South East Technological University

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Ollscoil Teicneolaíochta an Oirdheiscirt

Fleet Management Project

Design Document

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User Interface

As there are four different sets of users (Driver, Daly Admin, Fleet, Garage) there will need to be four different sets of user interfaces. There is only one page that will be universal to all, the login page. Even then it will need to be accessible on desktop and mobile devices.

Driver Interface
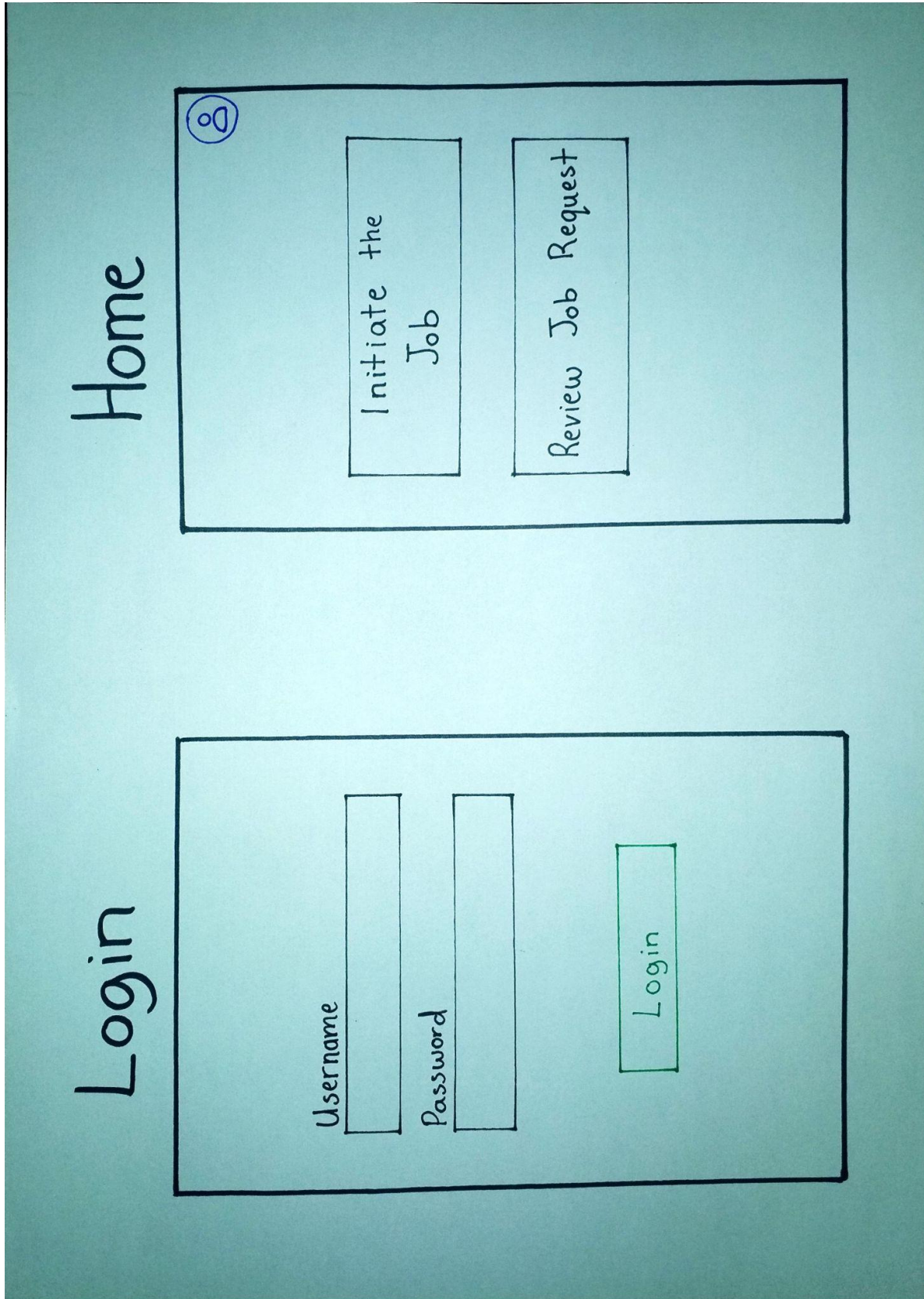
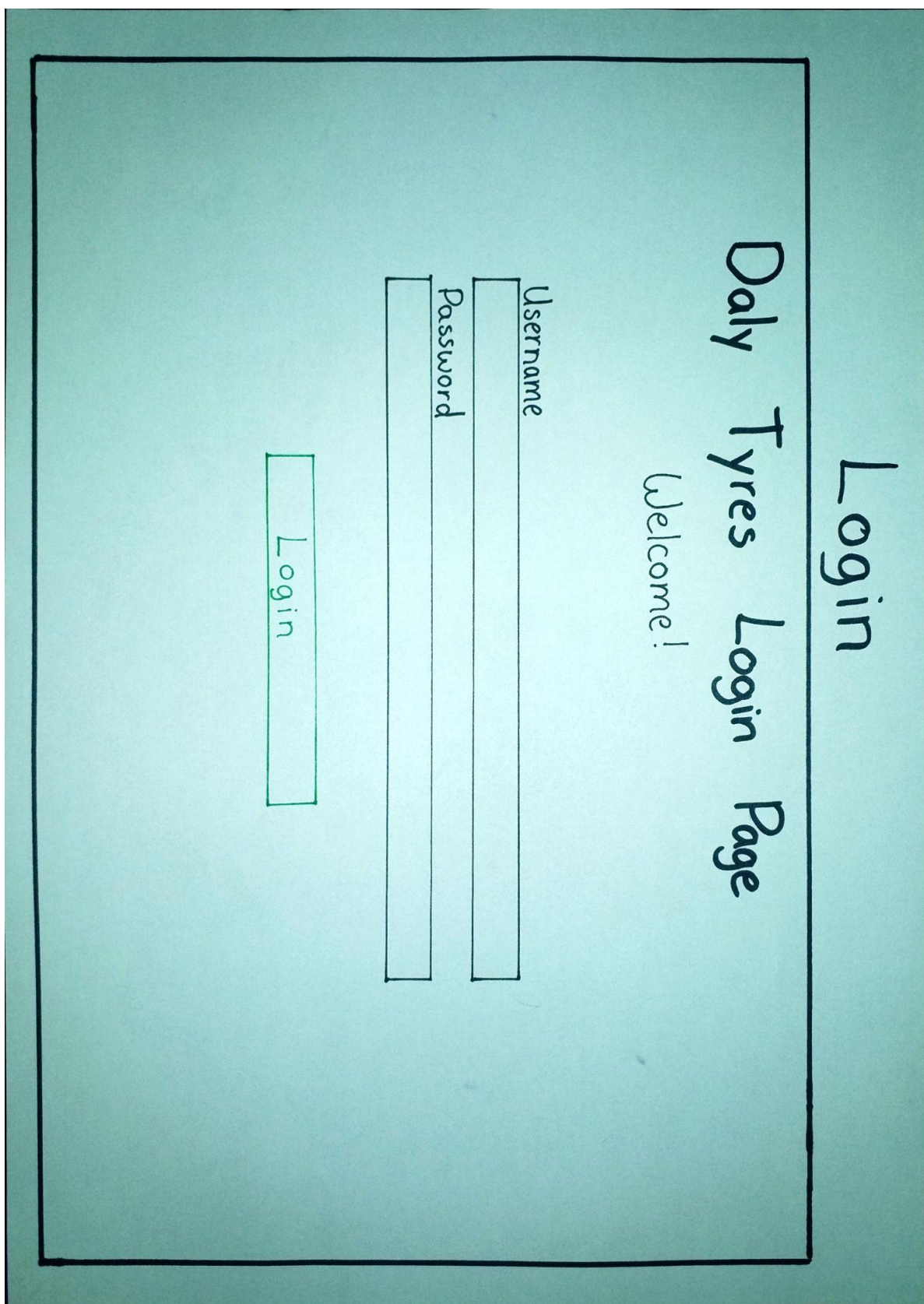# Initiate Job

Registration

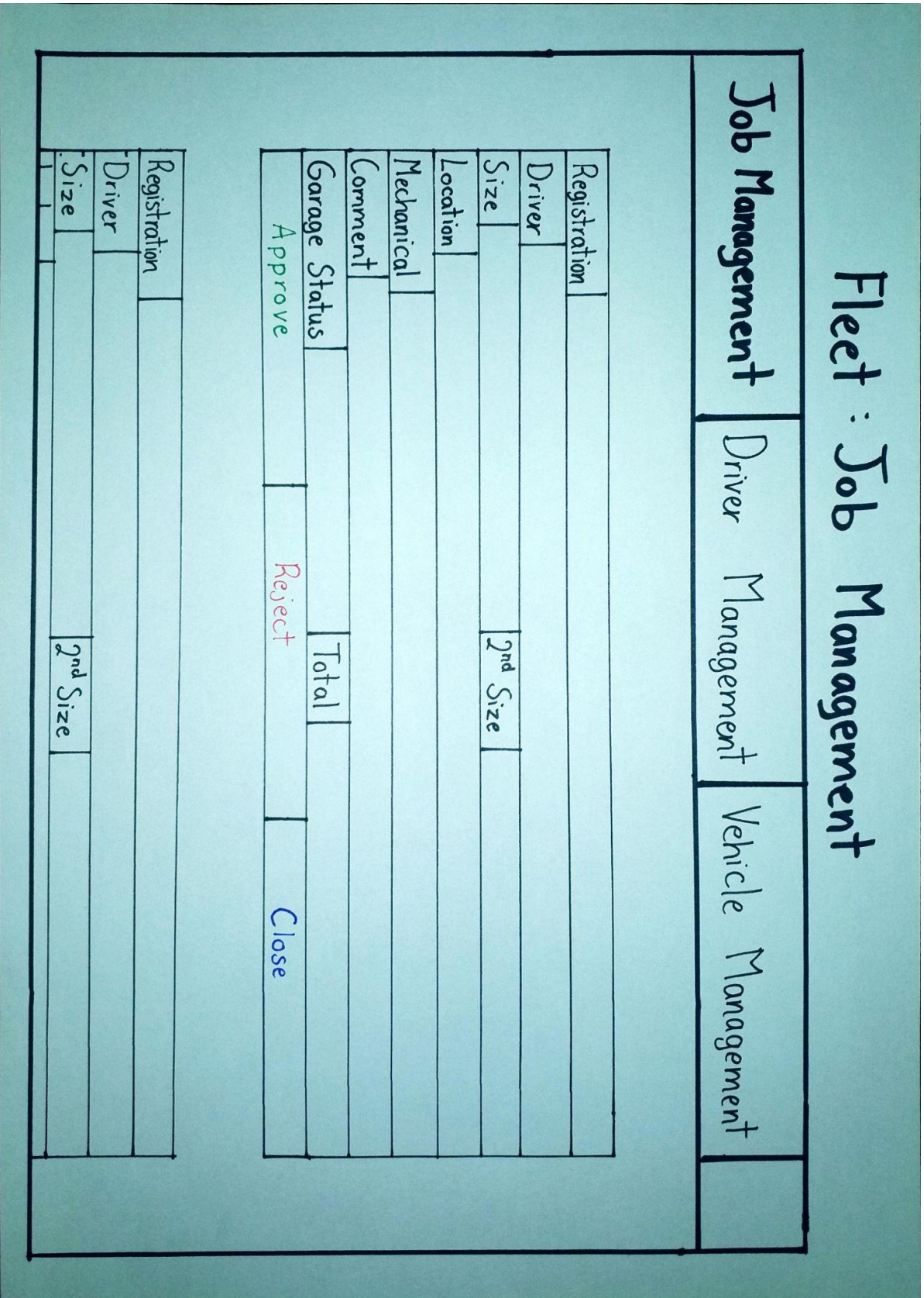Size 2nd Size

Location ▽

Mechanical ▽

Comment

Review Job

Reg	Size	2nd Size	Loc	Mech	Comment	Fleet Status	Garage Status

Fleet Interface

Fleet : Job Management

Job Management | Driver Management | Vehicle Management

Job Management

Registration

Driver

Size   2nd Size

Location

Mechanical

Comment

Garage Status   Total

Approve   Reject   Close

Registration

Driver

Size   2nd Size

Fleet: Driver Management

| Job Management | Driver Management | Vehicle Management | |

Add   Delete

Name ▽	License No. ▽

Fleet : Vehicle Management

Job Management	Driver Management	Vehicle Management	

Add

Delete

Vehicle   Registration

Garage Interface

Garage : Job Management

Job Management

Registration			
Size			
Mechanical			
Comment			
Updates			
Approve	Reject	Amend	

Registration			
Size			
Mechanical			
Comment			
Updates			

Daly Admin Interface

Daly Admin : Fleet Management

Fleet Management | Invoices | Reports

Add   Delete

Fleet Company
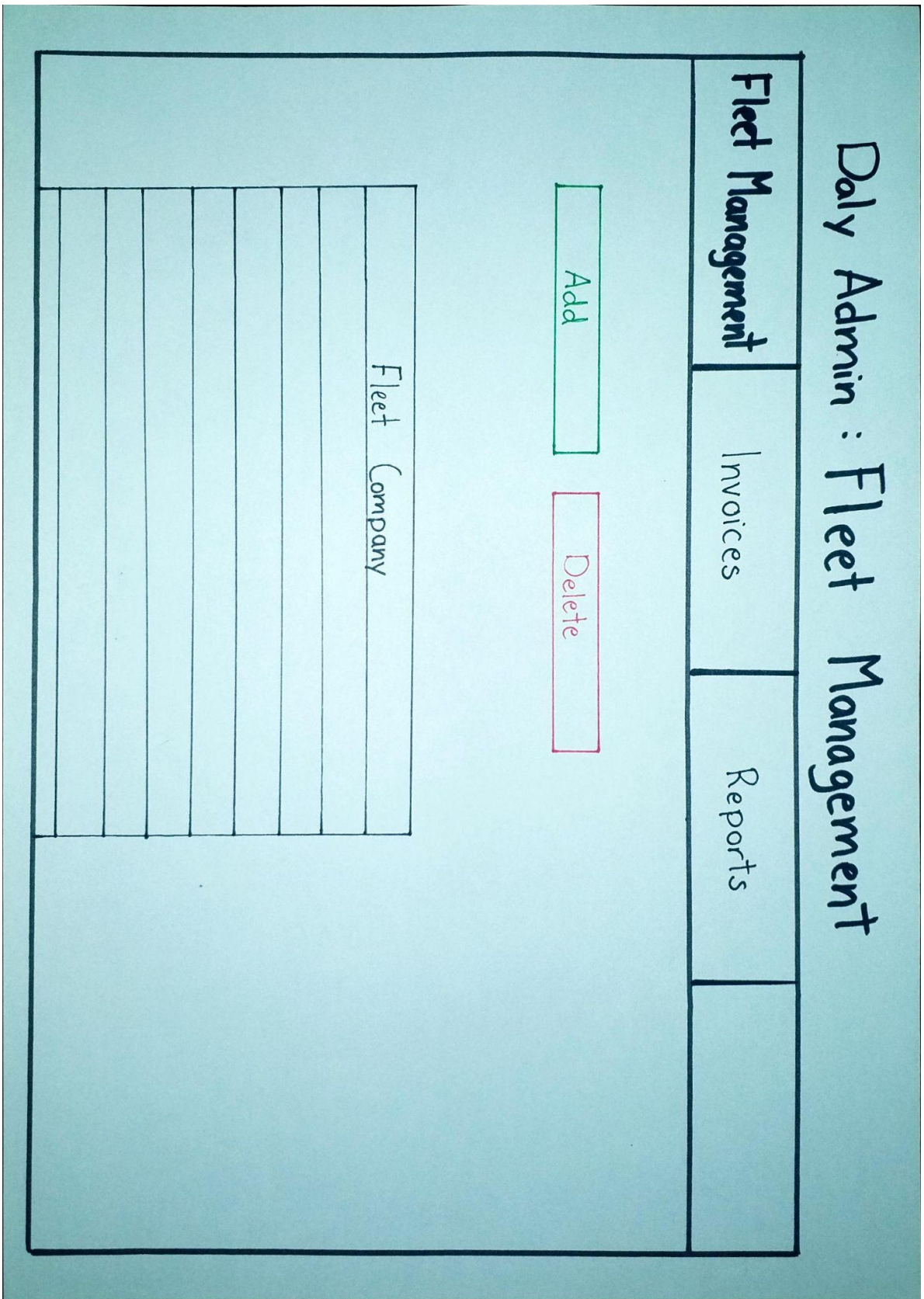
Daly Admin : Invoices

Fleet Management	Invoices	Reports	

Order No.									
Order Date									
Fleet									
Part									
Quantity									
Cost									

Order No.									
Order Date									
Fleet									
Part									

Daly Admin : Reports

| Fleet Management | Invoices | Reports | |

| Field |
|---|
| Job ID |
| Registration |
| Size |
| Location |
| Mechanical |
| Comment |
| Fleet Status |
| Garage Status |
| Fleet Close |
| Garage Close |
| Start Date |
| End Date |

2nd Size

Database

Diagram Overview
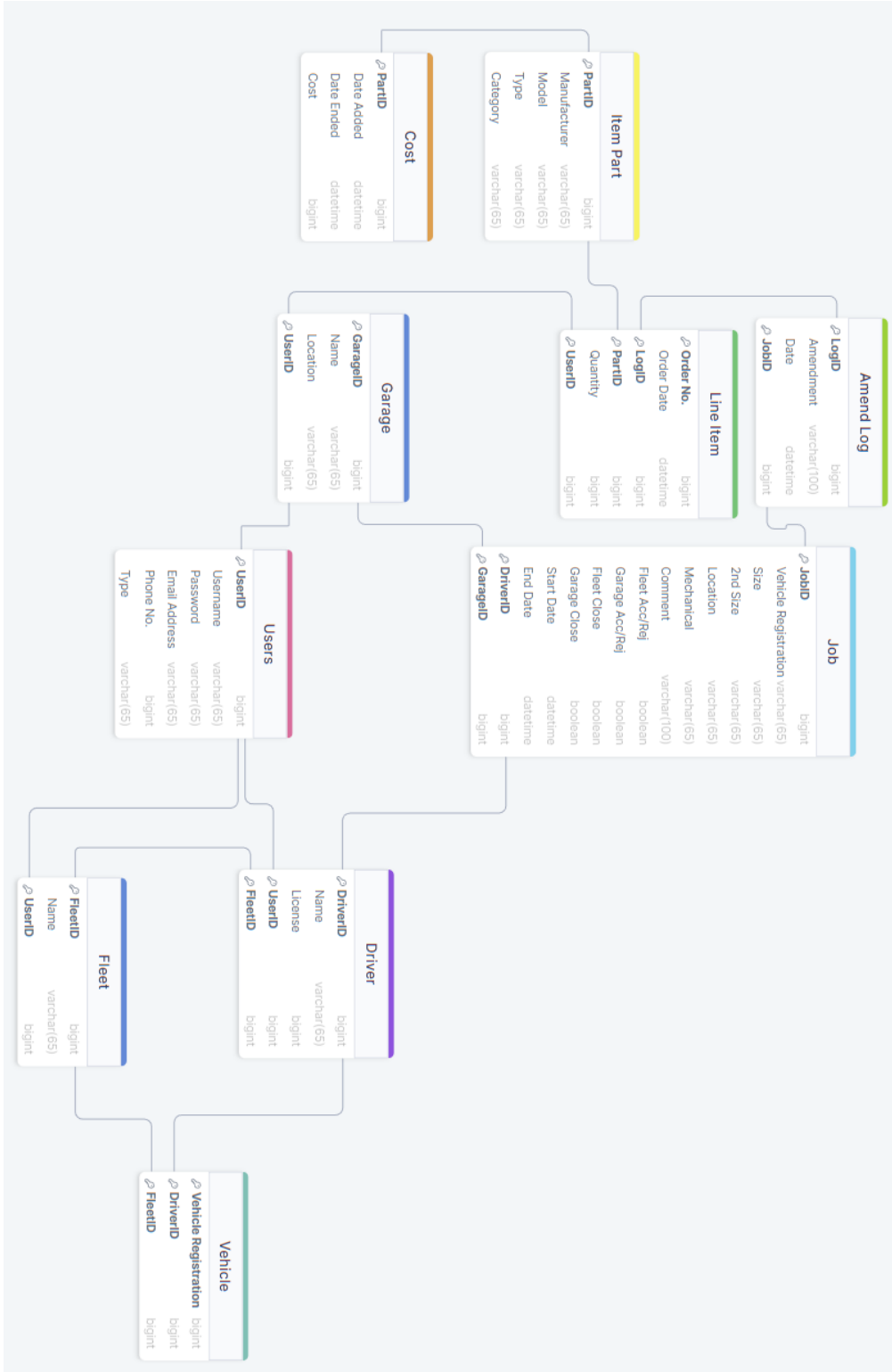
Database Breakdown

On the previous page is an overview of the entire database layout. To make it easier to see, below are two pictures of the database zoomed in. Only three connections have been cut off between the two pictures. In the Jobs table the DriverID from the Driver table and the GarageID from the Garage table, and in the Line Item table the UserID from the Garage table.
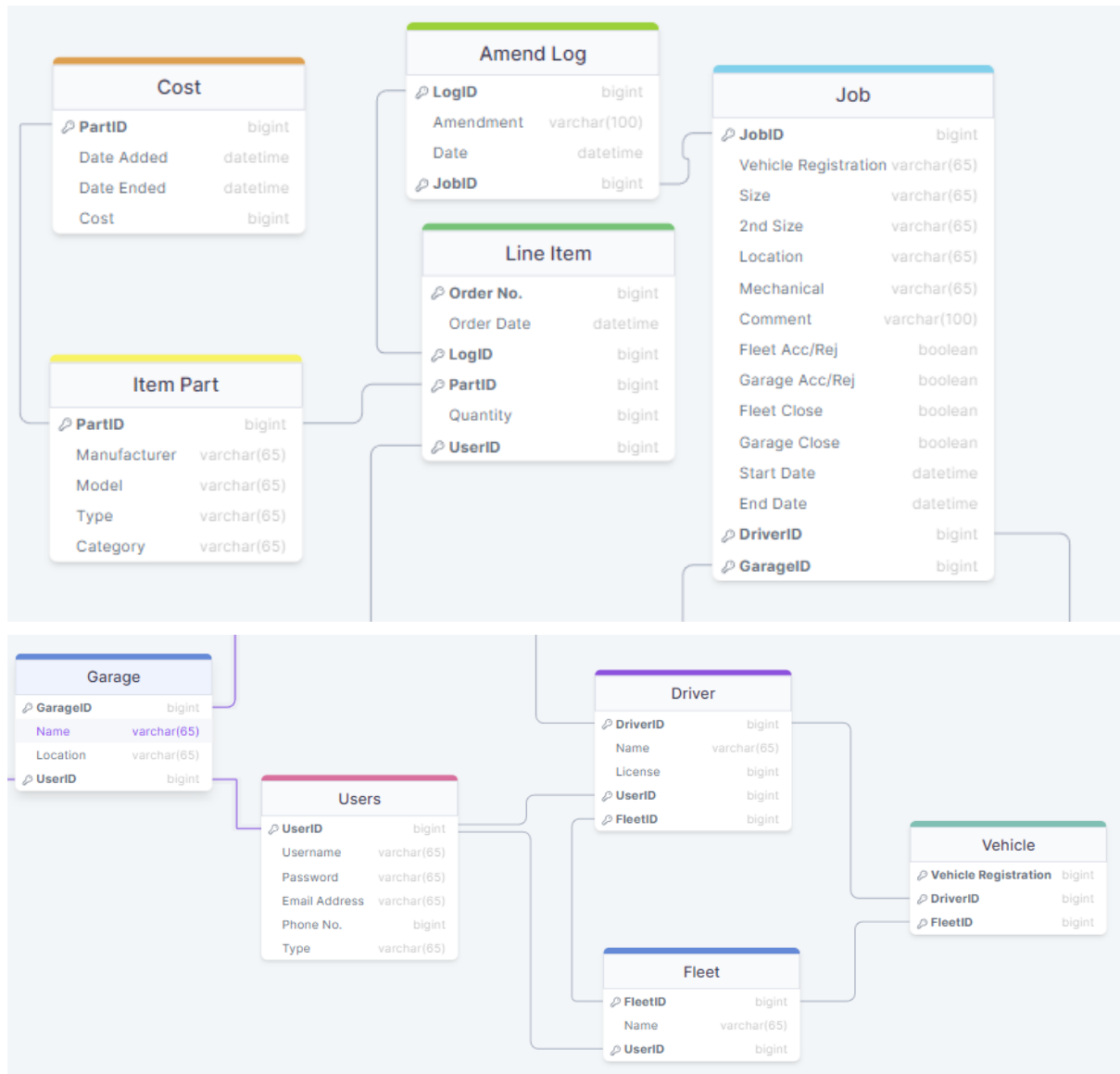
SQL 'CREATE TABLE' Queries

```
CREATE TABLE Users(
        UserID bigint,
        Username varchar(65),
        Password varchar(65),
        Email Address varchar(65),
        Phone No. bigint,
        Type varchar(65),
        PRIMARY KEY (UserID)
);

CREATE TABLE Fleet(
        FleetID bigint,
        Name varchar(65),
        UserID bigint,
        PRIMARY KEY (FleetID),
        FOREIGN KEY (UserID) REFERENCES Users(UserID),
);

CREATE TABLE Driver(
        DriverID bigint,
        Name varchar(65),
        Licence bigint,
        UserID bigint,
        FleetID bigint,
        PRIMARY KEY (DriverID),
        FOREIGN KEY (UserID) REFERENCES Users(UserID),
        FOREIGN KEY (FleetID) REFERENCES Fleet(FleetID)
);

CREATE TABLE Garage(
        GarageID bigint,
        Name varchar(65),
        Location varchar(65),
        UserID bigint,
        PRIMARY KEY (GarageID),
        FOREIGN KEY (UserID) REFERENCES Users(UserID)
);
```

```
CREATE TABLE Vehicle(
        Vehicle Registration varchar(100),
        DriverID bigint,
        FleetID bigint,
        PRIMARY KEY (Vehicle Registration),
        FOREIGN KEY (FleetID) REFERENCES Fleet(FleetID)
);

CREATE TABLE Job(
        JobID bigint,
        Vehicle Registration varchar(100),
        Size varchar(65),
        2nd Size varchar(65),
        Location varchar(65),
        Mechanical varchar(65),
        Comment varchar(100),
        Fleet Acc/Rej boolean,
        Garage Acc/Rej boolean,
        Fleet Close boolean,
        Garage Close boolean,
        Start Date datetime,
        End Date datetime,
        PRIMARY KEY (JobID),
        FOREIGN KEY (DriverID) REFERENCES Driver(DriverID),
        FOREIGN KEY (GarageID) REFERENCES Garage(GarageID)
);

CREATE TABLE Amend_Log(
        LogID bigint,
        Amendment varchar(100),
        Date datetime,
        JobID bigint,
        PRIMARY KEY (LogID),
        FOREIGN KEY (JobID) REFERENCES Job(JobID)
);

CREATE TABLE Item_Part(
        PartID bigint,
        Manufacturer varchar(65),
        Model varchar(65),
        Type varchar(65),
        Category varchar(65),
        PRIMARY KEY (PartID)
);
```

```
CREATE TABLE Cost(
        PartID bigint,
        Date Added datetime,
        Date Ended datetime,
        Cost bigint,
        FOREIGN KEY (PartID) REFERENCES Item_Part(PartID)
);

CREATE TABLE Line_Item(
        Order No. bigint,
        Oder Date datetime,
        LogID bigint,
        PartID bigint,
        Quantity bigint,
        UserID bigint,
        PRIMARY KEY (Order No.),
        FOREIGN KEY (LogID) REFERENCES Amend_Log(LogID),
        FOREIGN KEY (PartID) REFERENCES Item_Part(PartID),
        FOREIGN KEY (UserID) REFERENCES Users(UserID)
);
```

SQL Command Queries

- Universal: Login
    1. SELECT EmailAddress FROM fleetmanagement.users WHERE EmailAddress = "xxx";
    2. SELECT Password FROM fleetmanagement.users WHERE Password = "xxx";

- Driver: Initiate Job
    1. INSERT INTO fleetmanagement.job (VehicleRegistration, Size, 2ndSize, Location, Mechanical, Comment) VALUES ("xxx", "xxx", "xxx", "xxx", "xxx", "xxx");

- Driver: Review Job
    1. SELECT VehicleRegistration FROM fleetmanagement.job WHERE JobID = "xxx" ;
    2. SELECT Size FROM fleetmanagement.job WHERE JobID = "xxx" ;
    3. SELECT 2ndSize FROM fleetmanagement.job WHERE JobID = "xxx" ;
    4. SELECT Location FROM fleetmanagement.job WHERE JobID = "xxx" ;
    5. SELECT Mechanical FROM fleetmanagement.job WHERE JobID = "xxx" ;
    6. SELECT Comment FROM fleetmanagement.job WHERE JobID = "xxx" ;
    7. SELECT Fleet Acc/Rej FROM fleetmanagement.job WHERE JobID = "xxx" ;
    8. SELECT Garage Acc/Rej FROM fleetmanagement.job WHERE JobID = "xxx";

- Fleet: Job Management
    1. SELECT VehicleRegistration FROM fleetmanagement.job WHERE JobID = "xxx" ;
    2. SELECT DriverID FROM fleetmanagement.job Where JobID = "xxx";
    3. SELECT Size FROM fleetmanagement.job WHERE JobID = "xxx" ;
    4. SELECT 2ndSize FROM fleetmanagement.job WHERE JobID = "xxx" ;
    5. SELECT Location FROM fleetmanagement.job WHERE JobID = "xxx" ;
    6. SELECT Mechanical FROM fleetmanagement.job WHERE JobID = "xxx" ;
    7. SELECT Comment FROM fleetmanagement.job WHERE JobID = "xxx" ;
    8. SELECT Garage Acc/Rej FROM fleetmanagement.job WHERE JobID = "xxx";
    9. INSERT INTO fleetmanagement.job (Fleet Acc/Rej) VALUES ("xxx");

- Fleet: Driver Management
    1. SELECT Name FROM fleetmanagement.driver;
    2. SELECT License FROM fleetmanagement.driver;
    3. INSERT INTO fleetmanagement.driver (Name, License) VALUES ("xxx", "xxx");

- Fleet: Vehicle Management
    1. SELECT VehicleRegistration FROM fleetmanagement.vehicle;
    2. INSERT INTO fleetmanagement.vehicle (VehicleRegistration) VALUES ("xxx");

- Garage: Job Management
    1. SELECT VehicleRegistration FROM fleetmanagement.job WHERE JobID = "xxx" ;
    2. SELECT Size FROM fleetmanagement.job WHERE JobID = "xxx" ;
    3. SELECT 2ndSize FROM fleetmanagement.job WHERE JobID = "xxx" ;
    4. SELECT Mechanical FROM fleetmanagement.job WHERE JobID = "xxx" ;
    5. SELECT Comment FROM fleetmanagement.job WHERE JobID = "xxx" ;
    6. SELECT Amendment FROM fleetmanagement.amend_log WHERE JobID = "xxx";
    7. INSERT INTO fleetmanagement.job (Garage Acc/Rej) VALUES ("xxx");

- Daly Tyres: Fleet Management
    1. SELECT Name FROM fleetmanagement.fleet;
    2. INSERT INTO fleetmanagement.fleet (Name) VALUES ("xxx");

- Daly Tyres: Invoices
    1. SELECT OrderNo. FROM fleetmanagement.line_item WHERE OrderNo. = "xxx";
    2. SELECT Order Date FROM fleetmanagement.line_item WHERE OrderNo. = "xxx";
    3. SELECT Name FROM fleetmanagement.fleet WHERE UserID = "xxx";
    4. SELECT Model FROM fleetmanagement.item_part WHERE PartID = "xxx";
    5. SELECT Quantity FROM fleetmanagement.line_item WHERE OrderNo. = "xxx";

    6. SELECT Cost FROM fleetmanagement.COST WHERE PartID = "xxx";

- Daly Tyres: Reports
    1. SELECT JobID FROM fleetmanagement.job WHERE JobID = "xxx" ;
    2. SELECT VehicleRegistration FROM fleetmanagement.job WHERE JobID = "xxx" ;
    3. SELECT Size FROM fleetmanagement.job WHERE JobID = "xxx" ;
    4. SELECT 2ndSize FROM fleetmanagement.job WHERE JobID = "xxx" ;
    5. SELECT Location FROM fleetmanagement.job WHERE JobID = "xxx" ;
    6. SELECT Mechanical FROM fleetmanagement.job WHERE JobID = "xxx" ;
    7. SELECT Comment FROM fleetmanagement.job WHERE JobID = "xxx" ;
    8. SELECT Fleet Acc/Rej FROM fleetmanagement.job WHERE JobID = "xxx" ;
    9. SELECT Garage Acc/Rej FROM fleetmanagement.job WHERE JobID = "xxx";
    10. SELECT Start FROM fleetmanagement.job WHERE JobID = "xxx" ;
    11. SELECT End FROM fleetmanagement.job WHERE JobID = "xxx" ;

NoSQL

Since changing to Firebase that means that the prior production of SQL tables are no longer relevant. Although can be used if one was to continue down the route of trying to connect to MySQL.

Because of this a NoSQL database must be considered.

Collections:
- Jobs
- Users
- Orders

Each of these collections will hold a number of documents. Each document will have a randomly generated Id.

Documents within the Jobs collection will contain:
- Registration - String
- Size - String
- Location -String
- Garage - String
- FleetStatus - String
- GarageStatus - String
- Comment -String
- Created - date

Documents within the Jobs collection will contain:
- Manufacturer - String
- Model - String
- Type -String
- Category - String
- Quantity - Int
- AdminStatus -String
- Created - String

Documents within the Jobs collection will contain:
- Name - String
- Email - String
- Role -String