Team sqLITE, Group no.55 - Aadarsh, Ainesh, Sarthak

ER diagram: https://github.com/5arthak01/DAA/blob/master/Restaurant%20Ratings.drawio

Mini-world: A general database for feedback forms for restaurant chains, to store the surveys of their customers. The mini-world consists of a restaurant chain, its branches, employees (namely the managers, waiters and chefs), the dishes served and the feedback obtained from the customers. The users of this database would be the restaurant chain's upper-management. This database system can be utilised to evaluate the performance of branches, dishes and employees. For example, to see which employees are underperforming or which dishes are getting good reviews. With the data obtained, users can make necessary changes to address the findings from the data, such as removing or changing a dish if its average rating is low. If the terminologies are ignored, the waiter can be considered as a "delivery boy" and this can be used by an application like Zomato and Swiggy.

Database Requirements

1. Entities:- Customer, Waiter, Dish, Chef, Table, Employee
2. Entity with 2 key attributes:- Dish (Dish name and Dish number)
3. 2 weak-entity types:- Branch, Customer
4. 5 relationship types (cardinality ratios, participation constraints):- Branch_of, employ, Supervisor, Feedback, Seated
5. 4-degree relationship:- Feedback (Between customer, waiter, dish and chef)
6. 1 subclass:- Employee superclass has Waiter and Chef as subclass
7. Composite- Table_key; Multi-valued- Meal; Derived- Position, Name

Bonus

1. Supervisor - each employee is either supervisor or subordinate (manager iff supervisor)
2. wdym

Functional Requirements

I. Retrieval:

(A) Query functions

1. Selection
    a. Feedback
        i. A particular feedback
        ii. All feedback for a specific employee, a dish, or a branch
    b. Supervisor of a specific employee
    c. Subordinates for a specific supervisor
    d. Number of ratings at a branch

    e. Date of joining of a particular employee
2. Projection
    a. Feedback for all dishes of a meal-type ‘x’ (‘x’ can be breakfast, lunch, etc)
    b. Number of ratings given between time ‘x’ and ‘y’ for a branch ‘z’
3. Aggregate
    a. Average rating across all branches
    b. Average/Max/Min rating for a branch/a dish/an employee
    c. Average subordinate rating for a supervisor
    d. Number of employees under a rating ‘x’ across all branches
    e. Number of visitors at a particular branch
    f. Duration for which the particular employee has been working for the branch
4. Search
    a. Search in the suggestion attribute of feedback

(B) Analysis:

1. All branches/dishes/employees with average rating greater/less than a value ‘x’
2. All employees/dishes with average rating greater/less than ‘x’ for a branch ‘y’.
3. All supervisors with average subordinate rating greater/less than ‘x’ for a particular branch

II. Modification

1. Insertion
    a. Feedback (with rating and suggestion)
    b. Employee/Dish/Branch/Table/Restaurant
2. Update
    a. Price of a dish
3. Delete
    a. Employee/Dish/Branch