

Companie ride-sharing

Scenariu

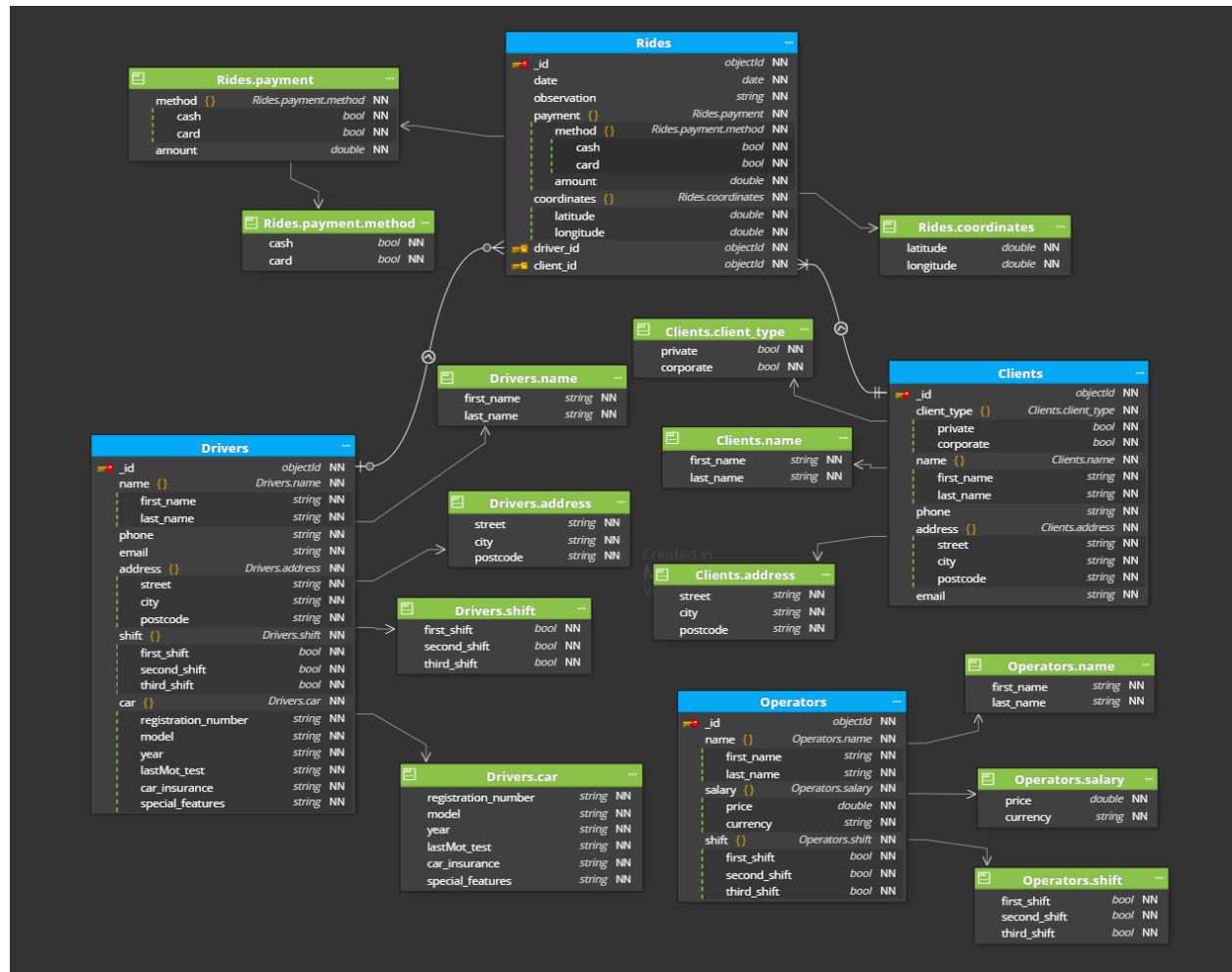
Zoomer este o companie care presteaza servicii de ride-sharing in municipiul Cluj-Napoca. Principiul de functionare al companiei este urmatorul: Prin intermediul unei aplicatii mobile, clientul are posibilitatea de a rezerva o cursa pentru a fi transportat din punctul A in punctul B. O data ce o rezervare a fost initiata, aceasta este preluata de un operator. Acesta asociaza cursa unui driver din apropiere, in asa fel incat sa fie rapid, eficient si echitabil.

Inca de anul trecut esti angajat in aceasta companie pe postul de Data Base Manager, proiectand si intretinand o baza de date Oracle. Domeniul de ride-sharing se afla in crestere continua, si in ciuda marilor competitori de pe piata (Bolt, Uber, FreeNow, etc.), Zoomer a reusit sa se mentina pe piata.

Directorul are planuri mari pentru viitorul companiei, iar anul acesta au loc demersuri importante in acest sens. El s-a documentat despre NoSQL, tehnologie folosita si preferata de competitorii directi ai companiei. Pentru a tine pasul, acesta iti solicita sa migrezi baza de date in format NoSQL, folosind MongoDB. Aceasta baza contine informatii referitoare la:

- Soferi - incluzand detalii cu privire la resedinta, date de contact, date personale
- Masini - detalii cu privire la numarul de inmatriculare, anul fabricatiei, data ultimei inspectii tehnice
- Operatori - acestia sunt angajati cu contract de munca ai companiei, trebuind stocate si detalii cu privire la salarizare
- Curse - detalii cu privire la rezervarile de curse
- Plati - modalitati de plata, suma
- Ture - atat soferii, cat si operatorii, lucreaza in ture pentru a putea asigura eficienta companiei de-a lungul zilei
- Clienti - tipul de client, date cu caracter personal, detalii pentru cursele recurente

Diagrama ERD



Scripts

Creare baza de date si colectii:

```
use zoomer
db.createCollection("Clients" ,autoIndexId = true)
db.createCollection("Drivers" ,autoIndexId = true)
db.createCollection("Operators" ,autoIndexId = true)
db.createCollection("Rides" ,autoIndexId = true)
```

Popularea colectiilor:

```
db.Operators.insertOne(
{
  "name": {
    "first_name": "Aurel",
    "last_name": "Ros"
  },
  "salary": {
    "price": 2900,
    "currency": "RON"
  },
  "shift":
  {
    "first_shift":false,
    "second_shift":true,
    "third_shift": false
  },
});
```

```
db.Operators.insertOne(
{
  "name": {
    "first_name": "Maria",
    "last_name": "Ceteras"
  },
  "salary": {
    "price": 3500,
    "currency": "RON"
  },
  "shift":
  {
    "first_shift":true,
    "second_shift":false,
    "third_shift": false
  },
});
```

```
db.Operators.insertOne(
{
  "name": {
    "first_name": "Gavin",
    "last_name": "Cortez"
```

```
    },
    "salary": {
      "price": 3000,
      "currency": "RON"
    },
    "shift":
    {
      "first_shift":false,
      "second_shift":true,
      "third_shift": false
    },
  });

db.Operators.insertOne(
{
  "name": {
    "first_name": "Norbert",
    "last_name": "Nagy"
  },
  "salary": {
    "price": 2300,
    "currency": "RON"
  },
  "shift":
  {
    "first_shift":false,
    "second_shift":false,
    "third_shift": true
  },
});

db.Operators.insertOne(
{
  "name": {
    "first_name": "Vasile",
    "last_name": "Ciolacu"
  },
  "salary": {
    "price": 2500,
    "currency": "RON"
  },
  "shift":
  {
```

```

        "first_shift":true,
        "second_shift":false,
        "third_shift": false
    },
});

db.Operators.insertOne(
{
    "name": {
        "first_name": "Gabriel",
        "last_name": "Cozma"
    },
    "salary": {
        "price": 2600,
        "currency": "RON"
    },
    "shift":
    {
        "first_shift":false,
        "second_shift":true,
        "third_shift": false
    },
});

/*****/

db.Drivers.insertOne(
{
    "name":
    {
        "first_name":"Lorand",
        "last_name":"Kerekes"
    },
    "phone":"0788455679",
    "email":"lkerekes@zoomer.com",
    "address":
    {
        "street":"Liviu Rebreanu 4",
        "city":"Gilau",
        "postcode":"460101"
    },
    "shift":
    {

```

```

        "first_shift":true,
        "second_shift":false,
        "third_shift": false
    },
    "car":
    {
        "registration_number": "CJ38ESP",
        "model": "Honda",
        "year": "2012",
        "lastMot_test": "2017",
        "car_insurance": "CAR1234A",
        "special_features": "Camera marsalier",
    }
    });

db.Drivers.insertOne(
{
    "name":
    {
        "first_name":"Cezar",
        "last_name":"Manasturean"
    },
    "phone":"0771589623",
    "email":"cmanasturean@zoomer.com",
    "address":
    {
        "street":"Aleea Plopilor 33",
        "city":"Cluj-Napoca",
        "postcode":"400483"
    },
    "shift":
    {
        "first_shift":true,
        "second_shift":true,
        "third_shift": false
    },
    "car":
    {
        "registration_number": "CJ21KGB",
        "model": "Ford",
        "year": "2011",
        "lastMot_test": "2017",
        "car_insurance": "CAR3454A",
    }

```

```

        "special_features": "",
    }
});

db.Drivers.insertOne(
{
    "name":
    {
        "first_name": "Laura",
        "last_name": "Codrean"
    },
    "phone": "0776436767",
    "email": "lcodrean@zoomer.com",
    "address":
    {
        "street": "Mircea cel Batran 5",
        "city": "Apahida",
        "postcode": "498105"
    },
    "shift":
    {
        "first_shift": false,
        "second_shift": false,
        "third_shift": true
    },
    "car":
    {
        "registration_number": "CJ22KGB",
        "model": "Volkswagen",
        "year": "2009",
        "lastMot_test": "2017",
        "car_insurance": "CAR1234A",
        "special_features": "",
    }
});

db.Drivers.insertOne(
{
    "name":
    {
        "first_name": "Alexandru",
        "last_name": "Gabor"
    },
    },

```

```
    "phone": "0755462879",
    "email": "agabor@zoomer.com",
    "address":
    {
        "street": "Erkel Ferenc 21",
        "city": "Cluj-Napoca",
        "postcode": "400495"
    },
    "shift":
    {
        "first_shift": false,
        "second_shift": true,
        "third_shift": false
    },
    "car":
    {
        "registration_number": "CJ66CSC",
        "model": "Volkswagen",
        "year": "2012",
        "lastMot_test": "2016",
        "car_insurance": "CAR1234A",
        "special_features": "Geamuri fumurii anti-glont",
    }
});
```

```
db.Drivers.insertOne(
{
    "name":
    {
        "first_name": "Aurel",
        "last_name": "Vlaicu"
    },
    "phone": "0775462879",
    "email": "avlaicu@zoomer.com",
    "address":
    {
        "street": "Horea 55C",
        "city": "Cluj-Napoca",
        "postcode": "400100"
    },
    "shift":
    {
        "first_shift": false,
```



```
    "second_shift":true,
    "third_shift": false
  },
  "car":
  {
    "registration_number": "CJ98ASC",
    "model": "Toyota",
    "year": "2012",
    "lastMot_test": "2017",
    "car_insurance": "CAR3454A",
    "special_features": ""
  }
});
```

```
db.Drivers.insertOne(
{
  "name":
  {
    "first_name":"Iulia",
    "last_name":"Puscas"
  },
  "phone":"0769420911",
  "email":"ipuscasu@zoomer.com",
  "address":
  {
    "street":"Principala 163",
    "city":"Bontida",
    "postcode":"430005"
  },
  "shift":
  {
    "first_shift":true,
    "second_shift":false,
    "third_shift": false
  },
  "car":
  {
    "registration_number": "CJ04IMC",
    "model": "Renault",
    "year": "2010",
    "lastMot_test": "2016",
    "car_insurance": "CAR1234A",
    "special_features": "CASCO",
```

```
    }  
});
```

```
/*  
*****  
*/
```

```
db.Clients.insertOne(  
  {  
    "client_type":  
    {  
      "private": false,  
      "corporate": true  
    },  
    "name": "NTT Data",  
    "phone": "0747456665",  
    "address":  
    {  
      "street": "Constanta 19",  
      "city": "Cluj-Napoca",  
      "postcode": "400405"  
    },  
    "email": "contact@nttdata.com",  
  })
```

```
db.Clients.insertOne({  
  "client_type":  
  {  
    "private": true,  
    "corporate": false  
  },  
  "name":  
  {  
    "first_name": "Catalin",  
    "last_name": "Popa"  
  },  
  "phone": "0777568901",  
  "address":  
  {  
    "street": "Calea Baciului 51B",  
    "city": "Cluj-Napoca",  
    "postcode": "400415"  
  },  
  "email": "popacata@yahoo.com",  
})
```

```
}  
)  
  
db.Clients.insertOne({  
  "client_type":  
  {  
    "private": true,  
    "corporate": false  
  },  
  "name":  
  {  
    "first_name": "Radu",  
    "last_name": "Piersic"  
  },  
  "phone": "0731368901",  
  "address":  
  {  
    "street": "Observatorului 1",  
    "city": "Cluj-Napoca",  
    "postcode": "400401"  
  },  
  "email": "raducul@yahoo.com",  
})  
  
db.Clients.insertOne({  
  "client_type":  
  {  
    "private": true,  
    "corporate": false  
  },  
  "name":  
  {  
    "first_name": "Amalia",  
    "last_name": "Pop"  
  },  
  "phone": "0791168901",  
  "address":  
  {  
    "street": "Calea Turzii 103",  
    "city": "Cluj-Napoca",  
    "postcode": "400415"  
  },  
  "email": "amaama91@gmail.com",  
})
```

```
}
)
db.Clients.insertOne({
  "client_type":
  {
    "private": true,
    "corporate": false
  },
  "name":
  {
    "first_name": "Alina",
    "last_name": "Bucur"
  },
  "phone": "0777673901",
  "address":
  {
    "street": "Viilor 52B",
    "city": "Cluj-Napoca",
    "postcode": "400415"
  },
  "email": "alinabucur@gmail.com",
}
)

db.Clients.insertOne({
  "client_type":
  {
    "private": true,
    "corporate": false
  },
  "name":
  {
    "first_name": "Mihai",
    "last_name": "Eminovici"
  },
  "phone": "0777568901",
  "address":
  {
    "street": "Mihai Eminescu 51",
    "city": "Apahida",
    "postcode": "410199"
  },
  "email": "misuemi@yahoo.com",
})
```

```

}
)
db.Clients.insertOne({
  "client_type":
  {
    "private": true,
    "corporate": false
  },
  "name":
  {
    "first_name": "Miriam",
    "last_name": "Costea"
  },
  "phone": "0777931765",
  "address":
  {
    "street": "Calea Baciului 1",
    "city": "Cluj-Napoca",
    "postcode": "400415"
  },
  "email": "mcostea20@outlook.com",
});

```

Exemplu populare tabela "Rides"

Acest tip de formular se genereaza diferit, intrucat colectia nu se populeaza prin completarea unui formular, inasa se genereaza o instanta noua de fiecare data cand are loc o cursa. Acest lucru se face prin intermediul aplicatiei mobile, inasa aceasta este o alternativa cu sintaxa exclusiv MONGO.

```

travelDate = new ISODate()
driver = db.Drivers.findOne({"email": "ipuscasu@zoomer.com"})
client = db.Clients.findOne({"email": "mcostea20@outlook.com"})

db.Rides.insertOne(
{
  "date": travelDate,
  "observation": "",
  "payment":
  {
    "method":

```

```

    {
        "cash":true,
        "card":false,

    },
    "amount": 50,
},
"coordinates":
{
    "latitude": 15.47878,
    "longitude": 75.47010
},
"driver_id": driver._id,
"client_id" : client._id
})

```

Stergere:

Unul din clientii Zoomer a solicitat stergerea datelor cu caracter personal. In conformitate cu legislatia europeana, cat si cea nationala referitoare la prelucrarea acestor date, societatea Zoomer este obligata sa renunte la posesia acestora.

Clientul a solicitat acest lucru de pe adresa de e-mail aferenta profilului de utilizator, prin urmare stergerea se face astfel:

```

client = db.Clients.findOne({"email": "mcostea20@outlook.com"})
db.getCollection("Clients").deleteOne( {"_id": client._id});

```

Actualizare:

Unul din angajatii Zoomer din departamentul de operatori a implinit 3 ani de vechime in companie. Conform politicii interne, salariul acestuia trebuie marit. Numele acestuia este Ciolacu Vasile

```

db.Operators.updateOne(
  {"name.first_name": "Vasile", "name.last_name": "Ciolacu"},
  {
    $set: {"salary.price": 2900}
  }
);

```

Inserare documente structura diferita:

Pentru a monitoriza mai bine performanta serviciilor, fondatorul companiei doreste introducerea unui sistem de recenzii pentru calatorie, aceste date putand ulterior fi analizate si utilizate pentru imbunatatirea experientei utilizatorilor. Un utilizator poate acorda unei curse un calificativ de la 1 la 5 stele, avand si posibilitatea sa ataseze un comentariu.

```
db.Rides.insertOne(
{
  "date": ISODate("2022-01-01T18:50:00"),
  "observation": "Bagaje mari",
  "payment":
  {
    "method":
    {
      "cash":false,
      "card":true,
    },
    "amount": 22,
  },
  "coordinates":
  {
    "latitude": 110.75930,
    "longitude": 94.41510
  },
  "driver_id": ObjectId("61d2ed34b1e1bc4b4d0279b1"),
  "client_id": ObjectId("61d2ed96b1e1bc4b4d0279b6"),

  "review":
  {
    "comments": "a fost ok",
    "grade": 4
  }
})

db.Rides.insertOne(
{
  "date": ISODate("2022-01-01T11:10:00"),
  "observation": "Scaun cu rotile",
  "payment":
  {
    "method":
```

```

    {
      "cash":false,
      "card":true,

    },
    "amount": 10,
  },
  "coordinates":
  {
    "latitude": 10.99930,
    "longitude": 120.48900
  },
  "driver_id": ObjectId("61d2ec85b1e1bc4b4d0279a6"),
  "client_id": ObjectId("61d2ec8ab1e1bc4b4d0279ab"),

  "review":
  {
    "comments": "mi-a placut muzica",
    "grade": 5
  }
})

```

Index simplu:

Pe masura ce aplicatia creste in popularitate pe platformele care o distribuie, este nevoie de angazati noi, iar baza de date se mareste si ea, timpul de executie al unui query crescand. Multe dintre queri-urile care se executa frecvent sunt legate de grila de salarizare, asa ca, pentru a optimiza timpul de cautare, s-a decis crearea unui index crescator vizand salariul.

```
db.Operators.createIndex( { "salary.price": 1 } )
```

Index compus:

Directorul doresta sa introduca o noua categorie “DELUXE” de calatorie pentru clientii mai instariti. Accesand acest tip de serviciu, clientul beneficiaza de masinile cu cele mai noi dotari. Acesti clienti de obicei au timpul mai limitat, astfel incat operatorii trebuie sa fie optimi in gasirea unui sofer. Pentru a-i ajuta sa salveze timp, trebuie creat un index care sa ordoneze descrescator masinile in functie de disponibilitate (in tura respectiva) cat si descrescator in functie de anul de fabricatie al masinii.


```
db.Drivers.createIndex( { "shift.first_shift": 1, "car.year": -1 } )
```

Interogari:

Este tura de dimineata. Trebuie sa gasim soferii disponibili in acest interval orar

```
db.getCollection('Drivers').find({"shift.first_shift":true})
```

```
[
  {
    _id: ObjectId("61d2ed2fb1e1bc4b4d0279ad"),
    name: { first_name: 'Lorand', last_name: 'Kerekes' },
    phone: '0788455679',
    email: 'lkerekes@zoomer.com',
    address: { street: 'Liviu Rebreanu 4', city: 'Gilau', postcode: '460101' },
    shift: { first_shift: true, second_shift: false, third_shift: false },
    car: {
      registration_number: 'CJ38ESP',
      model: 'Honda',
      year: '2012',
      lastMot_test: '2017',
      car_insurance: 'CAR1234A',
      special_features: 'Camera marsalier'
    }
  },
  {
    _id: ObjectId("61d2ed35b1e1bc4b4d0279b2"),
    name: { first_name: 'Iulia', last_name: 'Puscas' },
    phone: '0769420911',
    email: 'ipuscasu@zoomer.com',
    address: { street: 'Principala 163', city: 'Bontida', postcode: '430005' },
    shift: { first_shift: true, second_shift: false, third_shift: false },
    car: {
      registration_number: 'CJ04IMC',
      model: 'Renault',
      year: '2010',
      lastMot_test: '2016',
      car_insurance: 'CAR1234A',
      special_features: 'CASCO'
    }
  }
]
```

Este tura de dupa-amiaza. Trebuie sa gasim soferii disponibili in acest interval orar

```
db.getCollection('Drivers').find({"shift.second_shift":true})
```

```
[
  {
    _id: ObjectId("61d2ed30b1e1bc4b4d0279ae"),
    name: { first_name: 'Cezar', last_name: 'Manasturean' },
    phone: '0771589623',
    email: 'cmanasturean@zoomer.com',
    address: {
      street: 'Aleea Plopilor 33',
      city: 'Cluj-Napoca',
      postcode: '400483'
    },
    shift: { first_shift: false, second_shift: true, third_shift: false },
    car: {
      registration_number: 'CJ21KGB',
      model: 'Ford',

```

```

        year: '2011',
        lastMot_test: '2017',
        car_insurance: 'CAR3454A',
        special_features: ''
    }
},
{
    _id: ObjectId("61d2ed33b1e1bc4b4d0279b0"),
    name: { first_name: 'Alexandru', last_name: 'Gabor' },
    phone: '0755462879',
    email: 'agabor@zoomer.com',
    address: {
        street: 'Erkel Ferenc 21',
        city: 'Cluj-Napoca',
        postcode: '400495'
    },
    shift: { first_shift: false, second_shift: true, third_shift: false },
    car: {
        registration_number: 'CJ66CSC',
        model: 'Volkswagen',
        year: '2012',
        lastMot_test: '2016',
        car_insurance: 'CAR1234A',
        special_features: 'Geamuri fumurii anti-glont'
    }
},
{
    _id: ObjectId("61d2ed34b1e1bc4b4d0279b1"),
    name: { first_name: 'Aurel', last_name: 'Vlaicu' },
    phone: '0775462879',
    email: 'avlaicu@zoomer.com',
    address: { street: 'Horea 55C', city: 'Cluj-Napoca', postcode: '400100' },
    shift: { first_shift: false, second_shift: true, third_shift: false },
    car: {
        registration_number: 'CJ98ASC',
        model: 'Toyota',
        year: '2012',
        lastMot_test: '2017',
        car_insurance: 'CAR3454A',
        special_features: ''
    }
}
]

```

Este tura de noapte. Trebuie sa gasim soferii disponibili in acest interval orar

```
db.getCollection('Drivers').find({"shift.third_shift":true})
```

```

[
  {
    _id: ObjectId("61d2ed32b1e1bc4b4d0279af"),
    name: { first_name: 'Laura', last_name: 'Codrean' },
    phone: '0776436767',
    email: 'lcodrean@zoomer.com',
    address: {
        street: 'Mircea cel Batran 5',
        city: 'Apahida',
        postcode: '498105'
    },
    shift: { first_shift: false, second_shift: false, third_shift: true },
    car: {
        registration_number: 'CJ22KGB',
        model: 'Volkswagen',
        year: '2009',
        lastMot_test: '2017',
        car_insurance: 'CAR1234A',
        special_features: ''
    }
}
]

```

S-a produs o eroare in contabilitate. Trebuie afisati toti angajatii cu un salariu mai mare de 2500 RON

```
db.getCollection('Operators').find({"salary.price": {$gte:2500}})
```

```
[
  {
    _id: ObjectId("61d2ec8ab1e1bc4b4d0279ab"),
    name: { first_name: 'Gabriel', last_name: 'Cozma' },
    salary: { price: 2600, currency: 'RON' },
    shift: { first_shift: false, second_shift: true, third_shift: false }
  },
  {
    _id: ObjectId("61d2ec85b1e1bc4b4d0279a6"),
    name: { first_name: 'Aurel', last_name: 'Ros' },
    salary: { price: 2900, currency: 'RON' },
    shift: { first_shift: false, second_shift: true, third_shift: false }
  },
  {
    _id: ObjectId("61d2ec89b1e1bc4b4d0279aa"),
    name: { first_name: 'Vasile', last_name: 'Ciolacu' },
    salary: { price: 2900, currency: 'RON' },
    shift: { first_shift: true, second_shift: false, third_shift: false }
  },
  {
    _id: ObjectId("61d2ec87b1e1bc4b4d0279a8"),
    name: { first_name: 'Gavin', last_name: 'Cortez' },
    salary: { price: 3000, currency: 'RON' },
    shift: { first_shift: false, second_shift: true, third_shift: false }
  },
  {
    _id: ObjectId("61d2ec86b1e1bc4b4d0279a7"),
    name: { first_name: 'Maria', last_name: 'Ceteras' },
    salary: { price: 3500, currency: 'RON' },
    shift: { first_shift: true, second_shift: false, third_shift: false }
  }
]
```

Pentru identificarea unei nereguli, trebuie verificate toate cursele cu plata numerar

```
db.getCollection('Rides').find({"payment.method.cash": true})
```

```
[
  {
    _id: ObjectId("61d2ee69b1e1bc4b4d0279bc"),
    date: ISODate("2022-01-03T12:39:02.567Z"),
    observation: '',
    payment: { method: { cash: true, card: false }, amount: 50 },
    coordinates: { latitude: 15.47878, longitude: 75.4701 },
    driver_id: ObjectId("61d2ed35b1e1bc4b4d0279b2"),
    client_id: ObjectId("61d2ed9bb1e1bc4b4d0279ba")
  }
]
```

Pentru optimizarea turelor, este necesara listarea soferilor care nu au domiciliul de resedinta in Cluj-Napoca

```
db.getCollection('Drivers').find({"address.city":{$ne:"Cluj-Napoca"}})
```

```
[
  {
```

```

    _id: ObjectId("61d2ed2fb1e1bc4b4d0279ad"),
    name: { first_name: 'Lorand', last_name: 'Kerekes'
  },e:"Cluj-Napoca"}})db.getCollection('Drivers').find({"adress.city":{"$ne:"Cluj-Napoca"}})
  phone: '0788455679',
  email: 'lkerekes@zoomer.com',
  address: { street: 'Liviu Rebreanu 4', city: 'Gilau', postcode: '460101' },
  shift: { first_shift: true, second_shift: false, third_shift: false },
  car: {
    registration_number: 'CJ38ESP',
    model: 'Honda',
    year: '2012',
    lastMot_test: '2017',
    car_insurance: 'CAR1234A',
    special_features: 'Camera marsalien'
  }
},
{
  _id: ObjectId("61d2ed32b1e1bc4b4d0279af"),
  name: { first_name: 'Laura', last_name: 'Codrean' },
  phone: '0776436767',
  email: 'lcodrean@zoomer.com',
  address: {
    street: 'Mircea cel Batran 5',
    city: 'Apahida',
    postcode: '498105'
  },
  shift: { first_shift: false, second_shift: false, third_shift: true },
  car: {
    registration_number: 'CJ22KGB',
    model: 'Volkswagen',
    year: '2009',
    lastMot_test: '2017',
    car_insurance: 'CAR1234A',
    special_features: ''
  }
},
{
  _id: ObjectId("61d2ed35b1e1bc4b4d0279b2"),
  name: { first_name: 'Iulia', last_name: 'Puscas' },
  phone: '0769420911',
  email: 'ipuscasu@zoomer.com',
  address: { street: 'Principala 163', city: 'Bontida', postcode: '430005' },
  shift: { first_shift: true, second_shift: false, third_shift: false },
  car: {
    registration_number: 'CJ04IMC',
    model: 'Renault',
    year: '2010',
    lastMot_test: '2016',
    car_insurance: 'CAR1234A',
    special_features: 'CASCO'
  }
}
]

```

S-a modificat politica pentru prestarea de servicii catre alte firme. Trebuie identificati toti clientii care figureaza ca societati pentru a le transmite prin email noii termeni si conditii

```
db.getCollection('Clients').find({"client_type.corporate":true})
```

```

[
  {
    _id: ObjectId("61d2ed94b1e1bc4b4d0279b4"),
    client_type: { private: false, corporate: true },
    name: 'NTT Data',
    phone: '0747456665',
    address: { street: 'Constanta 19', city: 'Cluj-Napoca', postcode: '400405' },
    email: 'contact@nttdata.com'
  }
]

```

Departamentul de marketing a lansat o noua campanie de re-targetare a clientilor. Fiecare client care a efectuat o cursa mai scumpa de 10 lei, primeste un cupon de 10% reducere la cursa viitoare.

```
db.getCollection('Rides').find({"payment.amount": {$gt:10}})
```

```
[
  {
    _id: ObjectId("61d2ee69b1e1bc4b4d0279bc"),
    date: ISODate("2022-01-03T12:39:02.567Z"),
    observation: '',
    payment: { method: { cash: true, card: false }, amount: 50 },
    coordinates: { latitude: 15.47878, longitude: 75.4701 },
    driver_id: ObjectId("61d2ed35b1e1bc4b4d0279b2"),
    client_id: ObjectId("61d2ed9bb1e1bc4b4d0279ba")
  },
  {
    _id: ObjectId("61d30e7eb1e1bc4b4d0279c1"),
    date: ISODate("2022-01-03T12:39:02.567Z"),
    observation: 'Bagaje mari',
    payment: { method: { cash: false, card: true }, amount: 22 },
    coordinates: { latitude: 110.7593, longitude: 94.4151 },
    driver_id: ObjectId("61d2ed34b1e1bc4b4d0279b1"),
    client_id: ObjectId("61d2ed96b1e1bc4b4d0279b6"),
    review: { comments: 'a fost ok', grade: 4 }
  }
]
```

S-a observat ca Gmail catalogheaza mesajele primite de la Zoomer drept spam. Clientii care utilizeaza Gmail trebuie notificati in aplicatie legat de acest lucru

```
db.getCollection('Clients').find({"email": {$regex: "@gmail.com"}})
```

```
[
  {
    _id: ObjectId("61d2ed98b1e1bc4b4d0279b7"),
    client_type: { private: true, corporate: false },
    name: { first_name: 'Amalia', last_name: 'Pop' },
    phone: '0791168901',
    address: {
      street: 'Calea Turzii 103',
      city: 'Cluj-Napoca',
      postcode: '400415'
    },
    email: 'amaama91@gmail.com'
  },
  {
    _id: ObjectId("61d2ed99b1e1bc4b4d0279b8"),
    client_type: { private: true, corporate: false },
    name: { first_name: 'Alina', last_name: 'Bucur' },
    phone: '0777673901',
    address: { street: 'Viilor 52B', city: 'Cluj-Napoca', postcode: '400415' },
    email: 'alinabucur@gmail.com'
  }
]
```