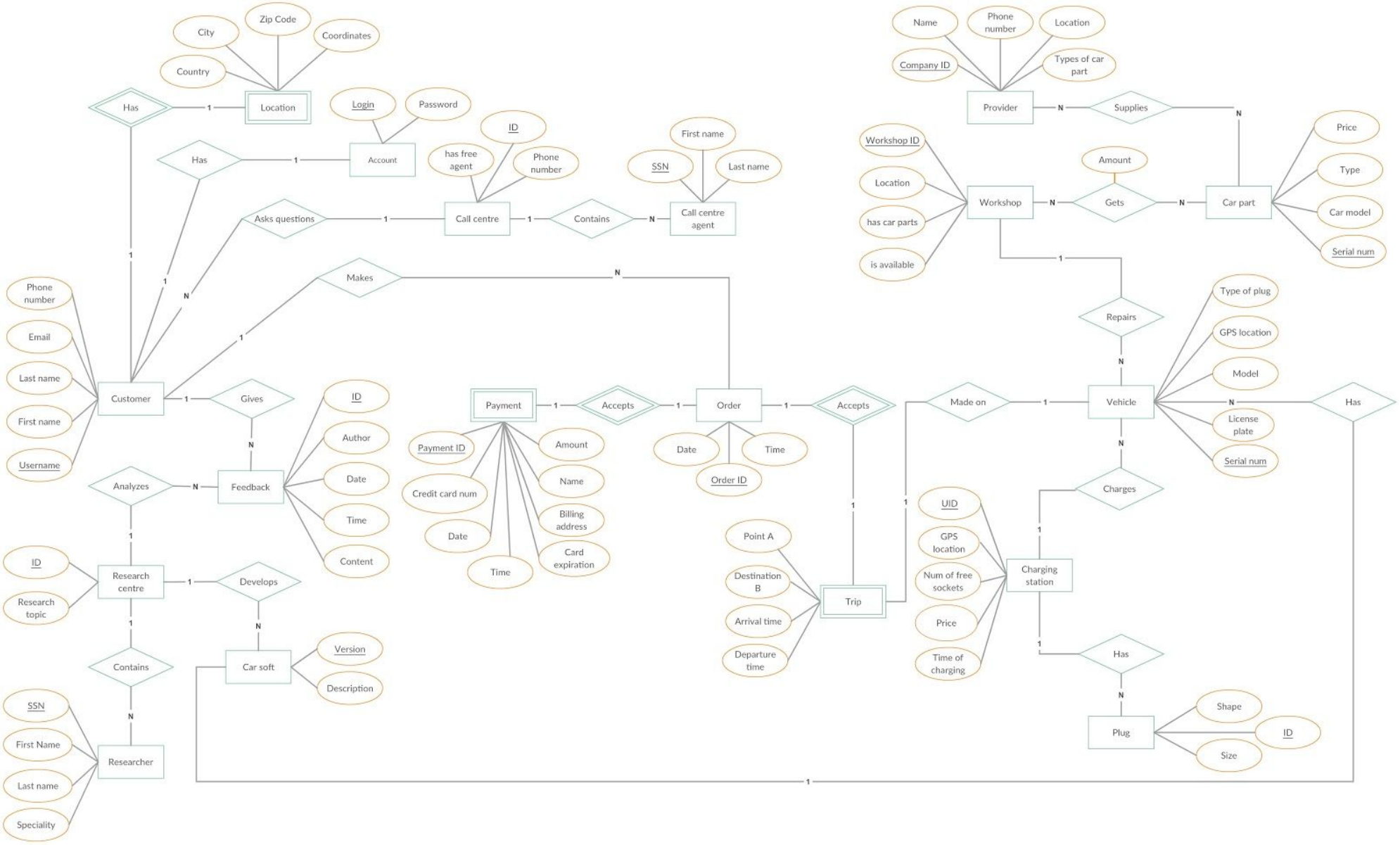
Data Modelling and Databases: Assignment 2

Team:

Irek Nazmiev, Kamilla Kryachkina

B17-05

ER diagram:


Zip Code
City
Coordinates
Country
Location
Has
Login
Password
Account
Has
ID
has free agent
Phone number
First name
SSN
Last name
Asks questions
Call centre
Contains
Call centre agent
Name
Phone number
Location
Company ID
Types of car part
Provider
Supplies
Workshop ID
Location
has car parts
is available
Workshop
Amount
Gets
Car part
Price
Type
Car model
Serial num
Makes
Repairs
Type of plug
GPS location
Model
License plate
Serial num
Has
Phone number
Email
Last name
First name
Username
Customer
Gives
ID
Author
Date
Time
Content
Feedback
Analyzes
Payment
Payment ID
Credit card num
Date
Time
Amount
Name
Billing address
Card expiration
Accepts
Order
Date
Time
Order ID
Accepts
Made on
Vehicle
Charges
UID
GPS location
Num of free sockets
Price
Time of charging
Charging station
Has
Plug
Shape
ID
Size
Point A
Destination B
Arrival time
Departure time
Trip
ID
Research topic
Research centre
Develops
Contains
Researcher
SSN
First Name
Last name
Speciality
Car soft
Version
Description

Description:

- Each **customer** has a unique username, phone number, email, first name and last name;
- Each **customer** has one location, and each **location** (which exists only if customer does) contains information about country, city, zip code, its coordinates;
- Each **customer** has an account, which stores a unique login and password, and each **account** belongs only to one customer;
- Each **customer** can ask **call centre** a question;
- Each **call centre** has a unique id, phone number, information about the availability of free call agents, and also contains **call centre agents** that have a unique SSD number, first name and last name;
- Several **customers** can ask questions in the one call centre, and a call centre has several **call centre agents**.
- Each **customer** can give any amount of **feedback** reports that contain a unique id, information about the author, date, time and the content of a report;
- All **feedback** reports are analysed by the **research centre** which has a unique id and research topic;
- Each **research centre** contains **researchers** that have a unique SSN number, first name, last name and speciality;
- **Research centre** develops some **car soft** which has a unique version and description;
- The **car soft** is used in **vehicles**;
- A **vehicle** can have only one version of **car soft** but the same version can be used on different **vehicles**;
- Each **customer** can make **orders** that contain a unique id and information about the date and time of order;
- Each **order** has to be accepted by **payment** (which exists only if order does) which contains a unique id, information about the credit card number, date and time of payment, amount, payer's name, billing address and card expiration date;
- When **order** is completely made, it accepts the **trip** (which exists only if order does) which has the information about the initial and destination points, arrival and departure time;
- Each **trip** is made on one **vehicle** which has a unique serial number, model, GPS location, license plate, type of suitable plug;
- All **vehicles** can be charged in a **charging station** which has a unique id, location, price and time of charging, information about the number of free sockets and some amount of **sockets** that has a unique id, shape and size;
- All **vehicles** can be repaired in a **workshop** which has a unique id, location, information about the availability of car parts and itself;

- All **workshops** receive some amount of car parts that have a unique serial number, price, type and the name of suitable model of car;
- All **car parts** are supplied by **providers** that have a unique company id, name, phone number, location and information about the types of car parts;

Explanations:

- Entity **location** is weak because it cannot exist without the customer;
- Entity **trip** is weak because it cannot be carried out without completing the order;
- Entity **payment** is weak because it cannot be made without creating the order;
- The relation “Gets” between **workshop** and **car part** has an attribute “Amount”, because we need to know the amount of car parts supplied by the provider and amount can be got only if the workshop **gets** the car parts;