IDS 2023/2024 – 1. part of the project

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1 Task

Hotel

"Navrhněte IS recepce hotelu, který by poskytoval přehled o dostupných pokojích, základní údaje o zákaznících a jejich pobytech v hotelu, jejich požadavcích na služby, placení apod. Systém musí umožnit také rezervaci pokojů."

2 Description of the data model

2.1 ER diagram

The ER diagram contains the following entities:

Room: Includes room information and booking options.

Room-type: The strong entity contains information about the type of room and who it is suitable for.

Person: An entity containing common information about person that can be identified as common to employees and customers.

Customer: It is an extension of "Person".He can create a reservation, pay and order additional services. It contains the necessary unique information about the customer.

Personnel: It inherits attributes from the "Person" entity and contains additional information about the hotel employee.

Reservation: Saves reservation information, date of arrival and departure,total price and number of people.

Payment: Payment for bookings and services ordered

Service: The number of services offered by the hotel that the client can order and pay for

2.2 UseCase diagram

There are several actors in the use case diagram.

Personnel: Responsible for the provision of hotel services

Customer: Can make a reservation, select arrival and departure date, view available rooms, select a room type, order additional services, change reservation details or cancel reservation.

Admin: Manages the administration of the hotel system, ensures that employees perform their duties, communicates with customers, controls reservations in the system and the payment process.

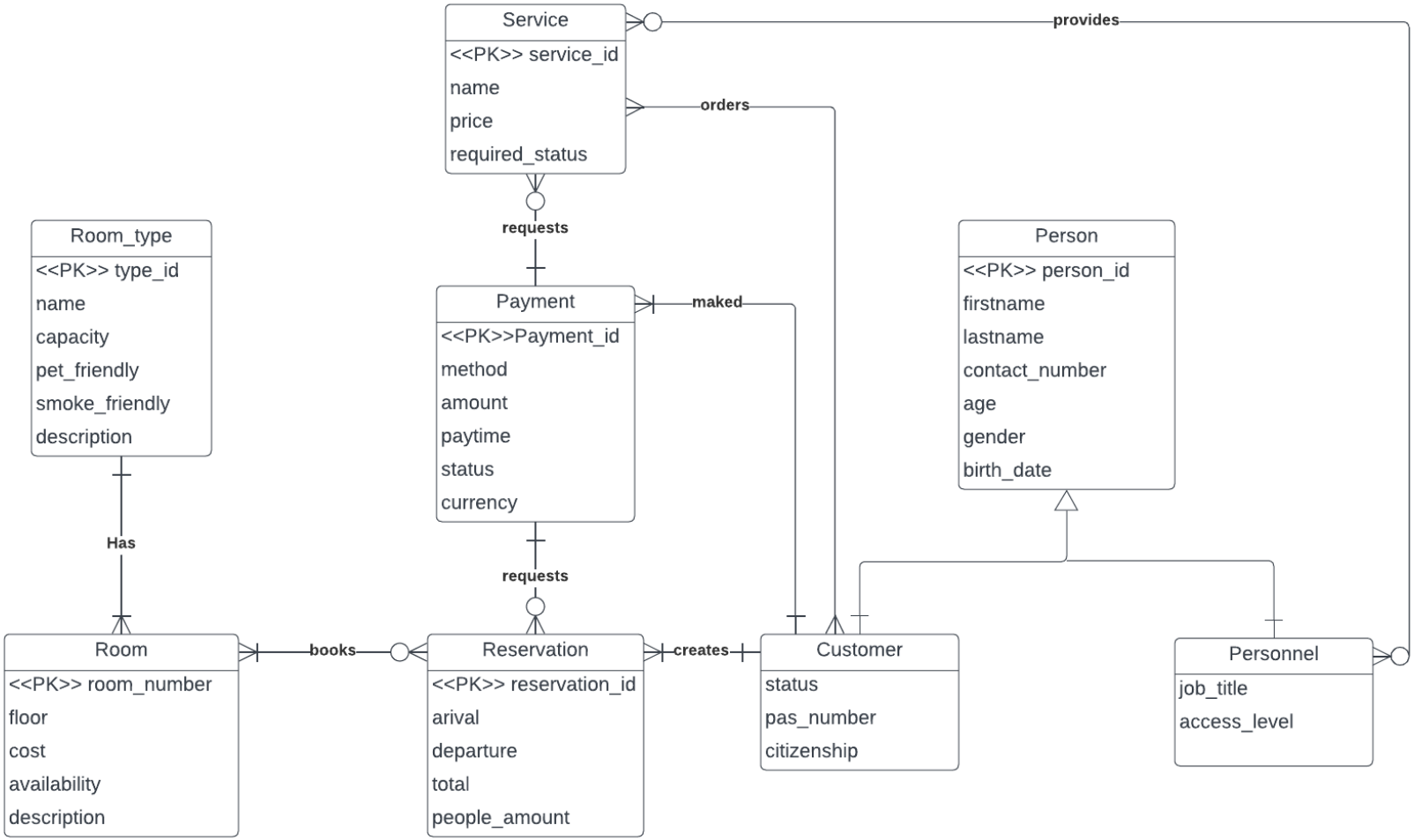

Figure 1: ER diagram

Figure 2: UseCase diagram

Implementation

DROP:

Destroys tables that have already been created, it is carried out at the very beginning so that there would be no collisions.

CREATE:

Creates tables of their primary and foreign keys, as well as auxiliary tables.

INSERTS:

Enters test data into tables.

TRIGGERS:

- The first trigger is triggered before *Insert* or *Update* and checks whether this customer can he order this service based on his status
- The second trigger is executed after *Insert* or *Update*, it marks that the room is reserved when it was added to the reservation.

PROCEDURE:

- The first procedure is responsible for creating a reservation. Records all the data on the Arrival, departure, room, customer and fee tables, as well as checks whether it is possible to book the selected room for this period of time
- The second procedure writes out data on how much the reservation of this client costs, taking into account all additional services. How much did he pay and how much does he owe the hotel.

EXPLAIN PLAN:

Shows the details of a specific team. In our implementation, this is a command that displays data about the client, if he has a Czech number and who has a certain date of arrival, and the number of services ordered by him.
Next comes the addition of indexes to the phone number and date of arrival, which allows you to speed up the search for data in tables, searching not in the entire table.

MATERIALIZED VIEW:

Contains a list of clients and the number of services they ordered. This view can be used to identify the most actively interacting customer with the hotel services.

PRIVILEGES:

Granting rights to the second team member.