

UD EVENTS

UD Events (UDE) is the company that organizes all events at the University of Delaware. Business is great and Candy Friedman, UDE's CEO, would like to invest in a world-class enterprise system. She asks AISY, a software company in Newark, to help her out. Brett Mack (BM), one of AISY's employees interviews Candy Friedman (CF). Use the interview below to draw an (E-R) enterprise model.

BM. What kind of events do you organize?

CF. We organize a wide variety of events. For example, Stephen Framil will present a cello recital on October 17 at the Amy E. du Pont Music Building while Hootie and the Blowfish will perform at the UD football stadium on November 1 (concert).

BM. What information do you record about events?

CF. We need to know **when** they take place, **where** they take place, and **who** performs. For each event we record a code and a date (when). We further record who performs and we record a code and a name for each performer. Most performers (> 80%) have a manager. In case a performer has a manager, we record the code, name and phone number of the manager. Often, a manager represents more than one performer. Only managers that represent at least one performer should be recorded in UDE's enterprise system. We record at most one manager for each performer. For each of the venues (where), we record address, contact person, and seating capacity information. Each event has exactly one venue but can have more than one performer (but at least one). It is important to record potential venues. We consider the Tyler Atrium in Lerner Hall as a venue but we haven't used it for any event yet. We try to organize a big concert at the football stadium every semester. Only performers that are associated with an event are included in UDE's enterprise system. Actually, Hootie and the Blowfish performed at Clayton Hall (a venue) two years ago (concert).

BM. Is there any other information you record about events?

CF. Well, we have policies that determine what event types can take place at what types of venue. We have identified more than 15 different venue types including stadium, lecture hall, parking, and restaurant/bars. We categorize events as concerts, lecture series, musicals, karaoke, etc. Concerts, lecture series, etc. are event types. The following are examples of policies. Concerts must take place in a stadium, in a conference hall, or on a parking lot; academic lectures must take place in a lecture hall or a conference hall; parties or karaoke events must take place in a restaurant/bar. We explicitly record the policies in our database. There are policies for all event types and for all venue types. We record exactly one event type per event and exactly one venue type per venue. It should be possible to add a new event type before an event of that type occurs. Only venue types for which at least one venue exist are considered.

BM. What is the most important activity of your company?

CF. Selling tickets !!

BM. Tell me more about tickets!

CF. We distinguish between 5 different types of tickets, labeled A to E (A being the best and E being the worst.) We record a label and a description for each ticket type. The types of tickets available depend on the event (not the venue). For an event on a parking lot we might just have tickets of type E. However, sometimes a tribune is placed on the parking lot and then we have tickets of type D and E. There are always E tickets (tickets of type E) available for each event. There are A,B,C,D and E tickets available for the Hootie and the Blowfish concert. There are A, B, and E tickets available for the Stephen Framil cello recital. We actually have a sixth ticket type: “Z,” and “Z” should be recorded in the enterprise system. However, there has never been an event for which tickets of type “Z” have been available. There are many tickets available for each event (sometimes thousands). For each ticket, we record a number, a seat#, the status of the ticket (open/sold) and the ticket type. There is exactly one ticket type for each ticket. For events with no actual seats, such as some parking events, we assign ‘000’ as seat number. There is exactly one event for each ticket; i.e., tickets are valid for one event only.

BM. What about the actual selling of the tickets?

CF. Well, customers can get tickets in two different ways. (1) In most cases, customers order tickets for an event. An order always applies to one specific event. There can be multiple orders for the same event. For each order, the customer needs to specify how many seats (quantity) are needed per ticket type. For example, one of our customers ordered 2 seats of ticket type A and 2 seats of ticket type B for the ‘Hootie and the Blowfish’ concert. Another customer ordered 3 seats of ticket type A for the Stephen Framil cello recital. We record exactly one customer for each order. UDE, usually delivers the actual tickets to the customer within two weeks – the delivery is called a sale. Partial deliveries of tickets are rare but they occur. There is at most one order per delivery/sale. We didn’t sell a single ticket for the ‘Cougar Banana Symphony’ event that was scheduled last night (we never received an order). We had 500 tickets available for this event (and thus recorded in our database). (2) Sometimes, customers can buy the tickets at the event; i.e., there is no order. This is only true for 10% of the sales.

There is at least one ticket per sale. A ticket can be sold only once (by UDE). We don’t record customers for sales (only for orders). Only customers that have placed at least one order are recorded in our enterprise system. We sell most of our tickets (85%).

BM. What about the price of the tickets and the payments by the customers?

CF. Very complex! Let’s forget about payments for now!

BM. Anything else I need to know about the sale of tickets? Any discounts?

CF. Oops! I almost forgot. We recognize a number of customer types (such as students and faculty) that are given discounts and privileges. For each customer type, we record a code, a name, a discount (can be 0) and a description of the privileges. Not all customers are assigned a customer type and the same customer can be assigned more than one customer type. In the latter case, the customer receives the highest discount and a mixture of the privileges. We currently have more than 5,000 customers of (customer)

type “Student.” We just created a new category “Local Business.” However, we don’t have any customer of this type yet.

BM. Thanks!

CF. You are welcome!

ASSIGNMENTS

1. Draw an E-R Diagram

You have to specify all entities, relationships, attributes, relationship attributes, and cardinalities.

2. Define a Relational Database Structure for your E-R Diagram

Attribute List

CustomerType-code	Order-number
Event-code	Performer-name
Order-number	EventType-description
TicketType-label	VenueType-code
Customer-id	Sale-date
Manager-phone-number	VenueType-name
Order-TicketType-quantity	Ticket-number
Order-date	CustomerType-name
Sale-invoice-number	Ticket-seat#
EventType-name	TicketType-description
CustomerType-discount	VenueType-description
Venue-address	Performer-code
Venue-contact-person	Customer-name
Ticket-status	Manager-phone-number
Manager-name	Manager-code
Event-date	Venue-seating-capacity
CustomerType-privileges	