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Mata Kuliah : Data Warehouse dan Bisnis Intelligence

Kom : C

Tugas 1

**Module 3 Problems**

The problems use the *Customer*, *Facility*, and *Location* tables of the intercollegiate athletic database. The *Customer* table contains clients who initiate event requests. The *Facility* table contains available facilities. The *Location* table contains several locations inside facilities. The primary keys of the tables are *CustNo* for *Customer*, *FacNo* for *Facility*, and *LocNo* for *Location*.

**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 |

**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 |

1. Write a CREATE TABLE statement for the *Customer* table. Choose data types appropriate for the DBMS used in your course. All columns are required (not null).

Answer :

CREATE TABLE Customer (CustNo VARCHAR(4) NOT NULL, CustName VARCHAR(32) NOT NULL, Address VARCHAR(50) NOT NULL, Internal CHAR(1) NOT NULL, Contact VARCHAR(64) NOT NULL, Phone VARCHAR(7) NOT NULL, City VARCHAR(32) NOT NULL, State VARCHAR(2) NOT NULL, Zip VARCHAR(5) NOT NULL, CONSTRAINT PK\_CUSTOMER PRIMARY KEY (CustNo) );

1. Write a CREATE TABLE statement for the *Facility* table. Choose data types appropriate for the DBMS used in your course. All columns are required (not null).

Answer :

CREATE TABLE Facility (FacNo VARCHAR(4) NOT NULL, FacName VARCHAR(32) NOT NULL, CONSTRAINT PK\_FACILITY PRIMARY KEY (FacNo) );

1. Write a CREATE TABLE statement for the *Location* table. Choose data types appropriate for the DBMS used in your course. *LocName* column is required (not null).

Answer :

CREATE TABLE Location (LocNo VARCHAR(4) NOT NULL, FacNo VARCHAR(4), LocName VARCHAR(32) NOT NULL, CONSTRAINT PK\_LOCATION PRIMARY KEY (LocNo));

1. Identify the foreign key(s) and 1-M relationship(s) among the *Customer*, *Facility*, and *Location* tables. For each relationship, identify the parent table and the child table.

Answer :

***Facility*** table has a 1-M relationship to ***Location*** table where ***FacNo*** in ***Facility*** are **primary key** while ***FacNo*** in ***Location*** table are **foreign key**. For this relationship, ***Facility*** is the parent table while ***Location*** is the child table.

1. Extend your CREATE TABLE statement from problem (3) with referential integrity constraints.

Answer :

CREATE TABLE Location (LocNo VARCHAR(4) NOT NULL, FacNo VARCHAR(4), LocName VARCHAR(32) NOT NULL, CONSTRAINT PK\_LOCATION PRIMARY KEY (LocNo), CONSTRAINT FK\_FACNO FOREIGN KEY (FacNo) REFERENCES FACILITY (FacNo) );

1. From examination of the sample data and your common understanding of scheduling and operation of events, are null values allowed for the foreign key in the *Location* table? Why or why not? Extend the CREATE TABLE statement in problem (5) to enforce the null value restrictions if any.

Answer : Null values aren’t allowed for the foreign key in the *Location* table because foreign keys have a relationship to other tables. Therefore, if null values are allowed in foreign key then the 1-M relationship (as stated in problem (4)) will cause an error and the query won’t be executed properly.

The query to enforce my statements are written below :

CREATE TABLE Location (LocNo VARCHAR(4) NOT NULL, FacNo VARCHAR(4) NOT NULL, LocName VARCHAR(32) NOT NULL, CONSTRAINT PK\_LOCATION PRIMARY KEY (LocNo), CONSTRAINT FK\_FACNO FOREIGN KEY (FacNo) REFERENCES FACILITY (FacNo) );

1. Extend your CREATE TABLE statement for the *Facility* table (problem 2) with a unique constraint for *FacName*. Use an external named constraint clause for the unique constraint.

Answer :

CREATE TABLE Facility (FacNo VARCHAR(4) NOT NULL, FacName VARCHAR(32) NOT NULL, CONSTRAINT PK\_FACILITY PRIMARY KEY (FacNo), CONSTRAINT Unique\_FacName UNIQUE(FacName));