AUTO – M – TRACKER Application

Based on JavaFX and MySQL

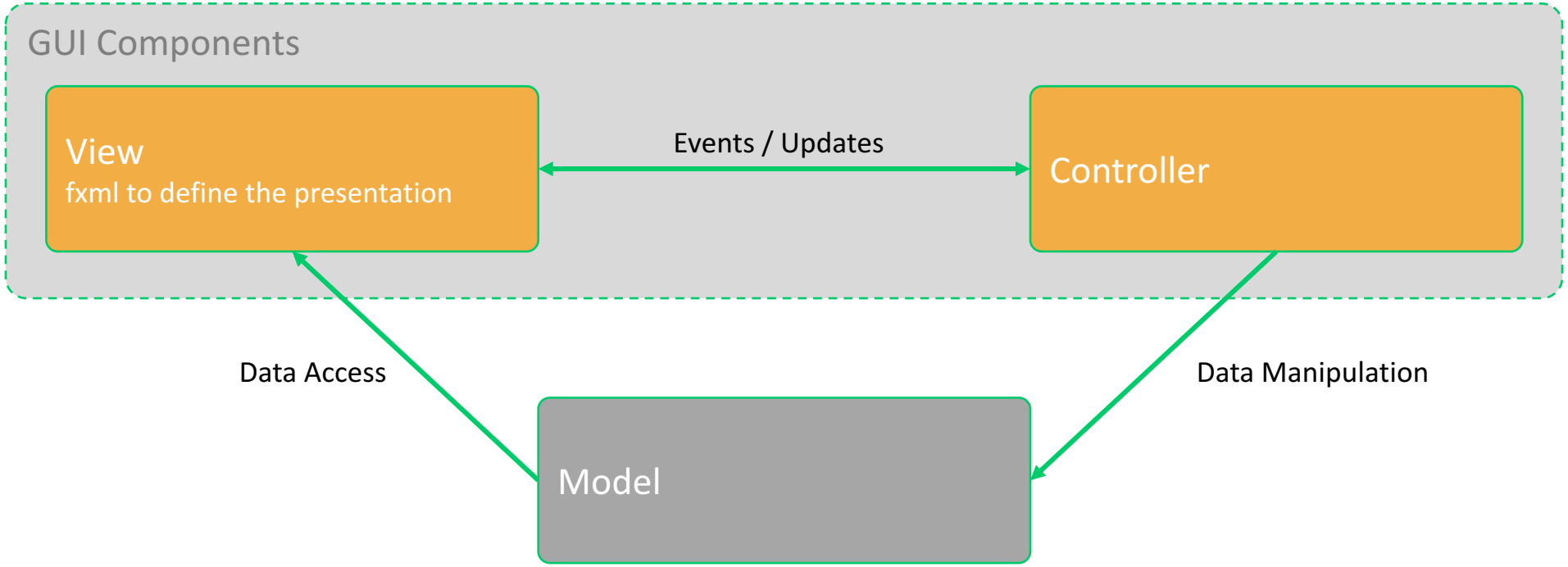
By

BICHENG XIAO

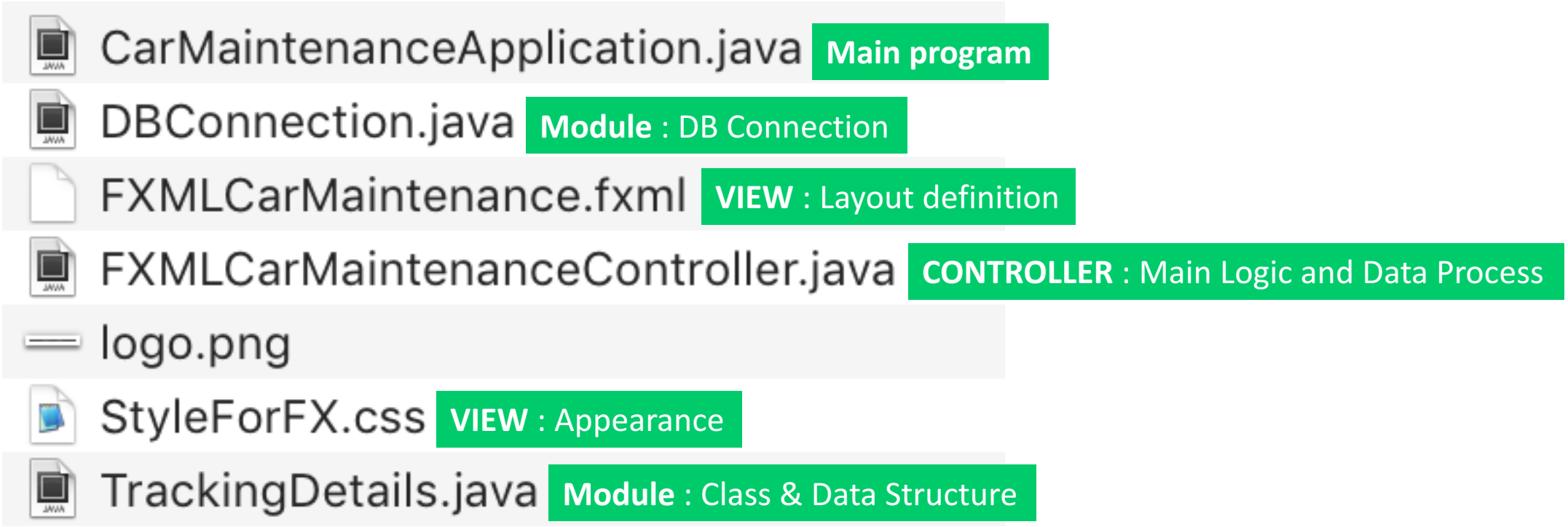
Architecture | GUI Design | Function & Man Pages | Data Design | APIs | Assumption & Design Decision

MVC

Architecture - MVC



Architecture - MVC



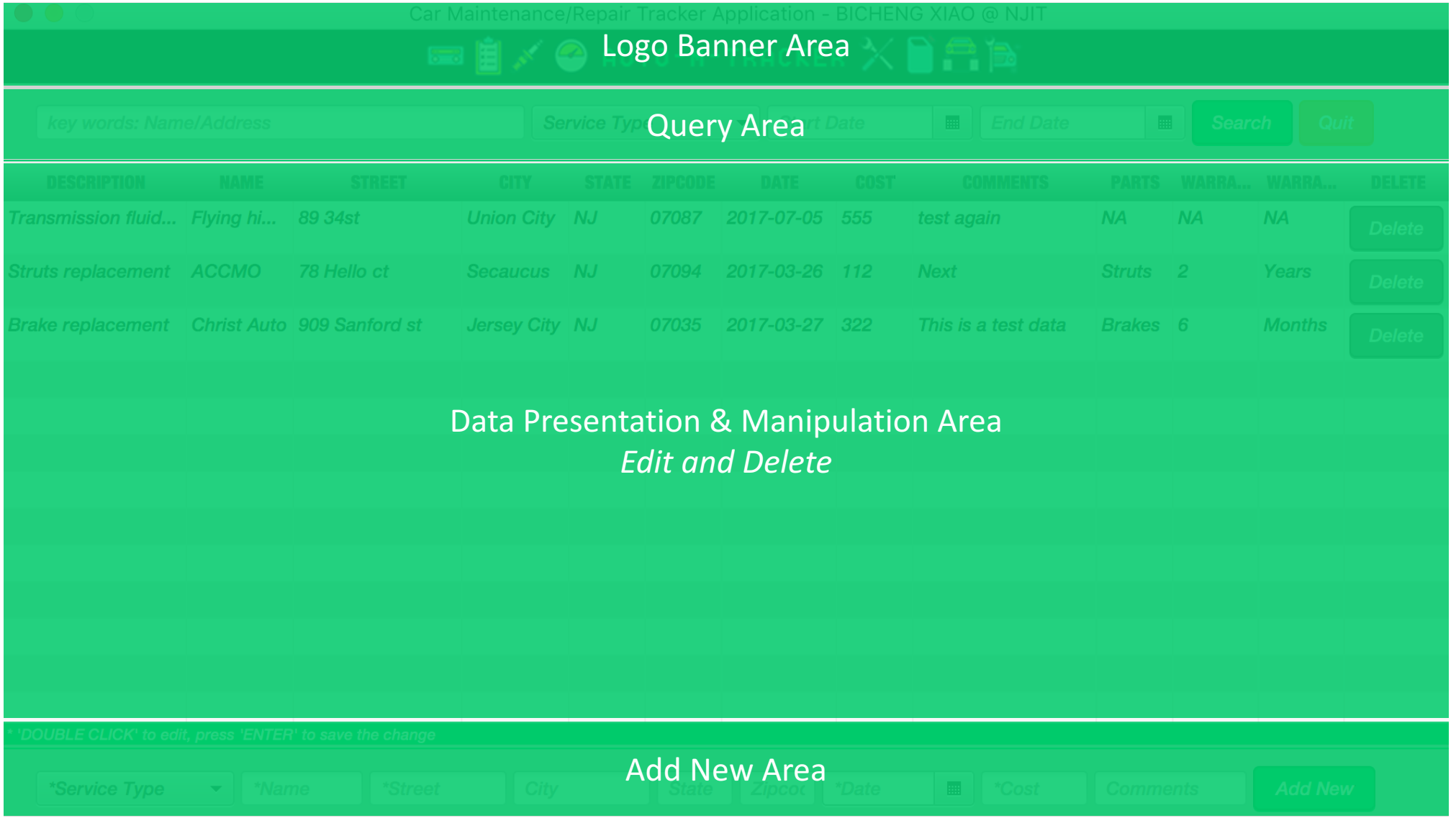
Architecture | **GUI Design** | Function & Man Pages | Data Design | APIs | Assumption & Design Decision

Layout Design

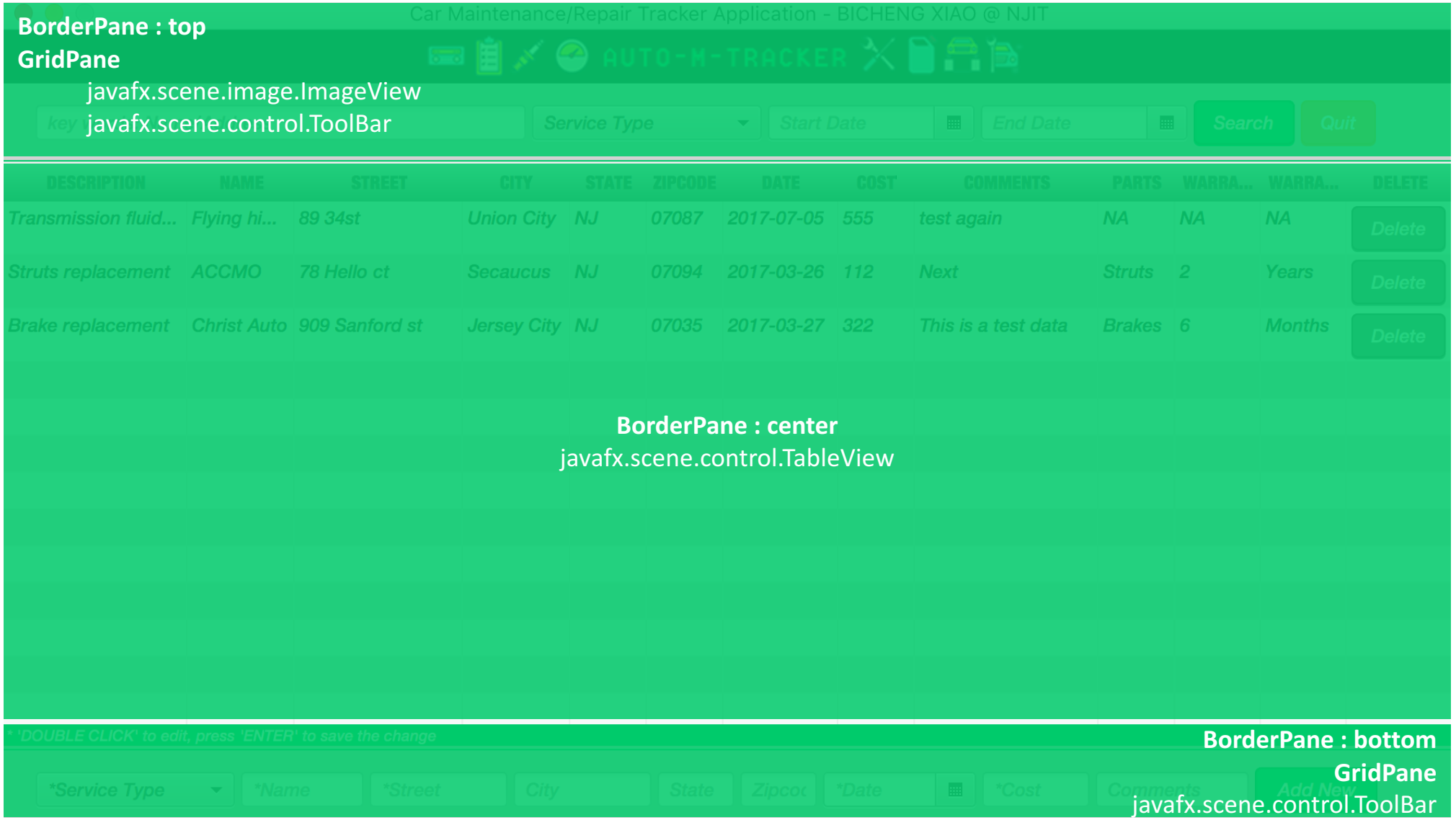
Pane & Control

Portal

Layout Design



Layout : Pane & Control

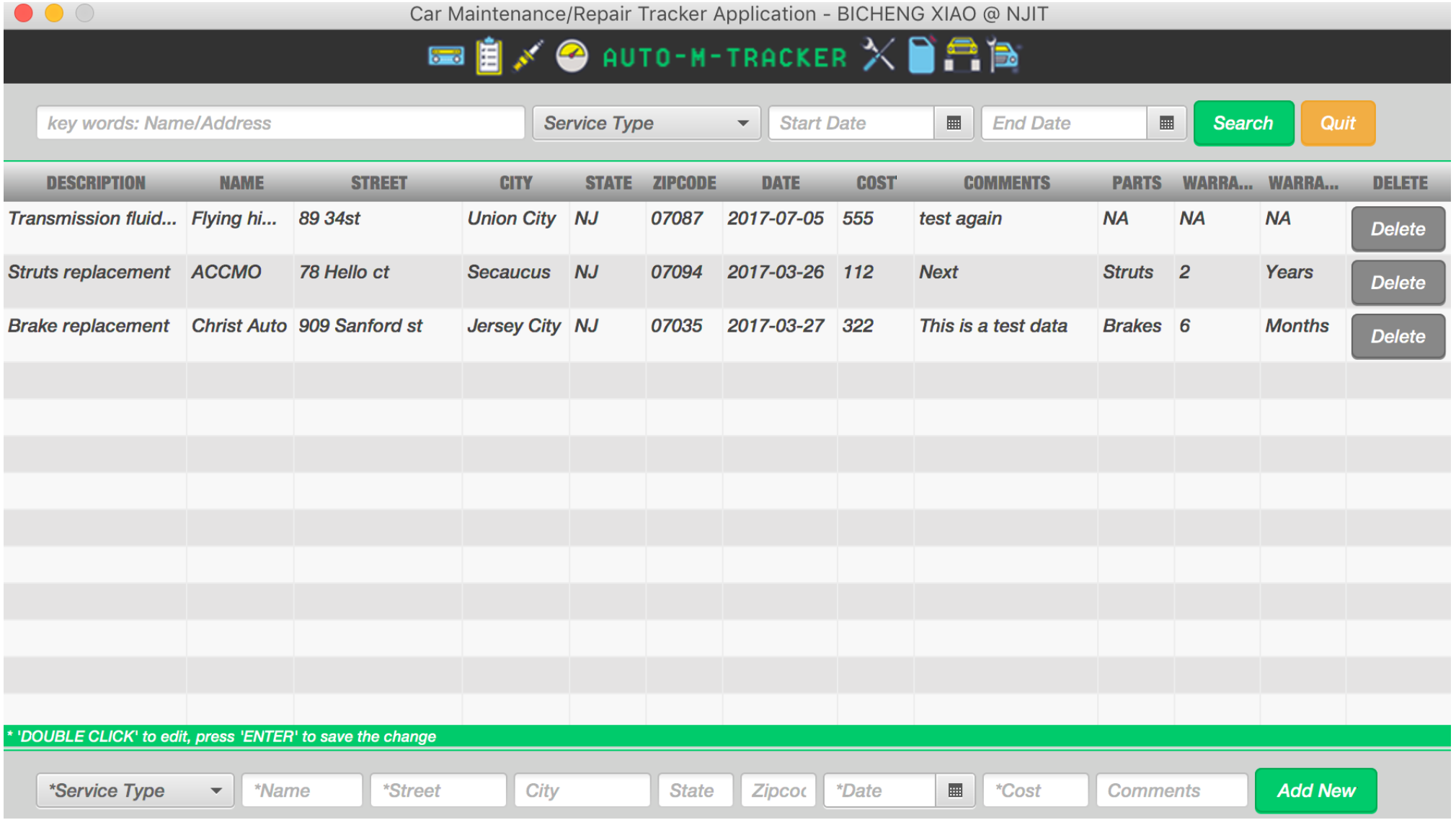


BorderPane : top
GridPane
javafx.scene.image.ImageView
javafx.scene.control.ToolBar

BorderPane : center
javafx.scene.control.TableView

BorderPane : bottom
GridPane
javafx.scene.control.ToolBar

Layout


Car Maintenance/Repair Tracker Application - BICHENG XIAO @ NJIT
AUTO-M-TRACKER
key words: Name/Address
Service Type
Start Date
End Date
Search
Quit
DESCRIPTION
NAME
STREET
CITY
STATE
ZIPCODE
DATE
COST
COMMENTS
PARTS
WARRA...
WARRA...
DELETE
Transmission fluid... Flying hi... 89 34st Union City NJ 07087 2017-07-05 555 test again NA NA NA Delete
Struts replacement ACCMO 78 Hello ct Secaucus NJ 07094 2017-03-26 112 Next Struts 2 Years Delete
Brake replacement Christ Auto 909 Sanford st Jersey City NJ 07035 2017-03-27 322 This is a test data Brakes 6 Months Delete
* 'DOUBLE CLICK' to edit, press 'ENTER' to save the change
*Service Type
*Name
*Street
City
State
Zipcoc
*Date
*Cost
Comments
Add New

Architecture | GUI Design | **Function & Man Pages** | Data Design | APIs | Assumption & Design Decision

Query

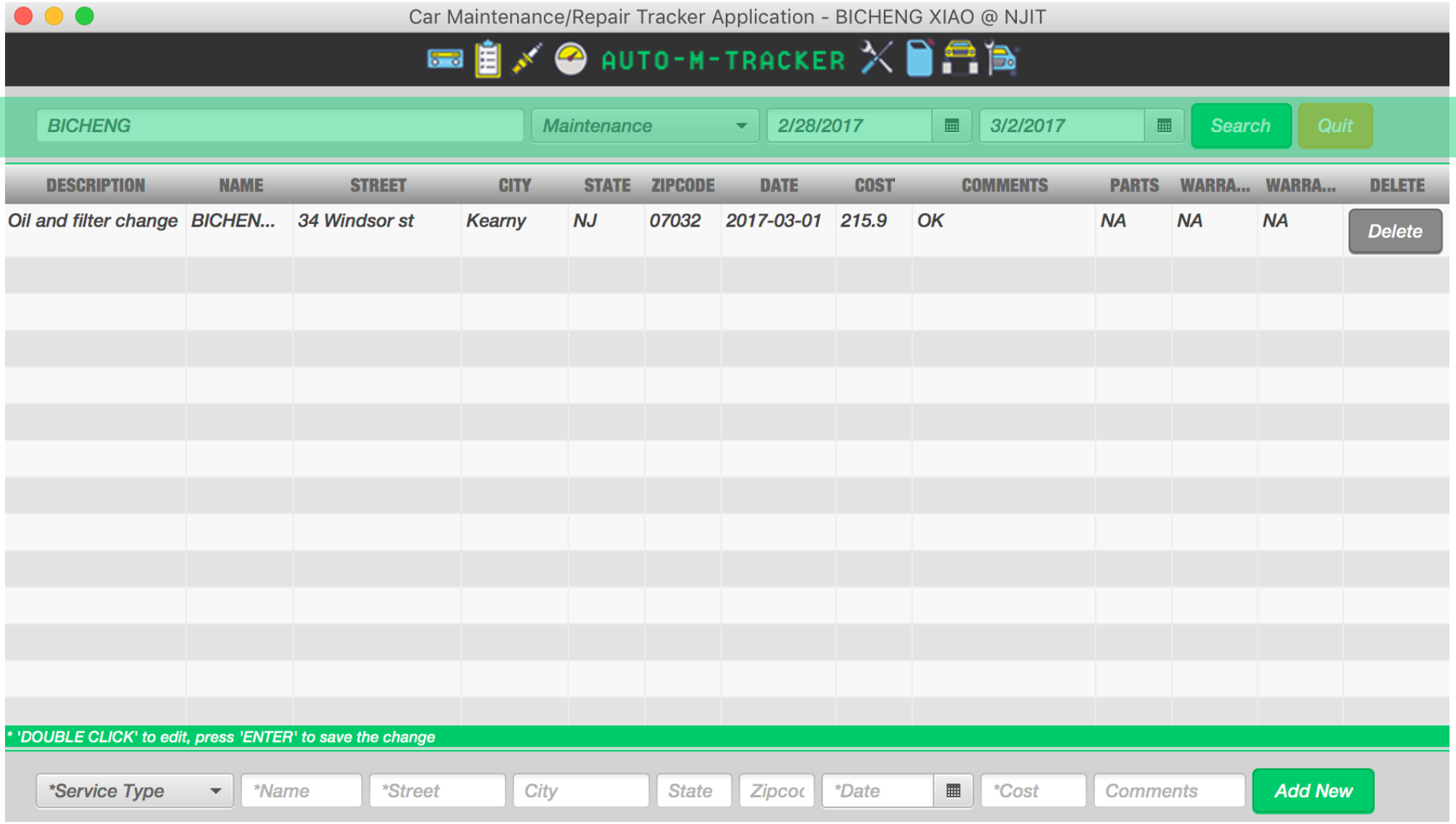
Edit

Delete

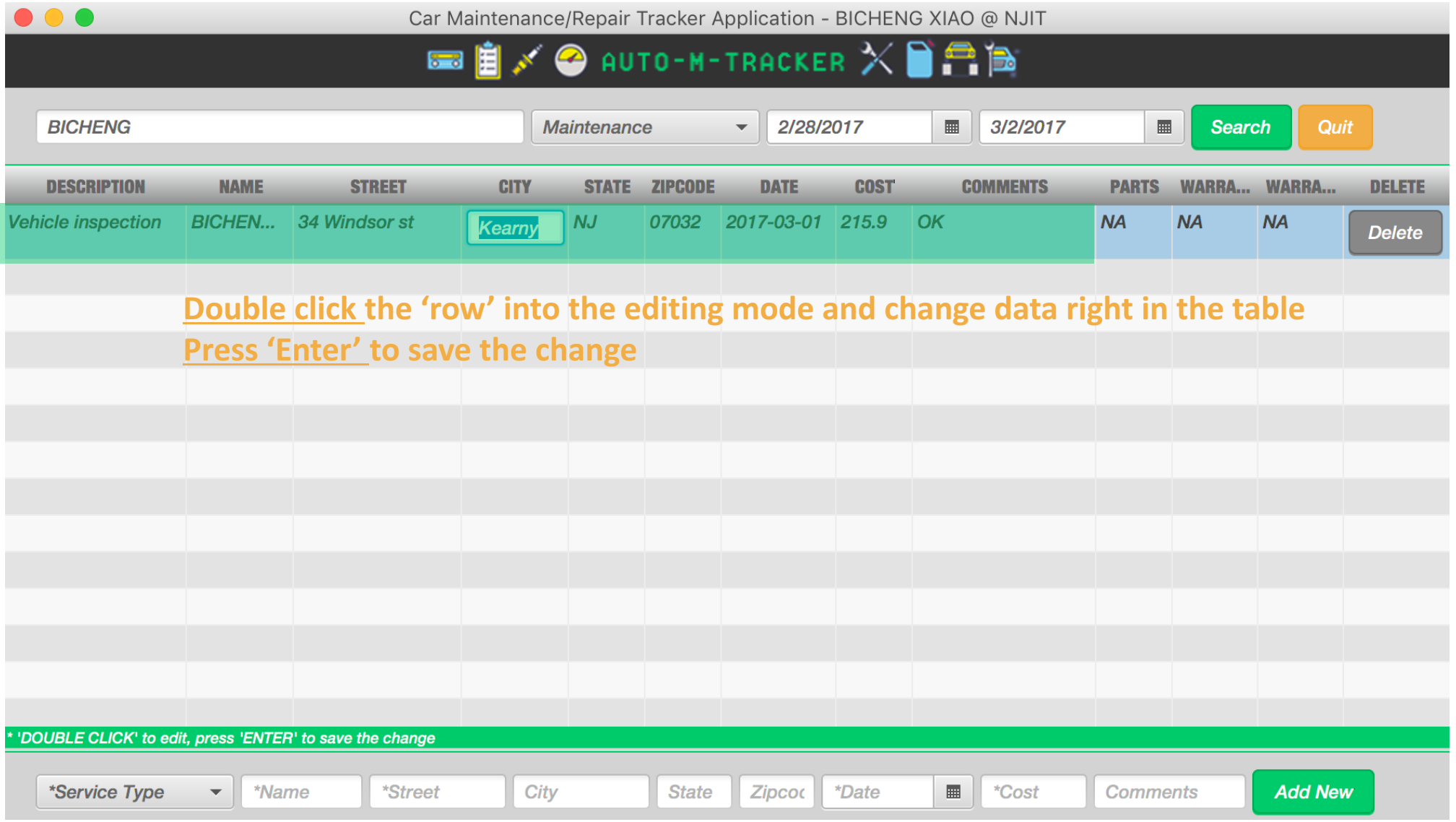
Add New

Validation & Error Alert

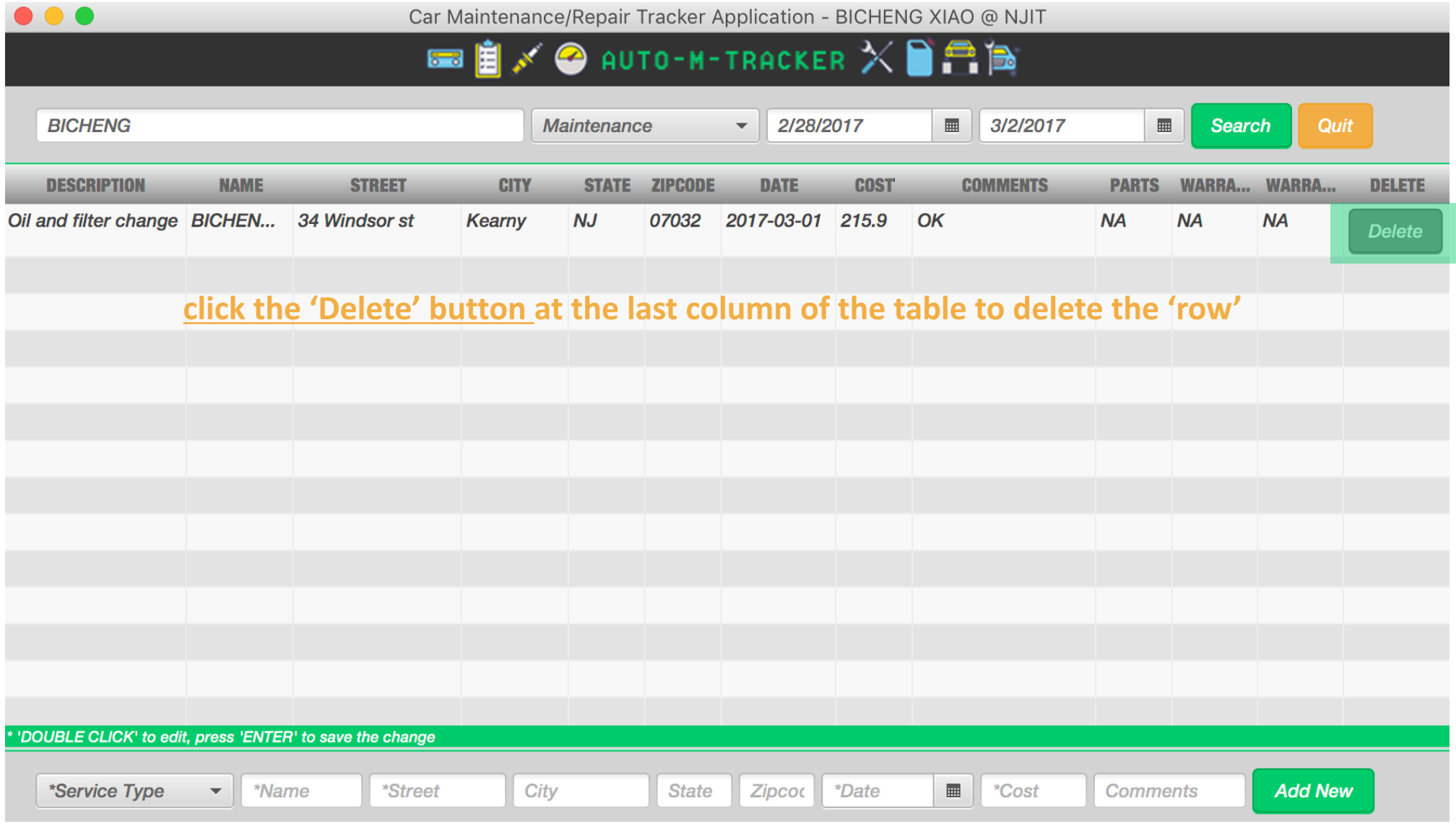
Query


Car Maintenance/Repair Tracker Application - BICHENG XIAO @ NJIT
AUTO-M-TRACKER
BICHENG
Maintenance
2/28/2017
3/2/2017
Search
Quit
DESCRIPTION
NAME
STREET
CITY
STATE
ZIPCODE
DATE
COST
COMMENTS
PARTS
WARRA...
WARRA...
DELETE
Oil and filter change
BICHEN...
34 Windsor st
Kearny
NJ
07032
2017-03-01
215.9
OK
NA
NA
NA
Delete
* 'DOUBLE CLICK' to edit, press 'ENTER' to save the change
*Service Type
*Name
*Street
City
State
Zipcoc
*Date
*Cost
Comments
Add New

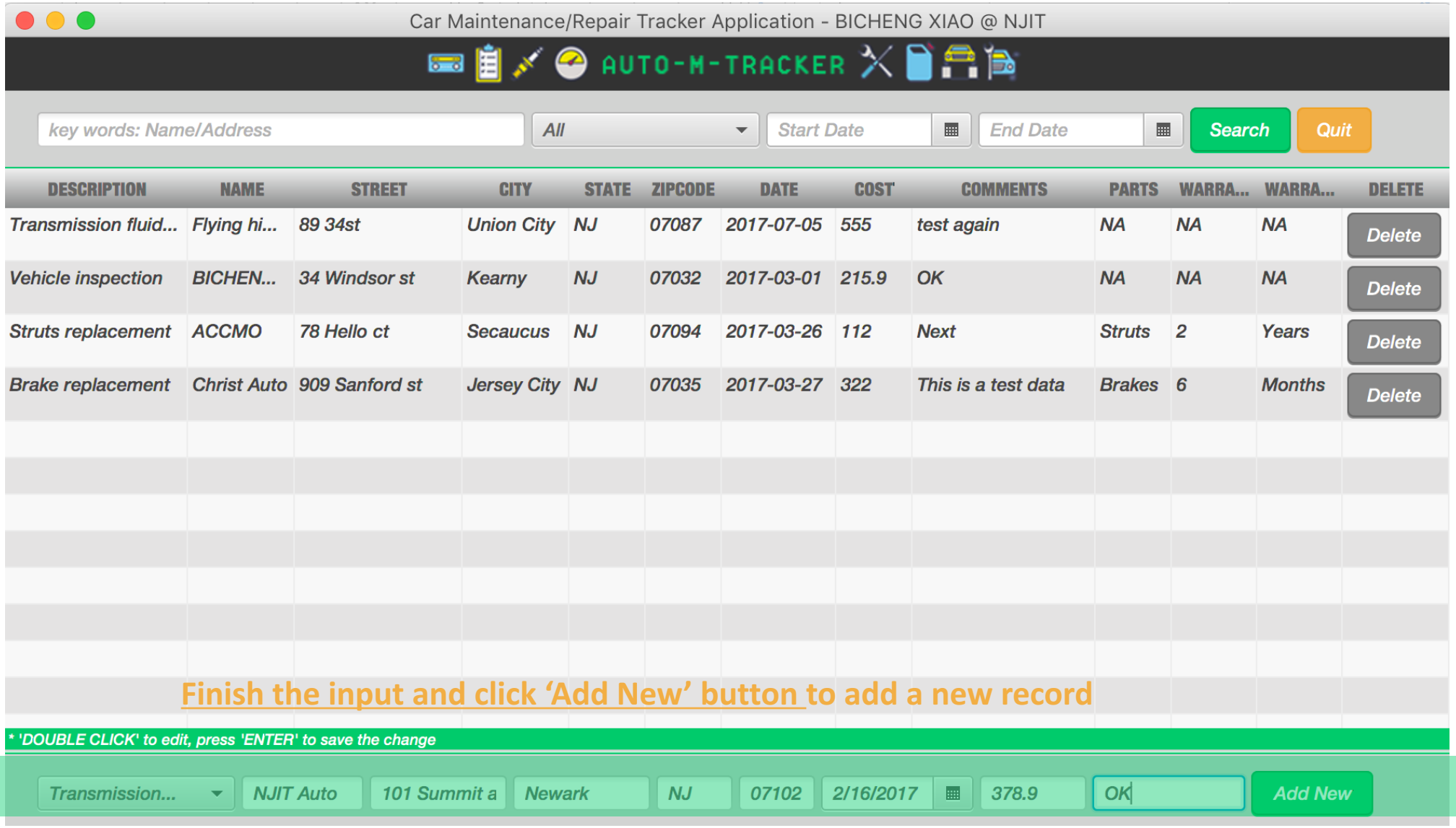
Edit


Car Maintenance/Repair Tracker Application - BICHENG XIAO @ NJIT
AUTO-M-TRACKER
BICHENG
Maintenance
2/28/2017
3/2/2017
Search
Quit
DESCRIPTION
NAME
STREET
CITY
STATE
ZIPCODE
DATE
COST
COMMENTS
PARTS
WARRA...
WARRA...
DELETE
Vehicle inspection
BICHEN...
34 Windsor st
Kearny
NJ
07032
2017-03-01
215.9
OK
NA
NA
NA
Delete
Double click the 'row' into the editing mode and change data right in the table
Press 'Enter' to save the change
* 'DOUBLE CLICK' to edit, press 'ENTER' to save the change
*Service Type
*Name
*Street
City
State
Zipcoc
*Date
*Cost
Comments
Add New

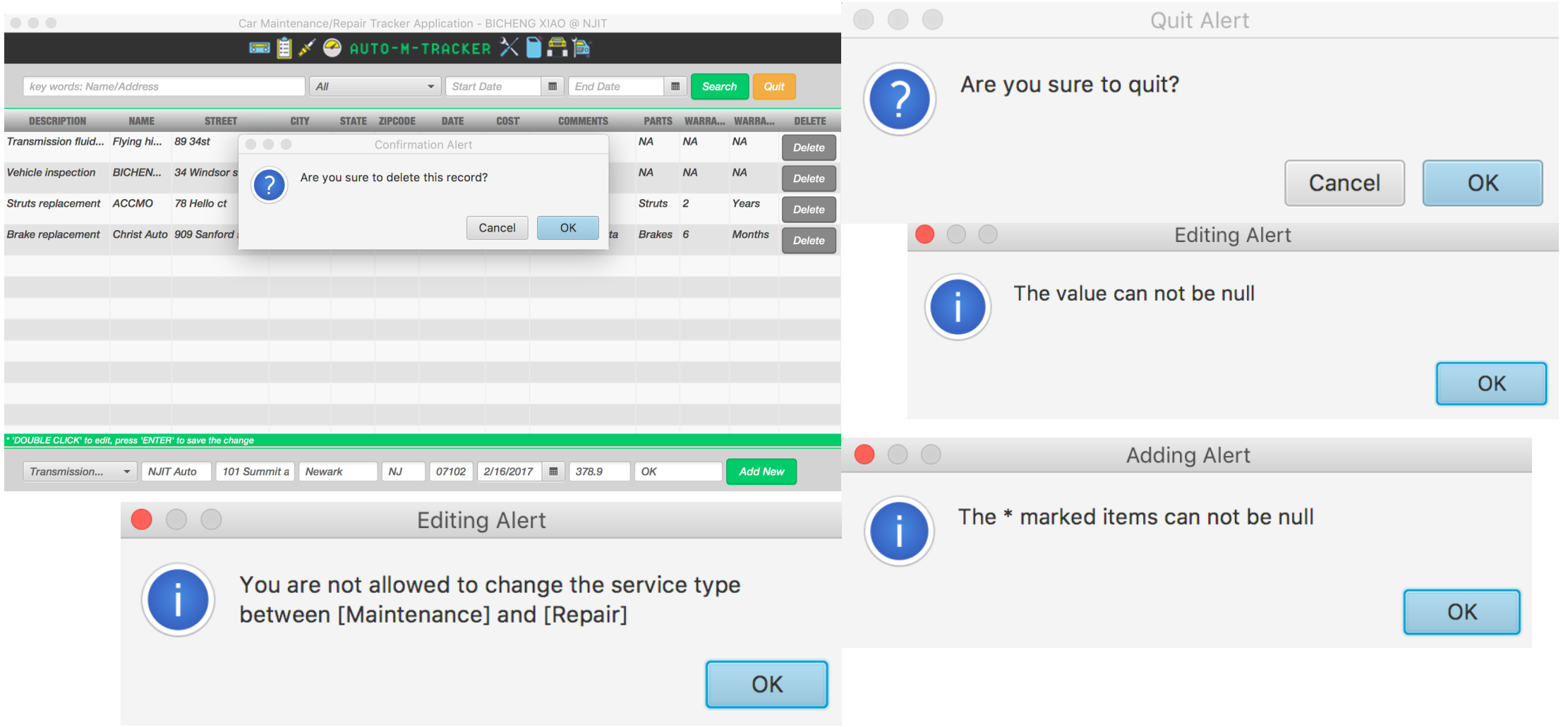
Delete


Car Maintenance/Repair Tracker Application - BICHENG XIAO @ NJIT
AUTO-M-TRACKER
BICHENG
Maintenance
2/28/2017
3/2/2017
Search
Quit
DESCRIPTION
NAME
STREET
CITY
STATE
ZIPCODE
DATE
COST
COMMENTS
PARTS
WARRA...
WARRA...
DELETE
Oil and filter change
BICHEN...
34 Windsor st
Kearny
NJ
07032
2017-03-01
215.9
OK
NA
NA
NA
Delete
click the 'Delete' button at the last column of the table to delete the 'row'
* 'DOUBLE CLICK' to edit, press 'ENTER' to save the change
*Service Type
*Name
*Street
City
State
Zipcoc
*Date
*Cost
Comments
Add New

Add New


Car Maintenance/Repair Tracker Application - BICHENG XIAO @ NJIT
AUTO-M-TRACKER
key words: Name/Address
All
Start Date
End Date
Search
Quit
DESCRIPTION NAME STREET CITY STATE ZIPCODE DATE COST COMMENTS PARTS WARRA... WARRA... DELETE
Transmission fluid... Flying hi... 89 34st Union City NJ 07087 2017-07-05 555 test again NA NA NA Delete
Vehicle inspection BICHEN... 34 Windsor st Kearny NJ 07032 2017-03-01 215.9 OK NA NA NA Delete
Struts replacement ACCMO 78 Hello ct Secaucus NJ 07094 2017-03-26 112 Next Struts 2 Years Delete
Brake replacement Christ Auto 909 Sanford st Jersey City NJ 07035 2017-03-27 322 This is a test data Brakes 6 Months Delete
Finish the input and click 'Add New' button to add a new record
* 'DOUBLE CLICK' to edit, press 'ENTER' to save the change
Transmission...
NJIT Auto
101 Summit a
Newark
NJ
07102
2/16/2017
378.9
OK
Add New

Validation & Alert



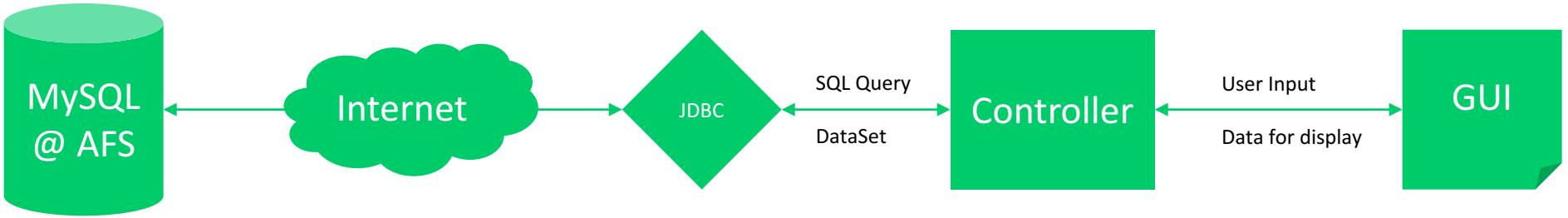
Architecture | GUI Design | Function & Man Pages | **Data Design** | APIs | Assumption & Design Decision

DFD

Table

Main Query SQL

DFD


MySQL
@ AFS
Internet
JDBC
SQL Query
DataSet
Controller
User Input
Data for display
GUI

Table

Name: MaintenanceAndRepairs Schema: bx34

Column	Datatype	PK	NN	UQ	BIN	UN	ZF	AI	G	Default / Expressi
id	INT(11)	☑	☑	☐	☐	☐	☐	☑	☐	
name	VARCHAR(50)	☐	☑	☐	☐	☐	☐	☐	☐	
street	VARCHAR(50)	☐	☐	☐	☐	☐	☐	☐	☐	NULL
city	VARCHAR(50)	☐	☐	☐	☐	☐	☐	☐	☐	NULL
state	CHAR(2)	☐	☐	☐	☐	☐	☐	☐	☐	NULL
zipcode	CHAR(5)	☐	☐	☐	☐	☐	☐	☐	☐	NULL
date	DATETIME	☐	☑	☐	☐	☐	☐	☐	☐	
cost	DOUBLE	☐	☑	☐	☐	☐	☐	☐	☐	
service_id	INT(11)	☐	☑	☐	☐	☐	☐	☐	☐	
service_type	CHAR(1)	☐	☑	☐	☐	☐	☐	☐	☐	
comments	VARCHAR(2000)	☐	☐	☐	☐	☐	☐	☐	☐	NULL
<click to edit>		☐	☐	☐	☐	☐	☐	☐	☐	

Name: MaintenanceTypes Schema: bx34

Column	Datatype	PK	NN	UQ	BIN	UN	ZF	AI	G	Default / Expression
maintenance_...	INT(11)	☑	☑	☐	☐	☐	☐	☐	☐	
description	VARCHAR(50)	☐	☑	☐	☐	☐	☐	☐	☐	

Name: RepairTypes Schema: bx34

Column	Datatype	PK	NN	UQ	BIN	UN	ZF	AI	G	Default / Expression
repair_id	INT(11)	☑	☑	☐	☐	☐	☐	☐	☐	
description	VARCHAR(50)	☐	☑	☐	☐	☐	☐	☐	☐	
parts	VARCHAR(100)	☐	☑	☐	☐	☐	☐	☐	☐	
warranty_units	INT(11)	☐	☑	☐	☐	☐	☐	☐	☐	
warranty_time	VARCHAR(10)	☐	☑	☐	☐	☐	☐	☐	☐	

Major Query SQL

Query based on user input

```
SELECT * FROM (
                    SELECT M1.id, M1.service_id, M1.service_type, M2.description, M1.name, M1.street, M1.city, M1.state, M1.zipcode, LEFT(M1.date,10) as date,
                            M1.cost, M1.comments, 'NA' as parts, 'NA' as warranty_units, 'NA' as warranty_time
                    FROM MaintenanceAndRepairs M1, MaintenanceTypes M2
                            WHERE M1.service_id = M2.maintenance_id AND M1.service_type='M'
            UNION ALL
                    SELECT M3.id, M3.service_id, M3.service_type, M4.description, M3.name, M3.street, M3.city, M3.state, M3.zipcode, LEFT(M3.date,10) as date,
                            M3.cost, M3.comments, M4.parts, M4.warranty_units, M4.warranty_time
                    FROM MaintenanceAndRepairs M3, RepairTypes M4
                            WHERE M3.service_id = M4.repair_id AND M3.service_type='R'
            ) U
            WHERE U.name <> '' AND (name = 'BICHENG' OR name LIKE '%BICHENG%' OR street = 'BICHENG' OR street LIKE '%BICHENG%') AND service_type = 'M' AND date >=
'2017-02-08' AND date <= '2017-03-02' ;
```

Get all the service type

```
SELECT 'M' as service_type, M.maintenance_id, M.description FROM MaintenanceTypes M
UNION ALL
SELECT 'R' as service_type, R.repair_id, R.description FROM RepairTypes R;
```

API List

APIs

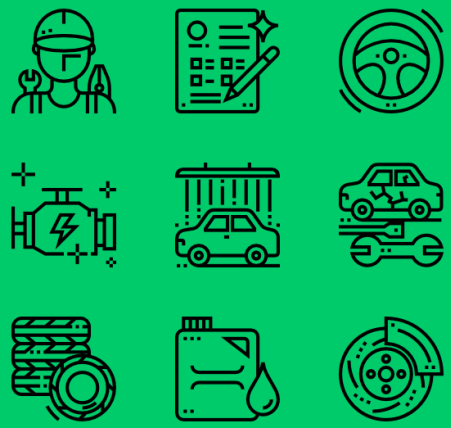
```
import javafx.application.Application;
import javafx.scene.Scene;
import javafx.stage.Stage;
import javafx.scene.Parent;
import javafx.fxml.FXMLLoader;

import java.sql.Connection;
import java.sql.DriverManager;
import java.sql.SQLException;
import java.util.logging.Level;
import java.util.logging.Logger;

import javafx.scene.control.cell.*;
import javafx.event.EventHandler;
import javafx.scene.control.TableColumn;
import javafx.scene.control.TableColumn.CellEditEvent;
import javafx.util.converter.DefaultStringConverter;
import java.util.HashMap;
import javafx.event.ActionEvent;
import javafx.scene.control.TableCell;
import javafx.beans.property.SimpleBooleanProperty;
import javafx.beans.value.ObservableValue;
import java.util.Optional;
import javafx.scene.image.ImageView;
import javafx.scene.image.Image;
import javafx.util.Callback;

import javafx.beans.property.*;
```

Architecture | GUI Design | Function & Man Pages | Data Design | APIs | **Assumption & Design Decision**

Assumption & Design Decision

Assumption & Design Decision

User can not add new ’description’ (Maintenance Type or Repair Type) or delete from GUI



Thank You