KHULNA UNIVERSITY OF ENGINEERING & TECHNOLOGY

Department of Computer Science and Engineering(CSE)

PROJECT ON CSE3110

Course Title: Database Systems Laboratory

Project Name : Telecom Service Management System

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Project Overview

Many information of a telcom service management system can be managed in this project. Information about customers, sim number, sim operator name, details, call cost of certain duration all of these can be managed in this project. Here we can able to see the sim number the user have and the call cost of that particular user and the operator he uses.

Database Structure

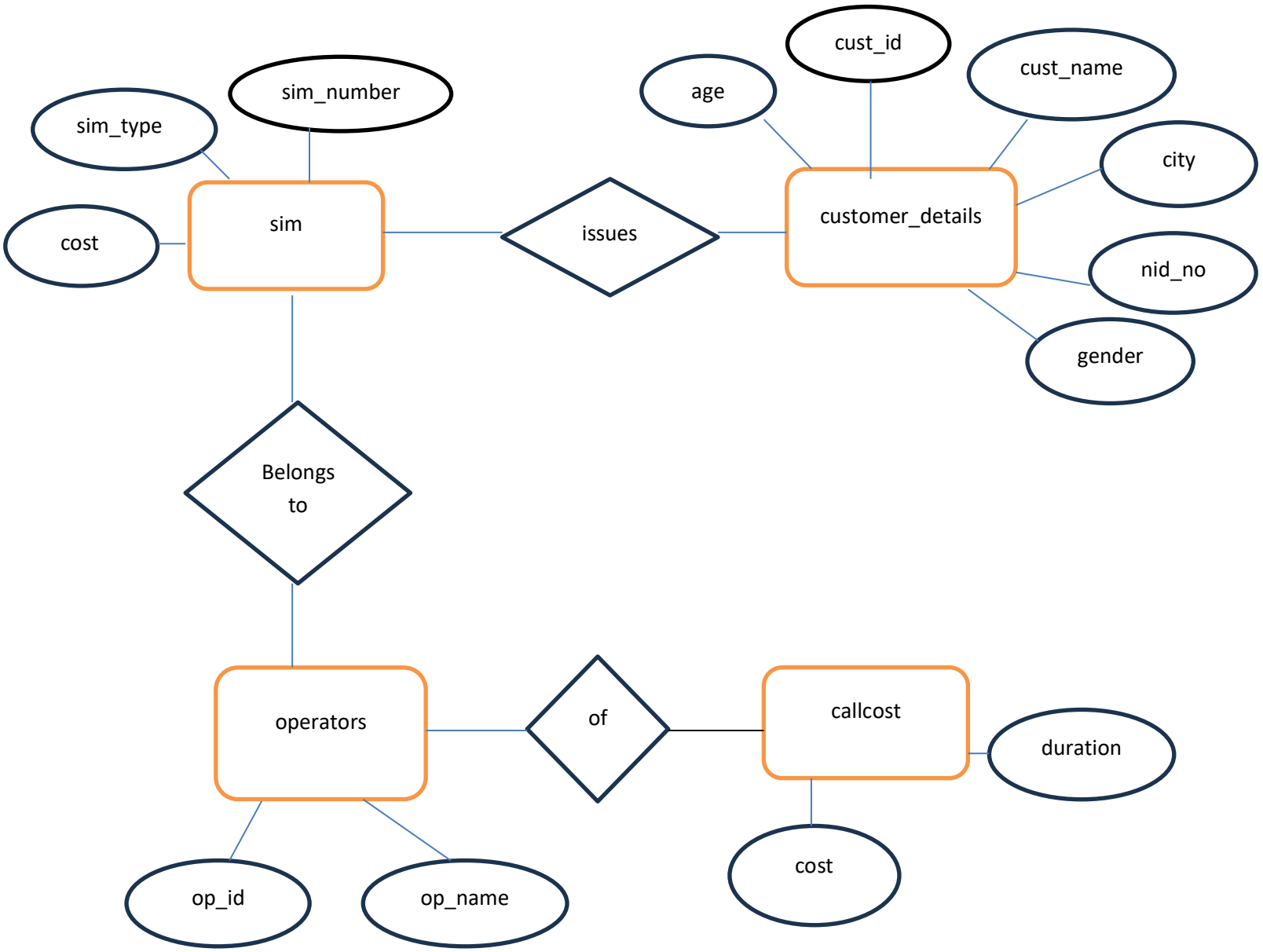
The database consists of four tables and they are customer details table, sim table, call cost table, operators table.

Customer details table have one to many relationship with sim table. Operators table have one to many relationship with sim table. Operators table have one to one relationship with call cost table.

Objective of Database :

Call cost table is used to maintain the detailed records of call charges based on duration facilating dynamic pricing and billing strategies. Customer details table is used to securely store and manage comprehensive details about customers, including identification, demographic information and location. The operators table is helpful to track information about various telecom operators, including their name and the specific call durations they offer, ensuring that call costs are applied correctly and allowing for service comparisons. The sim table is used to administer sim card and track their distribution among customers and operators, including cost associated with each sim type.

ER Diagram:


cust_id
age
cust_name
sim_number
sim_type
city
sim
issues
customer_details
cost
nid_no
gender
Belongs
to
operators
of
callcost
duration
cost
op_id
op_name

Schema Diagram:

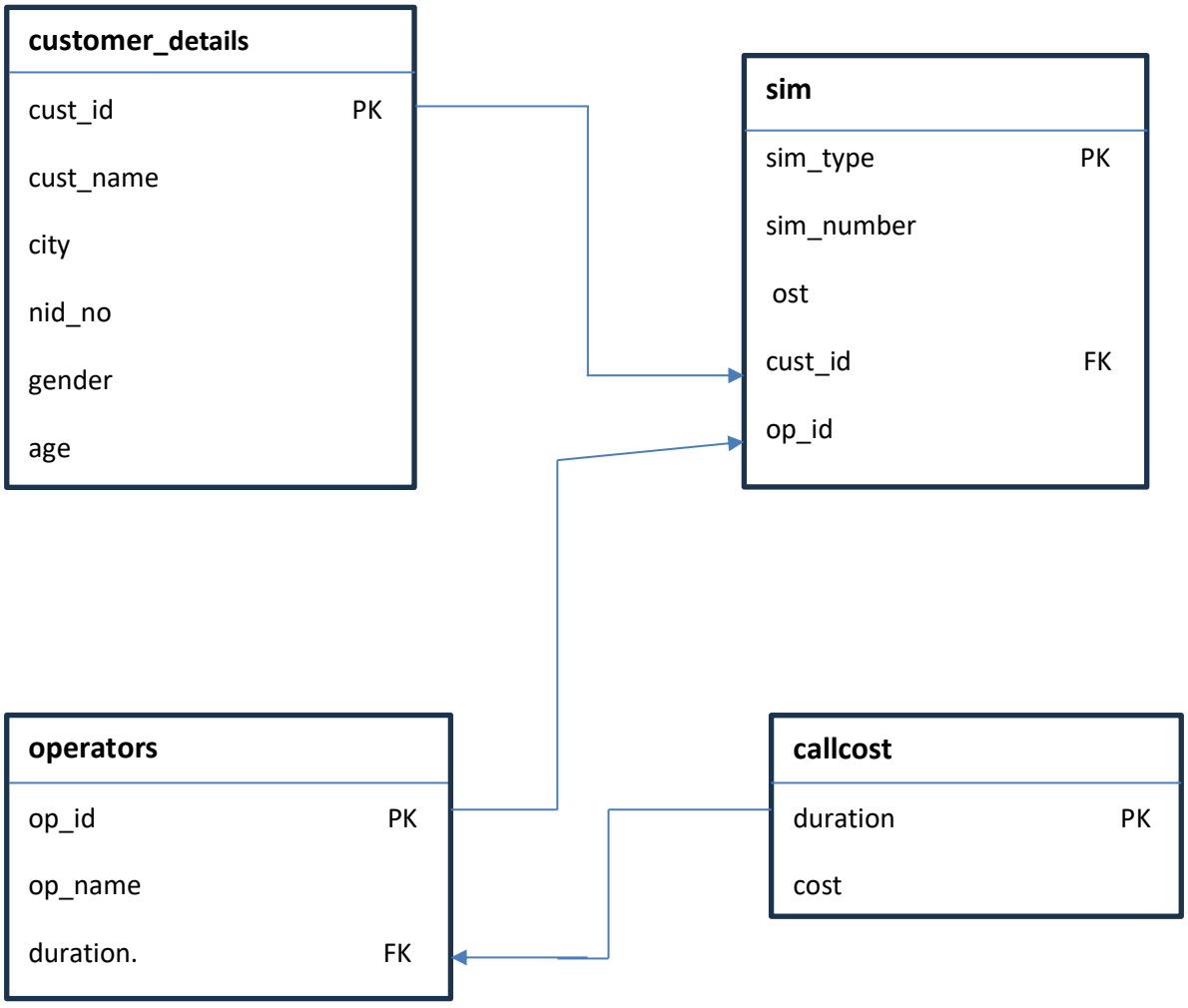


Table Relationships:

```
create table callcost(
    duration number(10) not null,
    cost number(10,5),
    primary key (duration)
);
```

```
create table customer_details(
    cust_id number(10) not null,
    cust_name varchar2(15),
    city varchar2(15),
    nid_no number(20),
    gender varchar2(8),
    age number(10,2),
    primary key (cust_id)
);
```

```
create table operators (
    op_id number(10) not null,
    op_name varchar2(20),
    duration number(10),
    primary key (op_id),
    foreign key (duration) references
    callcost ON DELETE CASCADE );
```

```
create table sim(
    sim_type varchar2(10) not null,
    sim_number number(15),
    cost number(10,5),
    cust_id number(10),
    op_id number(10),
    primary key (sim_type),
    foreign key (cust_id) references
    customer_details ON DELETE CASCADE ,
    foreign key (op_id) references
    operators ON DELETE CASCADE
);
```

Database Design Process

This database project is developed by ORACLE . We developed four new tables and inserted data from file.
We learned several important lessons through the design process. These include:

1) Designing tables is the most important step and must be done early in the project.

2) Building a database and web application from scratch is often easier than revising non-existing database and application – which is why initial design is so important and was stressed throughout the course!

Discussion & Conclusion

The project was a learning experience for us and allowed us to improve upon our SQL skills. From this we learn about database management system, sql query, function procedure, trigger, cursor etc that help us for future database development .We developed a database system for managing telecom service management.

Reference

https://www.w3schools.com/sql/