UNIVERSITÀ DEGLI STUDI DELL'AQUILA

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CORSO DI LAUREA MAGISTRALE IN INFORMATICA (ASE)

Insegnamento Model Driven Engineering

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Domain description

A restaurant is an establishment in a city, town, or village where clients can order from one or more menus and eat food prepared on the spot. It may have multiple dining rooms with tables and seats/chairs, bathrooms, parking areas, and other amenities. A restaurant is typically run by one or more owners who may also work as employees, alongside chefs, waiters, cashiers, pizza makers, etc., all of whom have valid fixed-term or open-ended contracts.

Metamodel Description

The metamodel represents a structure for modeling a restaurant management system; therefore, it's designed to capture details of a restaurant's structure, management, and menu organization, accommodating various components needed for operational and structural information.

1. **Person**: An abstract class modeling the concept of a real-life person, with attributes like `name`, `surname`, `fiscalCode`, `birthDate`, `gender`, and `birthPlace` (linked to `City`). The `gender` attribute is an enum with values `Male` and `Female`.
    - **Employee**: A subclass of `Person` with additional attributes such as `contractExpirationDate`, `contractSignDate`, `salary`, and `role`, that models the restaurant employees. The `role` is an enum, allowing values like `Chef`, `SousChef`, `Waiter`, `Cashier`, `headWaiter`, and `headChef`, which are, in fact, some of the main working figures you can find in a restaurant.
    - **Owner**: Another subclass of `Person` with an additional attribute, `vat`, representing the owner's VAT number, which models the owner of the restaurant.
2. **Restaurant**: The main entity of the model, representing a restaurant, like a sushi restaurant or a pizzeria. It has attributes like `name`, `street`, `telephone`, and references to `City`, `Room`, `Owner`, `Employee`, and `Menu`. The relationships imply that a restaurant can have multiple rooms, owners, employees, and menus.
3. **City:** The `City` class models an existing city and has attributes `name`, and `cap`, and is linked to a `Region`.
4. **Region**: The `Region` class has a single attribute, `name`, and describes the region in which a city is.
5. **RestaurantArea**: An abstract class representing different areas belonging to a restaurant, both outside or inside the building (like a parking area or a restroom), with attributes `name`, `perimeter`, and `area`.
    - **DiningRoom**: A subclass of `RestaurantArea`, modeling a restaurant dining room where people eat, containing multiple `Table` objects.
    - **Kitchen**: Another subclass representing the restaurant kitchen with an attribute `numberOfStoves`, which tells how many available stoves are in it.

    - **Bathroom**: A subclass that models a bathroom of the restaurant, which includes attributes like `numberOfToilets`, which tells how many cabinets are in the bathroom, `gender`, to indicate if the bathroom is for women or men, and `isAccessible`, indicating if the bathroom is aimed at impaired people.
6. **Table**: Represents tables within the dining area, with attributes like **number**, which indicates the table's overall number, `numberOfSeats`, which indicates the number of available chairs or seats, and `material`, where `material` is an enum with values such as `Wood`, `Plastic`, `Glass`, `Plexiglass`, and `Aluminium`.
7. **Menu**: Models a restaurant menu and contains a `name` and multiple `Course` objects.
8. **Course**: Represents individual items in a menu, with attributes like `price`, `name`, `type`, and `numberOfPieces`. The `type` is an enum with values like `Fried`, `Pizza`, `MainDish`, `Nigiri`, `Dessert`, and `Appetizer`, which indicates the category of the food.