



**South Ural
State University**

**National Research
University**

MINISTRY OF SCIENCE AND HIGHER EDUCATION OF THE
RUSSIAN FEDERATION

Federal State Autonomous Educational
Institution of Higher Education

“South Ural State University (National Research University)”

School of Electrical Engineering and Computer Science

Department of Electronic Computing Machines

DEVELOPMENT OF THE ELECTRONIC VEHICLE REGISTRATION SYSTEM IN IRAQ

**For the master graduate qualification work of
A student of the group KE-228: Al-karawi Anas Qays
Supervisor: D.V. Topolsky, PhD, Associate Professor**

Introduction

This project includes the creation of a website and a program that solves the problem of vehicle registration in Iraq.



Relevance

- ❑ The Iraqis used to register their vehicles and transfer ownership by old retarded methods .
- ❑ Electronic vehicle registration system can reduce the number of employees working in the traffic department.
- ❑ Vehicle registration in the classic non-electronic system considered as waste of time and needed to make hard copies of the information of the buyer and the seller and the vehicle.

Goal and objectives

Purpose :

The purpose of the research is to design and develop websites that helps people to register their vehicles and transfer the ownership of the vehicle.

To achieve this goal, it is necessary to solve the following tasks:

1. Study analogue overview concerns the web design of vehicle registration.
2. Selecting the tools for developing website.
3. Formation of system requirements.
4. Website development.
5. Testing.

Overview of analogues

1.EVREG

2.UTAH (Division of Motor Vehicles)

3.AUTOREG

Feature	EVREG	UTAH DMV	AUTOREG
payment for online	Yes	Yes	Yes
Automatic Number Plate Recognition	No	Yes	No
Establishing and maintaining a reliable data base	Yes	Yes	Yes
Cost Rate	\$ 21-30	\$ 80-150	\$ 60-72
country	Taraba territory	Utah State	Nigeria

Technologies and development tools

Selected MS SQL Server 2019 as databases .The database.



Selected as the programming language –C#



Used in web application – HTML Code and Css Styles using bootstrap



The device was used for barcode readers – wireless-bt4.0 Bar Code Gun 2D Barcode



Definition of System Requirements

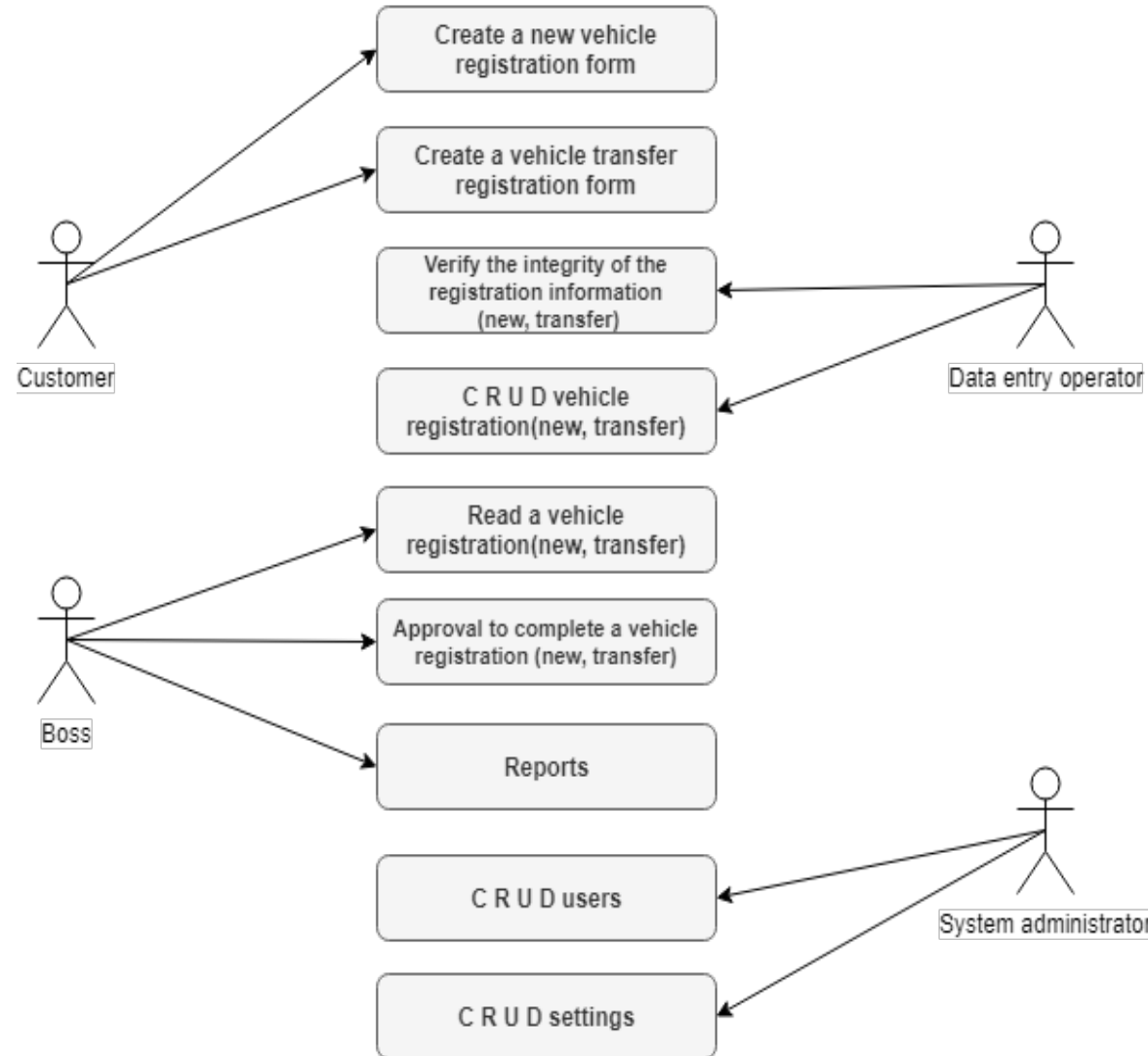
The following basic components are required to implement the project objectives:

- ❑ Filling the information of the vehicle on the website requires customer's authorization.
- ❑ Storing the customer's information in the database.
- ❑ Full control (Create , read , Update and delete) Vehicle information and customers .
- ❑ Full control (Create , read , Update and delete) user.
- ❑ Print registration information reports.
- ❑ Ability of Searching for old vehicle registration information.
- ❑ Add information of the vehicle and customers by QR-code.

Usage Diagram Vehicle Registration System Cases

System modules:

- Boss
- Data entry operator
- System administrator
- Customer

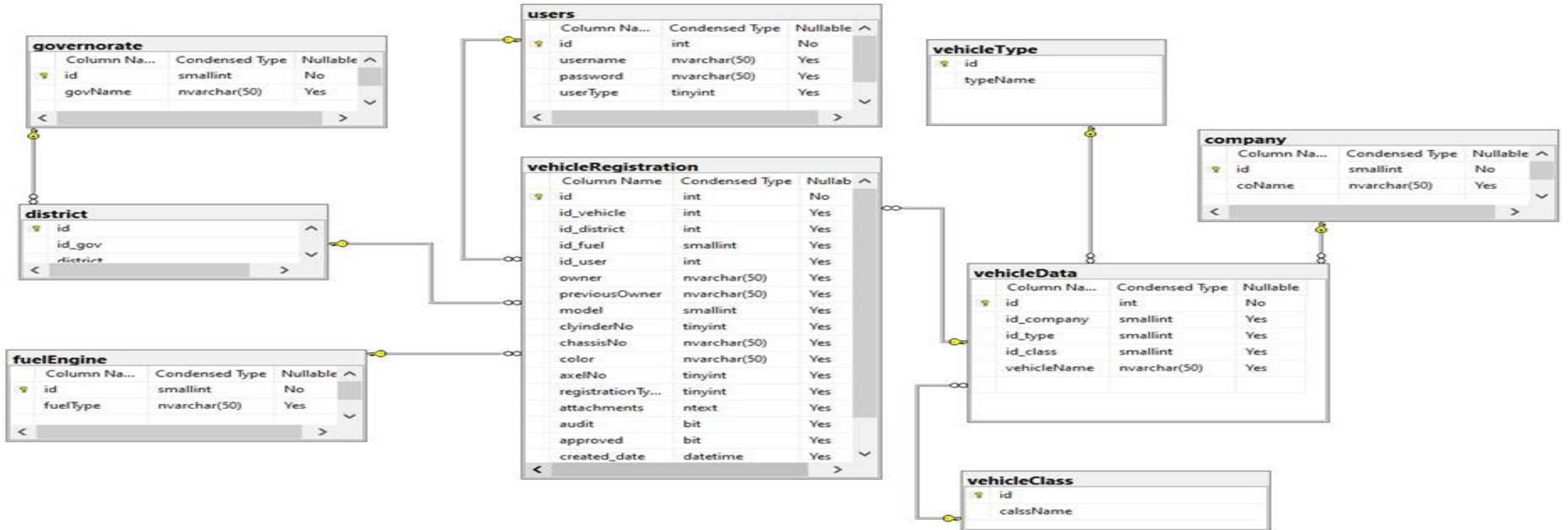


(CRUD)
create, read, update, and delete

Definition of non-functional system requirements

- ❑ For the convenience of the website user, it need to develop an interface even a non-experienced user can deal and make use it.
- ❑ The program must contain information such as the customer's photo, place of residence, type of vehicle, color, and chassis number, etc.
- ❑ The duty of the Boss is very important in verifying the information of vehicles and customers to give the final approval on the registration of vehicle.

Tables and relationships diagram



Development The website

https://localhost:44395
Maps access to edu.susu.r... Электронный ЮУр... Repl.it - MurkyKindl... Google Dri... - ملفاتي Citrix Receiver Zimbra: Входящие GitHub · Wh

Vehicle registration from

Register a new vehicle or transfer vehicle ownership using the form below

Registration Type

Vehicle transfer

Owner

anas qays

Previous owner

mohammad safaa

District

Al-Zafraniya

Chassis No.

las19811881av

Vehicle mark

Sonata

Model

1980

Cylinder No.

4

Axel No.

2

Fuel type

Gasoline

Color

white

Print

Results

Form of Vehicle transfer



Owner:

Previous owner:

District:

Chassis No.:

Vehicle mark:

Model:

Cylinder No.:

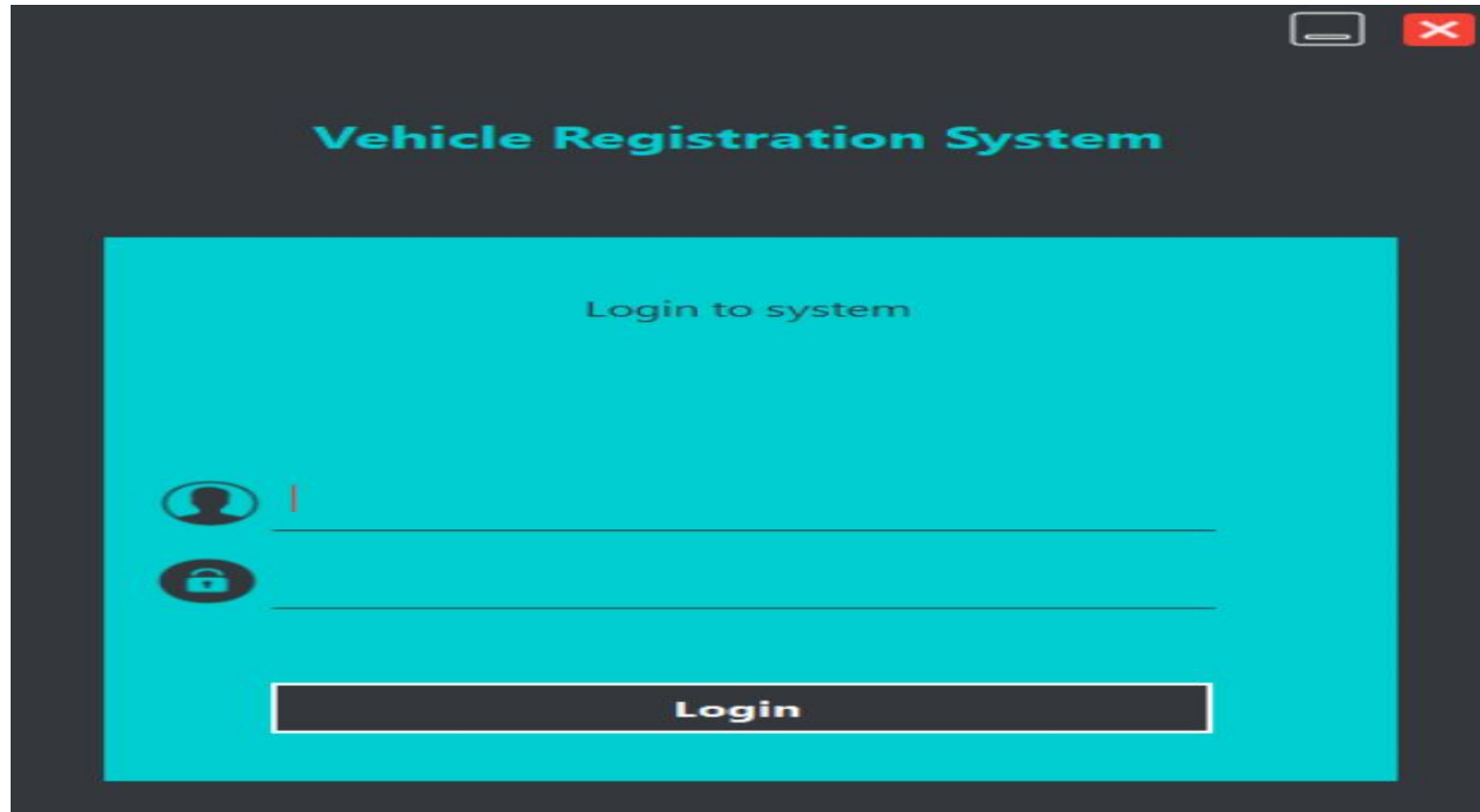
Axel No.:

Fuel type:

Color:

Login sample

- 1.Data entry operator
2. System administrator
- 3.Boss



The screenshot shows a web application window titled "Vehicle Registration System". The main content area is light blue and contains the text "Login to system". Below this, there are two input fields: the first is preceded by a person icon and the second by a lock icon. A dark blue "Login" button is positioned at the bottom of the form area. The window has standard OS window controls (minimize, maximize, close) in the top right corner.

1. Vehicle Registration System Development

frmMain - [Vehicle Registration]

File Vehicle Tools View Windows

Registration | Report registration type | Report registration status | Settings | Users | Logout

Reload | 0 of 0 | Add new | Transfer | Save Data | Delete | Read QR Code | Search

Add / Edit Users

Registration Type: Owner: Previous owner: Distirct: Chassis No.: Vehicle mark: Model:

Color: Cylinder No.: Axels No.: Fuel type: Attachments: Show attachments Audited Approved

No.	Registration type	Owner	Previous owner	Governorate	District	Chassis No.	Company	Vehicle mark	Model	Color	Type
-----	-------------------	-------	----------------	-------------	----------	-------------	---------	--------------	-------	-------	------

Welcome user1

Activate Windows
Go to Settings to activate Windows

Data Entry information by QR-code

frmMain - [Vehicle Registration]

File Vehicle Tools View Windows

Registration | Report registration type | Report registration status | Settings | Users | Logout

Reload | 20 of 20 | Add new | Transfer | Save Data | Delete | Read QR Code | mad safaa;1980;4;las19811881av;white;2;2;2;0;0 | Search

Add / Edit Users

Registration Type	Owner	Previous owner	Distriict	Chassis No.	Vehicle mark	Model
Vehicle transfer	anas qays	mohammad safaa	Al-Zafraniya	las19811881av	Sonata	1980
Color	Cylinder No.	Axels No.	Fuel type	Attachments	Audited	Approved
white	4	2	Gasoline	Add attachments	<input type="checkbox"/>	<input type="checkbox"/>

Search for a registered vehicle

frmMain - [Vehicle Registration]

File Vehicle Tools View Windows

Registration | Report registration type | Report registration status | Settings | Users | Logout

Reload | 1 of 1 | Add new | Transfer | Save Data | Delete | Read QR Code | cwcwd2 | Search

Add / Edit Users

Registration Type: Vehicle transfer
Owner: karar
Previous owner: mahar
District: Rasafh
Chassis No.: cwcwd2
Vehicle mark: Sonata
Model: 2020
Color: white
Cylinder No.: 4
Axels No.: 2
Fuel type: Gasoline
Attachments: Show attachments
 Audited
 Approved

No.	Registration type	Owner	Previous owner	Governorate	District	Chassis No.	Company	Vehicle mark	Model	Color	Type
1	Vehicle transfer	karar	mahar	Baghdad	Rasafh	cwcwd2	Hyundai	Sonata	2020	white	convertibles

2. Modify registered user and add a new user

The screenshot displays a web application interface for user management. The main window is titled 'Users' and contains a table of registered users and a form for adding or editing users.

No.	User name	password	User type
1	user1	pass1	Data entry operator
2	user2	pass2	System administrator
3	user33	pass33	Boss

The 'Add / Edit Users' form includes the following fields:

- User name: user1
- Password: masked with dots
- User type: Data entry operator (selected from a dropdown menu)

The interface also features a navigation bar with options like 'Registration', 'Report registration type', 'Report registration status', 'Settings', and 'Users'. A 'Logout' button is visible in the top right corner. The status bar at the bottom left shows 'Welcome user2'.

Add state and district (address)

The screenshot shows a web application interface for managing districts. The main window is titled "Settings" and has several tabs: "Vehicle Class", "Vehicle type", "Company", "Fuel Engine", "Vehicle Data", "Governorate", and "District". The "District" tab is currently selected. Below the tabs, there is a control bar with "Reload", "6 of 30", "Add new", "Save Data", and "Delete" buttons. The main content area is divided into two parts: a form on the left for adding or editing a district, and a table on the right listing existing districts.

Add / Edit District Form:

- Governorate: Baghdad
- District: Al-Zatraniya

Districts Table:

No.	Governorate	Districts
1	Baghdad	Adhamiyah
2	Baghdad	karkh
3	Baghdad	Rasafh
4	Baghdad	Karrada
5	Baghdad	Mansour
6	Baghdad	Al-Zatraniya
7	Baghdad	Dora
8	Baghdad	Al-Jadriya
9	Baghdad	Hayy Aoor
10	Erbil	Jolly Lighthouse
11	Erbil	Tarawa
12	Erbil	Housing
13	Erbil	Ziran
14	Erbil	Military District
15	Najaf	Haidariya district

3. Vehicle registration approval

frmMain - [Vehicle Registration]

File Vehicle Tools View Windows

Registration | Report registration type | Report registration status | Settings | Users | Logout

Reload | 3 of 19 | Add new | Transfer | Save Data | Delete | Read QR Code | Search

Add / Edit Users

Registration Type: **Vehicle transfer** | Owner: **karar** | Previous owner: **mahar** | Distrikt: **Rasafh** | Chassis No.: **cwcvd2** | Vehicle mark: **Sonata** | Model: **2020**

Color: **white** | Cylinder No.: **2** | Axels No.: **2** | Fuel type: **Biodiesel** | Attachments: **Show attachments** | Audited | Approved

Model	Color	Type	Class	Cylinders No.	Axels No.	Fuel type	Attachments	Audited	Approved	User name	Created date
2003	Black	convertibles	Pick Up	4	2	Biodiesel		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	user1	3/9/2022 2:49 ...
2007	orang	taxi	Coupe	2	2	Diesel		<input type="checkbox"/>	<input type="checkbox"/>	user1	3/9/2022 2:53 ...
2020	white	convertibles	Pick Up	2	2	Biodiesel	C:\Users\Alha...	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	user33	3/9/2022 3:05 ...
2008	red	taxi	Coupe	4	6	Gasoline	C:\Users\Alha...	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	user1	3/9/2022 3:19 ...
2016	Black	convertibles	Pick Up	4	2	Biodiesel		<input type="checkbox"/>	<input type="checkbox"/>	user1	3/9/2022 9:22 ...
2016	red	Car	Saloon	4	2	Biodiesel		<input type="checkbox"/>	<input type="checkbox"/>	user33	3/9/2022 9:25 ...
2014	yallo	convertibles	Pick Up	4	4	Biodiesel		<input type="checkbox"/>	<input type="checkbox"/>	user1	3/9/2022 9:36 ...
2013	orang	convertibles	Pick Up	2	2	Gasoline		<input type="checkbox"/>	<input type="checkbox"/>	user1	3/9/2022 9:45 ...
2008	white	Car	Saloon	6	4	Gasoline		<input type="checkbox"/>	<input type="checkbox"/>	user1	5/4/2022 7:17 ...
2018	red	taxi	Coupe	1	1	Gasoline		<input type="checkbox"/>	<input type="checkbox"/>	user33	3/9/2022 9:49 ...
2003	white	convertibles	Pick Up	2	2	Biodiesel		<input type="checkbox"/>	<input type="checkbox"/>	user1	3/15/2022 2:04...
2007	rad	Car	Saloon	2	2	Biodiesel	C:\Users\Alha...	<input type="checkbox"/>	<input type="checkbox"/>	user33	3/15/2022 2:48...

Registration report

Report registration status

Vehicle registration system Report of registration status

Total: 19 Audited: 7 Unaudited: 12 Approved: 7 Unapproved: 12

No	Owner	Vehicle Name	Company Name	Cylinder No.	Axel No.	Model	Chassis No.	Fuel Type	Audit	Approved
1	mohammad	Sorrento	Kia	2	2	2007	dfdff432d2	Diesel		
2	baha	Nero	Kia	4	2	2016	rvfv	Biodiesel		
3	anor	Sonata	Hyundai	4	4	2014	rvfv1	Biodiesel		
4	olka	Sonata	Hyundai	2	2	2013	n3223	Gasoline		
5	jasam	Nero	Kia	6	4	2008	rvfv246	Gasoline		
6	samar	Sorrento	Kia	1	1	2018	dfe1	Gasoline		
7	shahad	Sonata	Hyundai	2	2	2003	cxhuih6554	Biodiesel		
8	mohammad ali	Sonata	Hyundai	4	4	2019	ch123456	Gasoline		
9	Yasser	Sonata	Hyundai	2	4	2021	wd2eef4v	Gasoline		
10	anas	Sorrento	Kia	4	6	1980	las19811881av	Gasoline		
11	omer	Sorrento	Kia	4	2	2003	xdvzdgegd	Ethanol		
12	jafer	Sonata	Hyundai	4	2	2016	rvfv767	Biodiesel	False	False
13	omer	Sonata	Hyundai	4	2	2003	rvfv	Biodiesel	True	True
14	karar	Sonata	Hyundai	2	2	2020	cwcwd2	Biodiesel	True	True
15	ali	Sorrento	Kia	4	6	2008	1212	Gasoline	True	True
16	ali mohammad	Nero	Kia	2	2	2007	1212	Biodiesel	True	True
17	hussan	Sorrento	Kia	4	2	2010	www3mnt	Diesel	True	True
18	marwan	Sorrento	Kia	4	2	2017	wdb76u373	Gasoline	True	True
19	flayhh	Sonata	Hyundai	4	4	1991	bejfe6r63r7	Gasoline	True	True

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Report registration type

Vehicle registration system Report of registration type

Total: 19 Vehicle registration: 6 Vehicle transfer: 13

No	Owner	Vehicle Name	Company Name	Cylinder No.	Axel No.	Model	Chassis No.	Fuel Type	Registration type
1	ali	Sorrento	Kia	4	6	2008	1212	Gasoline	Vehicle registration
2	anor	Sonata	Hyundai	4	4	2014	rvfv1	Biodiesel	Vehicle registration
3	olka	Sonata	Hyundai	2	2	2013	n3223	Gasoline	Vehicle registration
4	hussan	Sorrento	Kia	4	2	2010	www3mnt	Diesel	Vehicle registration
5	Yasser	Sonata	Hyundai	2	4	2021	wd2eef4v	Gasoline	Vehicle registration
6	omer	Sorrento	Kia	4	2	2003	xdvzdgegd	Ethanol	Vehicle registration
7	anas	Sorrento	Kia	4	6	1980	las19811881av	Gasoline	Vehicle transfer
8	marwan	Sorrento	Kia	4	2	2017	wdb76u373	Gasoline	Vehicle transfer
9	flayhh	Sonata	Hyundai	4	4	1991	bejfe6r63r7	Gasoline	Vehicle transfer
10	jasam	Nero	Kia	6	4	2008	rvfv246	Gasoline	Vehicle transfer
11	samar	Sorrento	Kia	1	1	2018	dfe1	Gasoline	Vehicle transfer
12	shahad	Sonata	Hyundai	2	2	2003	cxhuih6554	Biodiesel	Vehicle transfer
13	ali mohammad	Nero	Kia	2	2	2007	1212	Biodiesel	Vehicle transfer
14	mohammad ali	Sonata	Hyundai	4	4	2019	ch123456	Gasoline	Vehicle transfer
15	jafer	Sonata	Hyundai	4	2	2016	rvfv767	Biodiesel	Vehicle transfer
16	baha	Nero	Kia	4	2	2016	rvfv	Biodiesel	Vehicle transfer
17	omer	Sonata	Hyundai	4	2	2003	rvfv	Biodiesel	Vehicle transfer
18	mohammad	Sorrento	Kia	2	2	2007	dfdff432d2	Diesel	Vehicle transfer
19	karar	Sonata	Hyundai	2	2	2020	cwcwd2	Biodiesel	Vehicle transfer

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Testing

	Enter Data	Expected result	Result obtained
Vehicle Registration through the website	The customer creates a process of registration or transfer of ownership of the vehicle	a special information barcode will appear	The test was successfully passed
Add a new user	System Administrator in the main menu	clicks the Settings button and can add, modify and delete the user	The test was successfully passed
Search for a Vehicle Registration	Data entry operator in the main menu	clicks system on the search button, writes a number Chassis No	The test was successfully passed
Approved and reviewed to Vehicle Registration	Boss in the main menu	click on the approved and reviewed button and the approval will approved and reviewed	The test was successfully passed
Add information by barcode	Data entry operator in the main menu	the system user clicks the qr code Button, and writes the barcode	The test was successfully passed
Exit from the program	The user is in the main menu	the system user clicks the exit button of the program, and Closes	The test was successfully passed

Conclusions

The problem of vehicle registration in Iraq was studied and this problem was solved.

This project promises to solve the problem current vehicle registration and replace it with a modern electronic web-based registration system.



**Thanks for
your attention.**

