AND DateHeld BETWEEN '2013-12-01'AND '2013-12-
31';
```

6.

```
SELECT PlanNo, AVG(NumberFld) AS AvgNumResources
  FROM EventPlanLine
  WHERE LocNo = 'L100'
  GROUP BY PlanNo;
```

7.

```
SELECT PlanNo, AVG(NumberFld) AS AvgNumResources,
            COUNT(*) AS NumEventLines
  FROM EventPlanLine
  WHERE LocNo = 'L100'
  GROUP BY PlanNo
  HAVING COUNT(*) > 1;
```

Intercollegiate Athletic Database Tables

The Intercollegiate Athletic database is used in assignments 1 and 2. This document describes the tables and relationships.

Table Description and Usage

The Intercollegiate Athletic database supports the scheduling and operation of events. Customers initiate event requests with the Intercollegiate Athletic Department. Events are sometimes scheduled several months in advance. The facility and date held are recorded on an event request. If an event request is denied, no additional action is taken. If an event request is approved, one or more event plans are made. Typically, event plans are made for the setup, operation, and clean up of an event. An employee is assigned to manage an event plan before the plan is executed. Initially, there may not be an assigned employee. An event plan consists of one or more event plan lines. In an event plan line, the resource, location, time, and number of resources (*EventPlanLine.Number*) are recorded.

The *EventRequest* table is the hub of the database. An event request represents an event scheduled at a facility. For example, a basketball game may be scheduled at the gymnasium. Holding an event involves plans for allocation of resources including personnel and equipment. The *EventPlan* table contains plans for the setup, operation, and cleanup of an event. The *EventPlanLine* table contains the individual resources required in an event plan. Resources are assigned to specific locations of a facility. For example, guards may be required at the gates of the football stadium.

Population of Sample Tables

Sample rows are shown for each table in the Intercollegiate Athletic Database. You will populate the tables in Assignment 1 and query the tables in Assignment 2 using either Oracle or MySQL. Note that some columns are formatted (such as *rate* and *estcost*), but that you should consider these column values as numeric. Columns with missing values mean that the CREATE TABLE statement should not have NOT NULL constraints. For example, *BudNo* column in the *EventRequest* table has missing values so the *BudNo* column should not have NOT NULL constraint.

Customer

custno	custname	address	Internal	contact	phone	city	state	zip
C100	Football	Box 352200	Y	Mary Manager	6857100	Boulder	CO	80309
C101	Men's Basketball	Box 352400	Y	Sally Supervisor	5431700	Boulder	CO	80309
C103	Baseball	Box 352020	Y	Bill Baseball	5431234	Boulder	CO	80309
C104	Women's Softball	Box 351200	Y	Sue Softball	5434321	Boulder	CO	80309
C105	High School Football	123 AnyStreet	N	Coach Bob	4441234	Louisville	CO	80027

Employee

empno	empname	department	email	phone
E100	Chuck Coordinator	Administration	chuck@colorado.edu	3-1111
E101	Mary Manager	Football	mary@colorado.edu	5-1111
E102	Sally Supervisor	Planning	sally@colorado.edu	3-2222
E103	Alan Administrator	Administration	alan@colorado.edu	3-3333

Facility

facno	facname
F100	Football stadium
F101	Basketball arena
F102	Baseball field
F103	Recreation room

Location

locno	facno	locname
L100	F100	Locker room
L101	F100	Plaza
L102	F100	Vehicle gate
L103	F101	Locker room
L104	F100	Ticket Booth
L105	F101	Gate
L106	F100	Pedestrian gate

ResourceTbl

resno	resname	rate
R100	attendant	$10.00
R101	police	$15.00
R102	usher	$10.00
R103	nurse	$20.00
R104	janitor	$15.00
R105	food service	$10.00

EventRequest

eventno	dateheld	datereq	facno	custno	dateauth	status	estcost	estaudience	budno
E100	25-Oct-2013	06-Jun-2013	F100	C100	08-Jun-2013	Approved	$5,000.00	80000	B1000
E101	26-Oct-2013	28-Jul-2013	F100	C100		Pending	$5,000.00	80000	B1000
E102	14-Sep-2013	28-Jul-2013	F100	C100	31-Jul-2013	Approved	$5,000.00	80000	B1000
E103	21-Sep-2013	28-Jul-2013	F100	C100	01-Aug-2013	Approved	$5,000.00	80000	B1000
E104	03-Dec-2013	28-Jul-2013	F101	C101	31-Jul-2013	Approved	$2,000.00	12000	B1000
E105	05-Dec-2013	28-Jul-2013	F101	C101	01-Aug-2013	Approved	$2,000.00	10000	B1000
E106	12-Dec-2013	28-Jul-2013	F101	C101	31-Jul-2013	Approved	$2,000.00	10000	B1000
E107	23-Nov-2013	28-Jul-2013	F100	C105	31-Jul-2013	Denied	$10,000.00	5000	

EventPlan

planno	eventno	workdate	notes	activity	empno
P100	E100	25-Oct-2013	Standard operation	Operation	E102
P101	E104	03-Dec-2013	Watch for gate crashers	Operation	E100
P102	E105	05-Dec-2013	Standard operation	Operation	E102
P103	E106	12-Dec-2013	Watch for seat switching	Operation	
P104	E101	26-Oct-2013	Standard cleanup	Cleanup	E101
P105	E100	25-Oct-2013	Light cleanup	Cleanup	E101
P199	E102	10-Dec-2013	Standard operation	Operation	E101
P299	E101	26-Oct-2013		Operation	E101
P349	E106	12-Dec-2013		Cleanup	E101
P85	E100	25-Oct-2013	Standard operation	Setup	E102
P95	E101	26-Oct-2013	Extra security	Setup	E102

EventPlanLine

PlanNo	LineNo	TimeStart	TimeEnd	NumberFld	LocNo	ResNo
P100	1	25-Oct-2013 8:00	25-Oct-2013 17:00	2	L100	R100
P100	2	25-Oct-2013 12:00	25-Oct-2013 17:00	2	L101	R101
P100	3	25-Oct-2013 7:00	25-Oct-2013 16:30	1	L102	R102
P100	4	25-Oct-2013 18:00	12-Dec-2013 22:00	2	L100	R102
P101	1	3-Dec-2013 18:00	3-Dec-2013 20:00	2	L103	R100
P101	2	3-Dec-2013 18:30	3-Dec-2013 19:00	4	L105	R100
P101	3	3-Dec-2013 19:00	3-Dec-2013 20:00	2	L103	R103
P102	1	5-Dec-2013 18:00	5-Dec-2013 19:00	2	L103	R100
P102	2	5-Dec-2013 18:00	5-Dec-2013 21:00	4	L105	R100
P102	3	5-Dec-2013 19:00	5-Dec-2013 22:00	2	L103	R103
P103	1	12-Dec-2013 18:00	12-Dec-2013 21:00	2	L103	R100
P103	2	12-Dec-2013 18:00	12-Dec-2013 21:00	4	L105	R100
P103	3	12-Dec-2013 19:00	12-Dec-2013 22:00	2	L103	R103
P104	1	26-Oct-2013 18:00	26-Oct-2013 22:00	4	L101	R104
P104	2	26-Oct-2013 18:00	26-Oct-2013 22:00	4	L100	R104
P105	1	25-Oct-2013 18:00	25-Oct-2013 22:00	4	L101	R104
P105	2	25-Oct-2013 18:00	25-Oct-2013 22:00	4	L100	R104
P199	1	10-Dec-2013 8:00	10-Dec-2013 12:00	1	L100	R100
P349	1	12-Dec-2013 12:00	12-Dec-2013 15:30	1	L103	R100
P85	1	25-Oct-2013 9:00	25-Oct-2013 17:00	5	L100	R100
P85	2	25-Oct-2013 8:00	25-Oct-2013 17:00	2	L102	R101
P85	3	25-Oct-2013 10:00	25-Oct-2013 15:00	3	L104	R100
P95	1	26-Oct-2013 8:00	26-Oct-2013 17:00	4	L100	R100
P95	2	26-Oct-2013 9:00	26-Oct-2013 17:00	4	L102	R101
P95	3	26-Oct-2013 10:00	26-Oct-2013 15:00	4	L106	R100
P95	4	26-Oct-2013 13:00	26-Oct-2013 17:00	2	L100	R103
P95	5	26-Oct-2013 13:00	26-Oct-2013 17:00	2	L101	R104

Primary and Foreign Keys

The primary and foreign keys are depicted in Figure 1. An event request is related to many (one or more) event plans but only one customer. An event plan contains many event plan lines but only one supervising employee. An event plan line references a resource and location. A facility has many locations, but a location is specific to a facility.

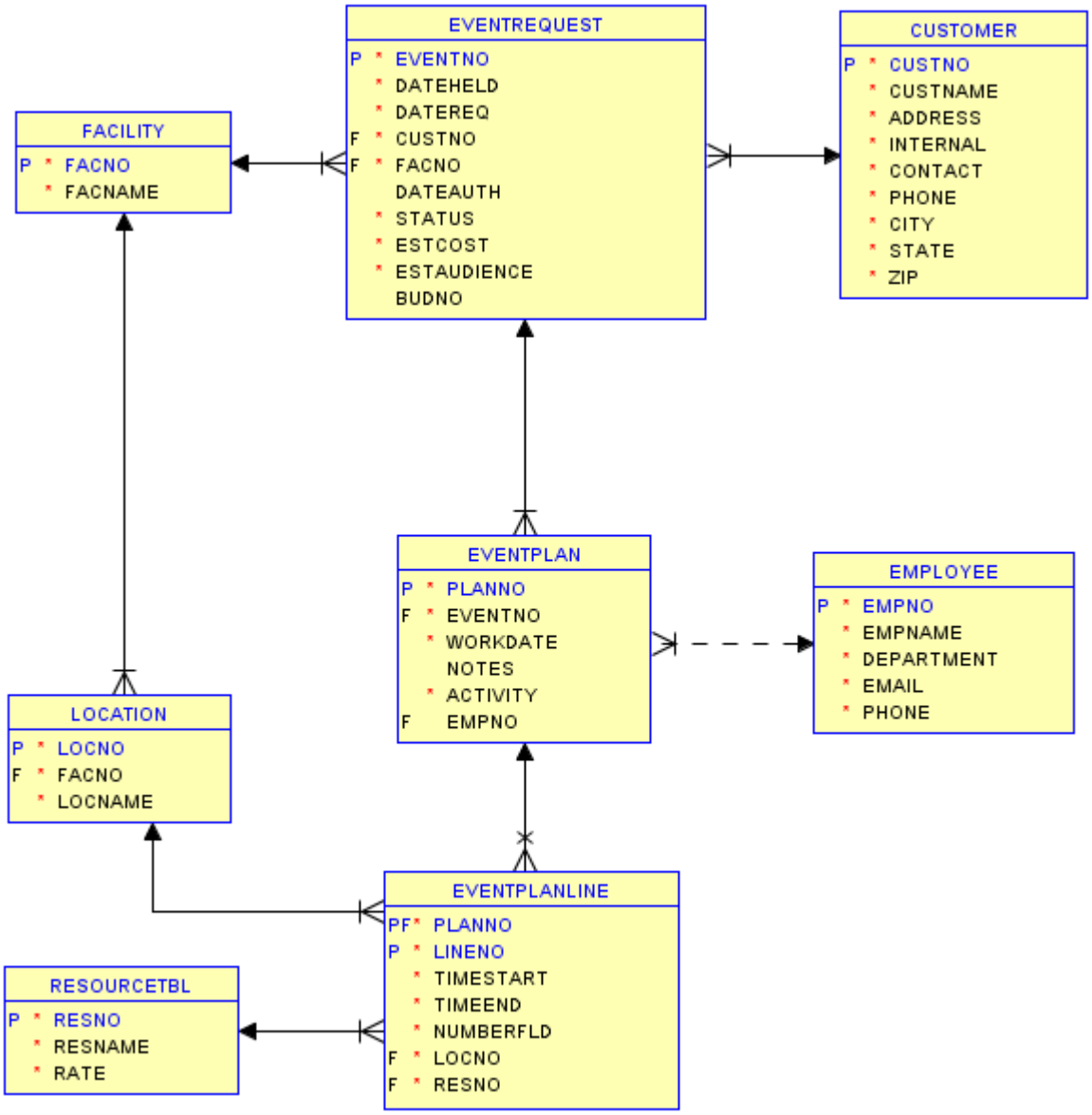

Figure 1: Oracle Relational Database Diagram for the Intercollegiate Athletic Database

All foreign key columns are required except for *EventPlan.EmpNo*. When a column is required, the user must enter a valid value according to the specified integrity rules (including referential integrity). For example when entering a new row in the *EventRequest* table, the user must know the customer number.