

University Fest Management System – Case Study

Description

In the dynamic and vibrant atmosphere of a university, annual fests are the pinnacle of creativity, innovation, and community engagement. In order to streamline the process of organizing and managing these fests, a comprehensive University Fest Management System is to be designed for the university. This system aims to store the information related to the fests hosted by the university and all the information related to that particular university as given below.

Fests are organized in the university multiple times a year, and each fest bears a distinctive name, ID which helps in the unique identification of the fest, and the corresponding year it was hosted. These fests are managed by multiple teams, but a single team is entrusted with the leadership role of heading the fest's execution.

As described above several teams are involved to make the fest a success. Each team is uniquely identified by a Team ID. It also would have the details regarding the team name, the number of members in the team, and the team type. Each team could be one of two types: management team denoted as “MNG” or an Organising team denoted as “ORG”. the management team is in charge of taking care of various responsibilities like leadership roles for the entire fest, finance, and event conduction, sponsorship, coordination, etc. whereas the organization team would host events that are conducted during the fest. Remember that the management team would not organize any events but rather only take care of the management. By default, the team would be considered an organizing team.

Every team would have a group of members who bring their expertise to the table for carrying out the necessary work. Each member possesses a unique member ID, name, date of birth (DOB), and age. Except for the team head, each member of the team would be headed by (or report to) another member of the same team.

The heart of any fest lies in its diverse range of events. The “ORG” teams would organize a lot of events for the fest. Each event is characterized by a unique event ID, event name, venue, date of conduction, and the price which the participants shall pay to take part in it. The venue should contain details about the block, the floor, and the room number where the event is conducted. The same event can be conducted on several days. Note that the price of any event should not exceed 1500 rupees.

Participants would play a pivotal role in the fest ecosystem. They are the ones who would be taking part in various events. The system captures essential information about participants like gender, name, student registration number (SRN), department, and semester. Participants can have certain friends or family members (Visitors) who could attend the fest. They would be

Database Management System

associated with a person who is taking part in the events. For every visitor, details like gender, name, and age shall be stored.

Only participants can register for any number of events (or not register for any event also). For every event that the participant would register he/she would get a registration number with which he/she can gain entry during the day of the event conduction. Remember that more than one participant could have the same registration number if the event they have registered is a group event (meaning participants would take part as a group and not individually).

A bustling fest is incomplete without stalls offering a wide array of items. Stalls are known for their unique names and IDs associated with them. They are central to fest commerce. These stalls provide participants with diverse items, each bearing a unique name, and type (Veg or Non-veg). Participants could buy items from a particular stall in any quantity and pay the amount. Remember the same item might be sold in multiple stalls with different prices. A record of the total quantity for every item a stall has is also to be maintained. Remember that a participant can buy the same item from the same stall (even in the same quantity) on multiple occasions (at different times).

To ensure smooth operations, the fest management system employs a tiered access system. The Administrators possess comprehensive control over the system, enabling them to read, write, and update all relevant information. The database to be designed is used by many users like the team heads who would have the authority to access and update event details, focusing on their specific responsibilities. The people who have set up the stalls can only edit the various items present and their corresponding prices. The participants, while being integral to the fest, are granted read-only access, ensuring a seamless flow of fest-related information that includes event information and the food items offered by various stalls.

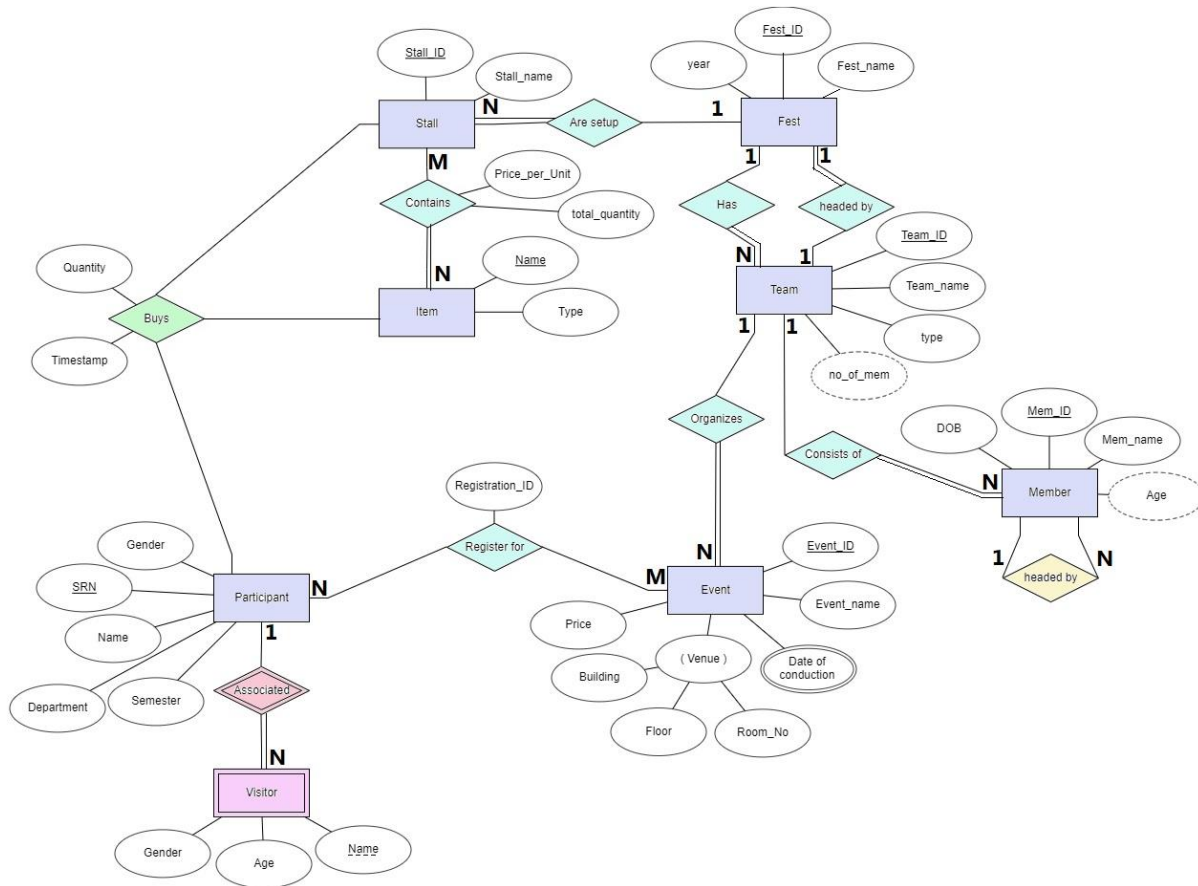
Points to be considered before designing:

- Note that all the names of any sort (let that be members, participants, Fests, Teams, or Events) will not be null.
- If a team has been removed, then all the events organized by that team also would be canceled.
- Cancellation of any event would automatically result in the cancellation of respective registrations associated with that event.

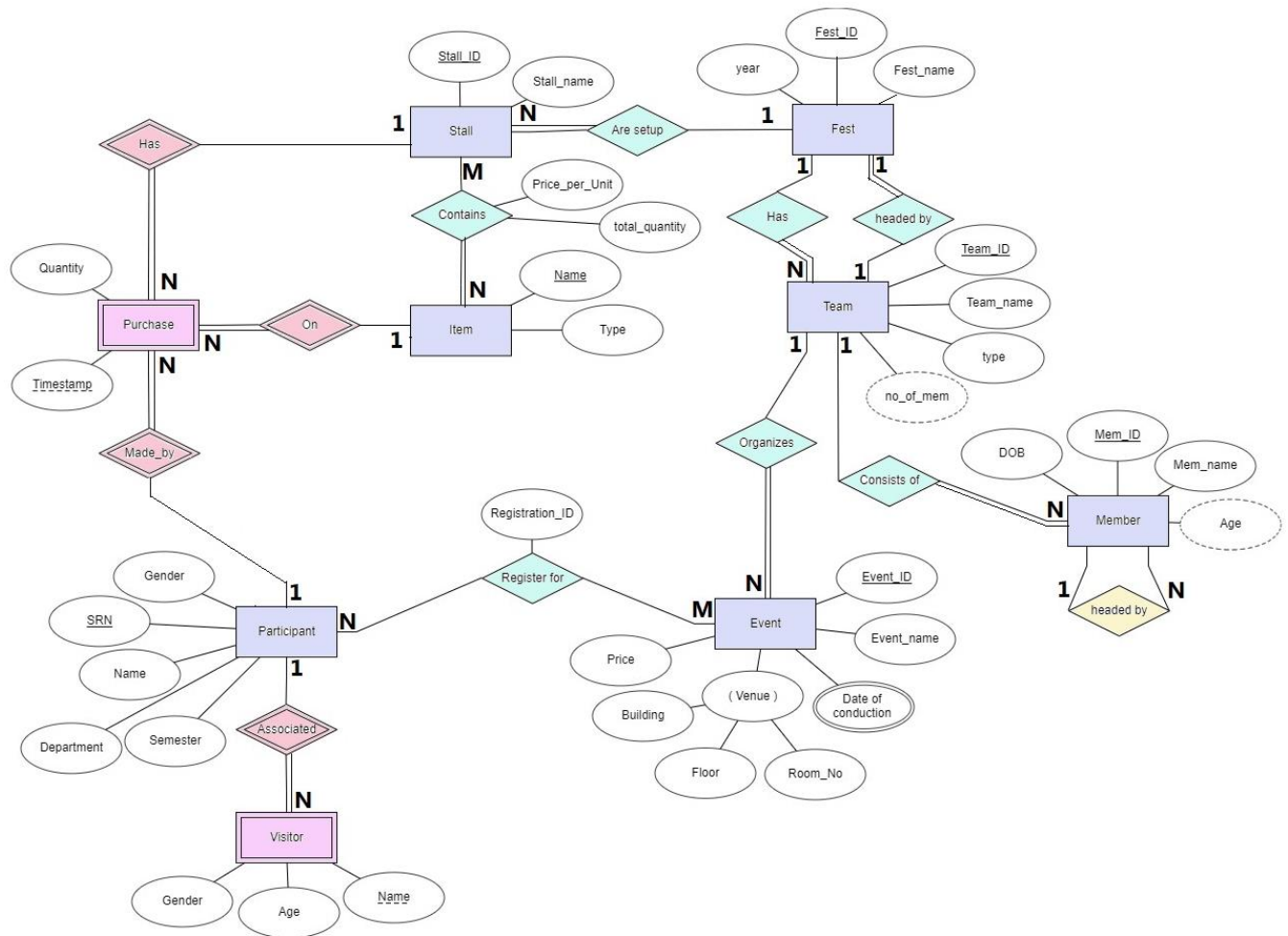
For the above description of the university fest database, design an E-R diagram representing all the essential information along with the cardinalities and participations. And also convert that E-R diagram into a relational schema.

Database Management System

The E-R diagram for the above description would be:



(OR)



Database Management System

