

Algorithms

Reserve Car

```
reserveCar(vehicle, user, dates)
    validateUser(user)
    if isReserved(vehicle, dates)
        return already booked
    cost = amountForRental(vehicle, dates)
    transaction = new Transaction(cost)
    invoice = new Invoice(user, cost, dates)
    if transaction.sendInvoice(invoice) results in error
        return payment error
    reserve(vehicle, user, dates)
    return no error
```

Get Available Vehicles for Location during period

```
listAvailableVehiclesForLocationDuringDates(location, dates)
    vehicles = getAllVehicles()
    for vehicle in vehicles
        if vehicle.getLocation() not equal location
            remove vehicle from vehicles
    for vehicle in vehicles
        if isReserved(vehicle, dates)
            remove vehicle from vehicles
    return vehicles
```

Create New User Account

```
createUserAccount()
    If password not equal confirmedPassword
        showMessage "Entered passwords do not match"
        return
    aUser = findByUsername(username)
    If aUser not NULL
        showMessage "Username already in use try a different one"
        return
    try
        User newUser = new User()
        newUser.setUsername(username)
        newUser.setEmail(email)
        newUser.setUsername(username)
```

```

        newUser.setAccountCreatedDate(accountCreatedDate)
        String pass = Password.createHash(password)
        newUser.setPassword(pass)
        userFacade.create(newUser)
    catch (exception)
        showMessage "fatal error something went wrong"
        return
    showMessage "User account successfully created"
    return "/SignIn?faces-redirect=true"

```

Send Invoice

```

sendInvoice(invoice)
    renter = invoice.getContactInfo()
    payment = renter.getPayMethod()
    If not payment.getIsVerified()
        showMessage "Payment Method is not verified"
        return false
    result = invoice.sendInvoice(renter, invoice.getDescription()) /*Sends invoice via
external payment service*/
    If result
        invoice.setDateInvoiceSent(LocalDateTime.now())
    Else
        showMessage "Error sending invoice, please try again later"
        return Error

```

Change Vehicle

```

changeVehicle(vehicle)
    if isReserved(vehicle, this.getDate())
        return already booked
    oldCost = this.rentalVehicle.getCost()
    this.rentalVehicle = vehicle
    cost = amountForRental(vehicle, dates)
    If cost != oldCost
        transaction = new Transaction(cost)
        invoice = new Invoice(user,cost, dates)
        issueRefund(user, cost - oldCost)
    return success

```

Send Message

```

sendMessage(message)
    messageDate = message.getDateSent()
    messageTime = message.getTimeSent()
    messageContent = message.getContents()

```

```
If messageContent != ""  
    Chat.addMessage(message)  
    showMessage "Message successfully sent"  
    showMessage messageDate, messageTime  
    Return  
Else  
    showMessage "Error sending message, please try again later"  
    Return
```