Sequoia Grove

Employee Database

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Bethany Armitage

Jasjot Sumal

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Phase 1

Part 1: Fact-Finding Techniques and Information Gathering

1.1 Introduction to Enterprise

The Sequoia Sandwich Company is a local popular high quality delicatessen that specializes in homemade sandwiches, salads, soups, and bakery desserts. They also offer catering for groups in the form of sandwich platters, boxed lunches, along with options to add beverages, chips and side salads. There are currently four locations, three in Bakersfield: downtown, southwest, and Rosedale, plus one in the Fresno/Clovis area.

1.2 Fact-Finding Techniques

Operating procedures pertaining to the company were discovered primarily through prior experience working for the company. Company data was collected both from prior work experience and from the company website. Operations on the data will be handled by the person in charge of scheduling which is usually the branch manager at the location. The database will be used to generate reports describing employees and their availability.

1.3 Focus of Database

The company currently manages all of its employees' shifts using hard copy. Employees are currently scheduled by the week, and managing everyone's shifts can become confusing to do by hand. Our database seeks to solve this problem by providing an employee management system that will track employee and shift availability given several criteria, so managers can quickly schedule employees into shifts using the database's front end. Employees will also be able to sign into the front end with a different set of permissions, allowing them to view the weekly schedule without modifying it.

Major entity set and relationship sets will include Employee information, Employee Positions, Shift openings, Employee Availability, Supply Deliveries, Available Ingredients, Menu Items, and Customer Transactions. The front end will focus on coordinating employee scheduling with shift openings, and will also display Supply Deliveries to help employees prepare for the day.

1.4 Itemized descriptions of Entity Sets and Relationship Sets:

including their names, meaning, attribute names and detail properties of each attributes, cardinalities and participation constraints of relationship.

Itemized descriptions of Entity and Relationship Sets

* employee (id, is\_manager, first\_name, last\_name, date\_employed, date\_unemployed, birth\_date, max\_hours\_per\_week, phone\_number)
* role (id, title)
* shift (id, title, weekday\_start, weekday\_end, weekend\_start, weekend\_end)
* delivery (id, title, weekdays)
* ingredients (id, name, available, date\_expired)
* menu\_item (id, name, type, price, photo)
* transaction (id, date)
* requests\_off (requested\_by, approved\_by, start\_date, end\_date)
* has\_role (employee\_id, role\_id, is\_training, date\_acquired, date\_removed, is\_primary, max\_days\_per\_week)
* has\_shifts (role\_id integer, shift\_id integer)
* is\_scheduled\_for (employee\_id, shift\_id, date\_scheduled)
* has\_availability\_for (employee\_id integer, shift\_id)
* cannot\_work\_with (employee1\_id, employee2\_id)
* delivers (ingredient\_id, delivery\_id)
* used\_in (ingredient\_id, menu\_item\_id, quantity)
* sold\_in (menu\_item\_id, transaction\_id, quantity)

1.5 User Groups are defined by Employee Roles In descending order of privilege are: managers (branch manager and store owner), shift supervisors, and all other employees (cashiers, janitors, food prep...)

managers-

reading, creating, updating and deleting schedules (past schedules may not be deleted)

reading, creating, updating and deleting employees

reading(view requests off), creating(submit requests off), and updating (approve/deny) requests off

reading, creating, updating, and deleting scheduled weekly deliveries

all employees-

reading schedules

reading (view own requests off only), creating(submit requests off), and updating (cancel own requests off)

reading weekly deliveries (shown on schedule)

For step 2, document the conceptual database design

Conceptual Database Design

2.1 Entity Set Description

Entity UVW:

name (use intuitive name

description: what is the purpose of the entity type, what information are held in the entities of the relationship type, and other information about the entities in the set (such the frequencies of insertion, deletions, and updates).

Attribute description

name

description

domain/type

value-range

default value

null value allowed or not?

unique?

single or multiple-value

Simple of Composite

candidate keys:

primary key:

Strong/Weak Entity

Fields to be indexed

Entity XYZ: ...

2.2 Relationship Set Description

Relationship ...:

Name (use intuitive name)

description: What is the relationship type for, the purpose of relations, what are the entities involved, meaning of each descriptive data field. Multiplicities and mapping cardinality.

Entity set involved

Mapping cardinality

Desciptive field

Participation Constraint: Partial/optional or total/mandatory

2.3 Related Entity Set

Describe the following and point out entity types and relationships that are derived with the specialization/generalization process.

Specialization/Generalization Relationships(is-A) Participation constraint Disjoint constraint

Aggregation/has-relationship Composite

2.4 E-R Diagram

Label the entity types with attributes, relationship types, multiplicities.