

VIETNAM GENERAL CONFEDERATION OF LABOR

TON DUC THANG UNIVERSITY

FACULTY OF INFORMATION TECHNOLOGY

---

# Final Project

**Topic: Car Distributor Inventory Management Software**

---

**Subject: .Net Technology**

*Students perform:*

Tran Khai Hoang (520H0635)  
Nguyen Gia Khiem (520H0464)

*Advising teacher:*

Mr. Nguyen Ngoc Phien

March 11, 2023

# Contents

<b>1</b>	<b>Summary</b>	<b>2</b>
<b>2</b>	<b>Introduction</b>	<b>2</b>
2.1	Project description . . . . .	2
2.1.1	Function of Manager : . . . . .	2
2.1.2	Function of Employee : . . . . .	2
<b>3</b>	<b>Design</b>	<b>3</b>
3.1	Database design . . . . .	3
3.1.1	Diagram . . . . .	3
3.1.2	Tables . . . . .	3
<b>4</b>	<b>Demo Project</b>	<b>6</b>
4.1	Functions of Manager . . . . .	7
4.1.1	Employee Management . . . . .	7
4.1.2	Warehouse Management . . . . .	8
4.1.3	Partner Management . . . . .	8
4.1.4	Statistics . . . . .	9
4.2	Functions of Employee . . . . .	10
4.2.1	Inventory Management . . . . .	10
4.2.2	Personal Information Management . . . . .	11
<b>5</b>	<b>Installation</b>	<b>12</b>
5.1	Environment Setup . . . . .	12
5.2	Database Connection . . . . .	12
5.3	Run Application . . . . .	13

# 1 Summary

In this project, we will build software and using Windows Forms C Sharp for a company selling cars. The report contains:

- Introduction
- Design
- Demo project
- Installation guide

## 2 Introduction

### 2.1 Project description

In order to digitize the process of inventory management and stock in-out activities, a car distribution company has requested the development of a software to manage all related tasks. The software allows (1) the manager/administrator and (2) employees to interact with each other on the same system.

#### 2.1.1 Function of Manager :

1. Employee Management: The manager has the function to add employee accounts to the system, and each account will have a login name which is the characters before the @ symbol of the employee's email, and the default password will be set as '123456'. Additionally, manager can view the list of employees and the performance of each individual.
2. Warehouse management: Adding new products to the warehouse, creating and printing receipts for stock in and stock out activities to import and export products.
3. Partner management: Adding new car suppliers and dealers, viewing detailed information of each partner, and transaction history.
4. Statistics: Viewing the number of employees, the quantity of goods in the warehouse, the total revenue, monthly revenue, employee performance, popular products, etc.
5. Manager can also perform all the functions of an employee.

#### 2.1.2 Function of Employee :

1. Employees can create and print received note, review the list of receipts they have created, print received note and receipt lists. After successfully creating a receipt, the quantity of products in the warehouse will be updated based on the quantity on the receipt.
2. Employees can create and print delivery notes, review their list of created delivery notes, and print lists of delivery notes. After successfully creating a delivery note, the quantity of products in stock will be updated based on the quantity on the delivery note.

3. Personal information management: Employees can view and edit their personal information, as well as view statistics on the invoices they have created for inventory input and output.

## 3 Design

### 3.1 Database design

#### 3.1.1 Diagram

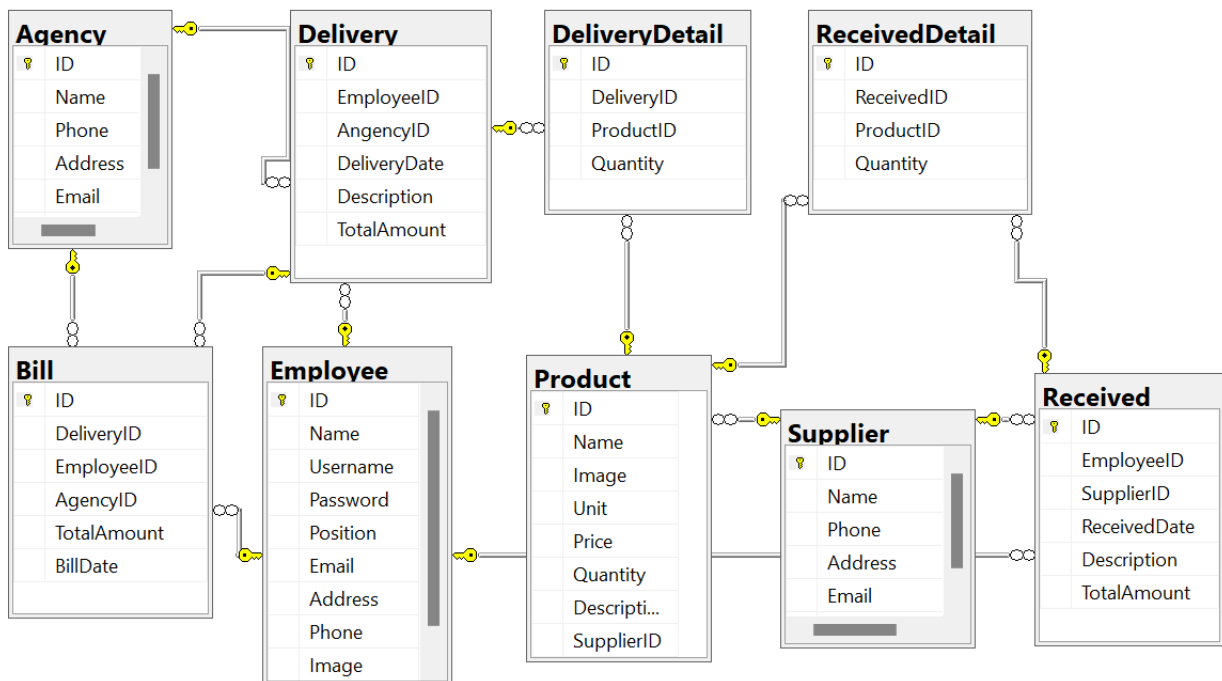


Figure 1: Physical Level Database Diagram

#### 3.1.2 Tables

Agency			
Column Name	Data Type	Allow Nulls	
ID	nvarchar(10)	<input type="checkbox"/>	
Name	nvarchar(MAX)	<input checked="" type="checkbox"/>	
Phone	nvarchar(10)	<input checked="" type="checkbox"/>	
Address	nvarchar(MAX)	<input checked="" type="checkbox"/>	
Email	nvarchar(50)	<input checked="" type="checkbox"/>	
Image	image	<input checked="" type="checkbox"/>	
		<input type="checkbox"/>	

Figure 2: Table Agency

Bill			
	Column Name	Data Type	Allow Nulls
🔑	ID	nvarchar(10)	<input type="checkbox"/>
	DeliveryID	nvarchar(10)	<input checked="" type="checkbox"/>
	EmployeeID	nvarchar(10)	<input checked="" type="checkbox"/>
	AgencyID	nvarchar(10)	<input checked="" type="checkbox"/>
	TotalAmount	money	<input checked="" type="checkbox"/>
	BillDate	date	<input checked="" type="checkbox"/>
			<input type="checkbox"/>

Figure 3: Table Bill

Delivery			
	Column Name	Data Type	Allow Nulls
🔑	ID	nvarchar(10)	<input type="checkbox"/>
	EmployeeID	nvarchar(10)	<input checked="" type="checkbox"/>
	AgencyID	nvarchar(10)	<input checked="" type="checkbox"/>
	DeliveryDate	date	<input checked="" type="checkbox"/>
	Description	nvarchar(MAX)	<input checked="" type="checkbox"/>
	TotalAmount	money	<input checked="" type="checkbox"/>
			<input type="checkbox"/>

Figure 4: Table Delivery

DeliveryDetail			
	Column Name	Data Type	Allow Nulls
🔑	ID	nvarchar(10)	<input type="checkbox"/>
	DeliveryID	nvarchar(10)	<input checked="" type="checkbox"/>
	ProductID	nvarchar(10)	<input checked="" type="checkbox"/>
	Quantity	int	<input checked="" type="checkbox"/>
			<input type="checkbox"/>

Figure 5: Table Delivery Detail

Employee			
	Column Name	Data Type	Allow Nulls
🔑	ID	nvarchar(10)	<input type="checkbox"/>
	Name	nvarchar(MAX)	<input checked="" type="checkbox"/>
	Username	nvarchar(50)	<input checked="" type="checkbox"/>
	Password	nvarchar(50)	<input checked="" type="checkbox"/>
	Position	nvarchar(50)	<input checked="" type="checkbox"/>
	Email	nvarchar(50)	<input checked="" type="checkbox"/>
	Address	nvarchar(MAX)	<input checked="" type="checkbox"/>
	Phone	nvarchar(10)	<input checked="" type="checkbox"/>
	Image	image	<input checked="" type="checkbox"/>
			<input type="checkbox"/>

Figure 6: Table Employee

Product			
	Column Name	Data Type	Allow Nulls
🔑	ID	nvarchar(10)	<input type="checkbox"/>
	Name	nvarchar(MAX)	<input checked="" type="checkbox"/>
	Image	image	<input checked="" type="checkbox"/>
	Unit	nvarchar(50)	<input checked="" type="checkbox"/>
	Price	money	<input checked="" type="checkbox"/>
	Quantity	int	<input checked="" type="checkbox"/>
	Description	nvarchar(MAX)	<input checked="" type="checkbox"/>
	SupplierID	nvarchar(10)	<input checked="" type="checkbox"/>
			<input type="checkbox"/>

Figure 7: Table Product

Received			
	Column Name	Data Type	Allow Nulls
🔑	ID	nvarchar(10)	<input type="checkbox"/>
	EmployeeID	nvarchar(10)	<input checked="" type="checkbox"/>
	SupplierID	nvarchar(10)	<input checked="" type="checkbox"/>
	ReceivedDate	date	<input checked="" type="checkbox"/>
	Description	nvarchar(MAX)	<input checked="" type="checkbox"/>
	TotalAmount	money	<input checked="" type="checkbox"/>
			<input type="checkbox"/>

Figure 8: Table Received

ReceivedDetail			
	Column Name	Data Type	Allow Nulls
🔑	ID	nvarchar(10)	<input type="checkbox"/>
	ReceivedID	nvarchar(10)	<input checked="" type="checkbox"/>
	ProductID	nvarchar(10)	<input checked="" type="checkbox"/>
	Quantity	int	<input checked="" type="checkbox"/>
			<input type="checkbox"/>

Figure 9: Table Received Detail

Supplier			
	Column Name	Data Type	Allow Nulls
🔑	ID	nvarchar(10)	<input type="checkbox"/>
	Name	nvarchar(MAX)	<input checked="" type="checkbox"/>
	Phone	nvarchar(10)	<input checked="" type="checkbox"/>
	Address	nvarchar(MAX)	<input checked="" type="checkbox"/>
	Email	nvarchar(50)	<input checked="" type="checkbox"/>
	Image	image	<input checked="" type="checkbox"/>
			<input type="checkbox"/>

Figure 10: Table Supplier

## 4 Demo Project

Firstly, in order to use the functions of the software, we need to log in.



Figure 11: Login to Software

After successfully logging in, the interface of the software will appear.

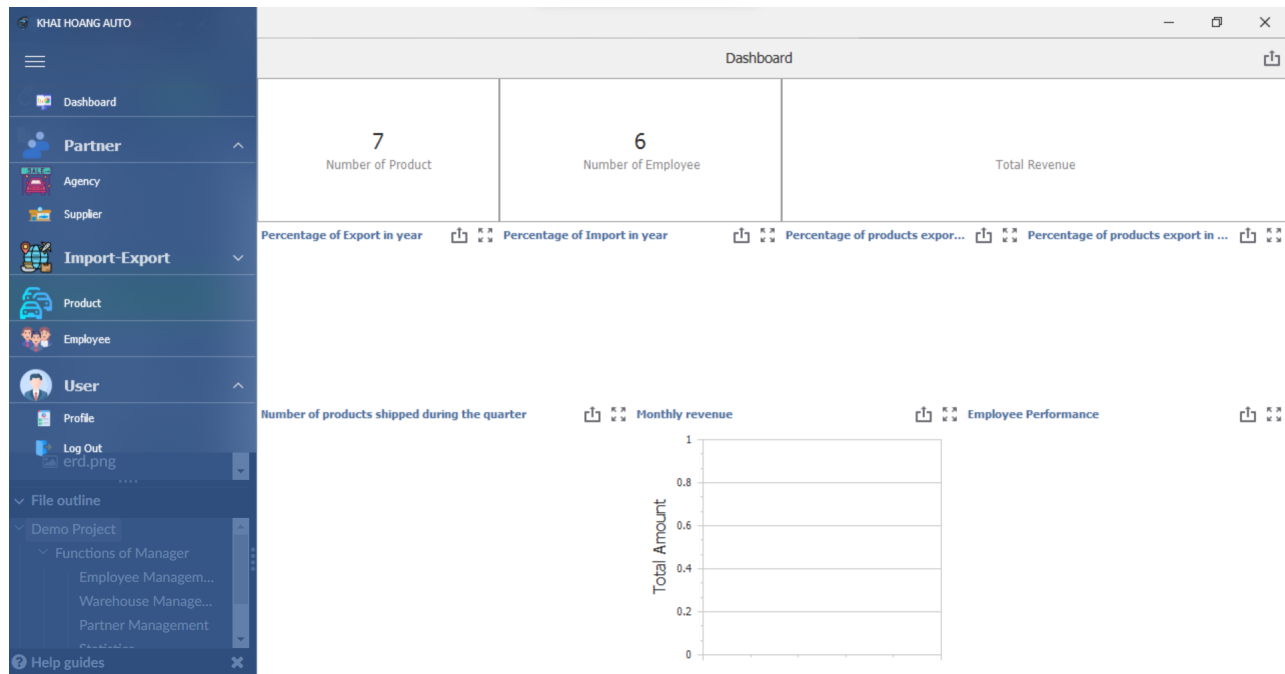


Figure 12: Interface of Software

## 4.1 Functions of Manager

### 4.1.1 Employee Management

Select the employee icon on the sidebar to access the employee management function.

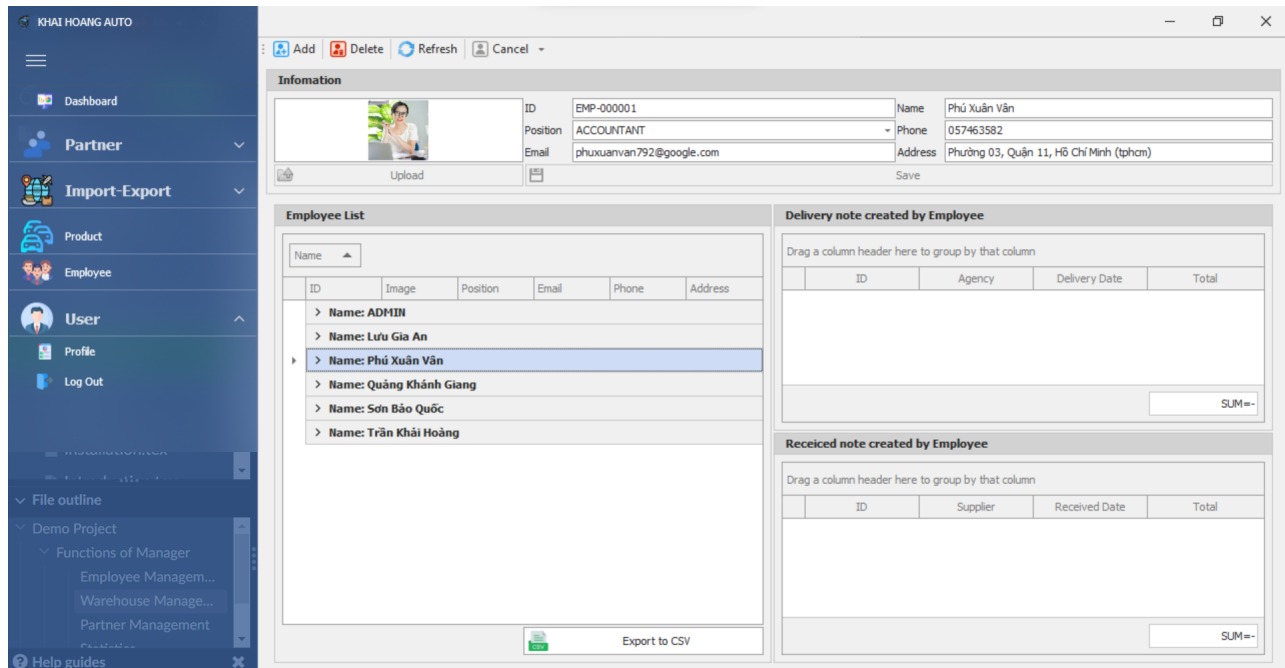


Figure 13: Interface of Employee management function



### 4.1.2 Warehouse Management

Select the product icon on the sidebar to access the warehouse management function.

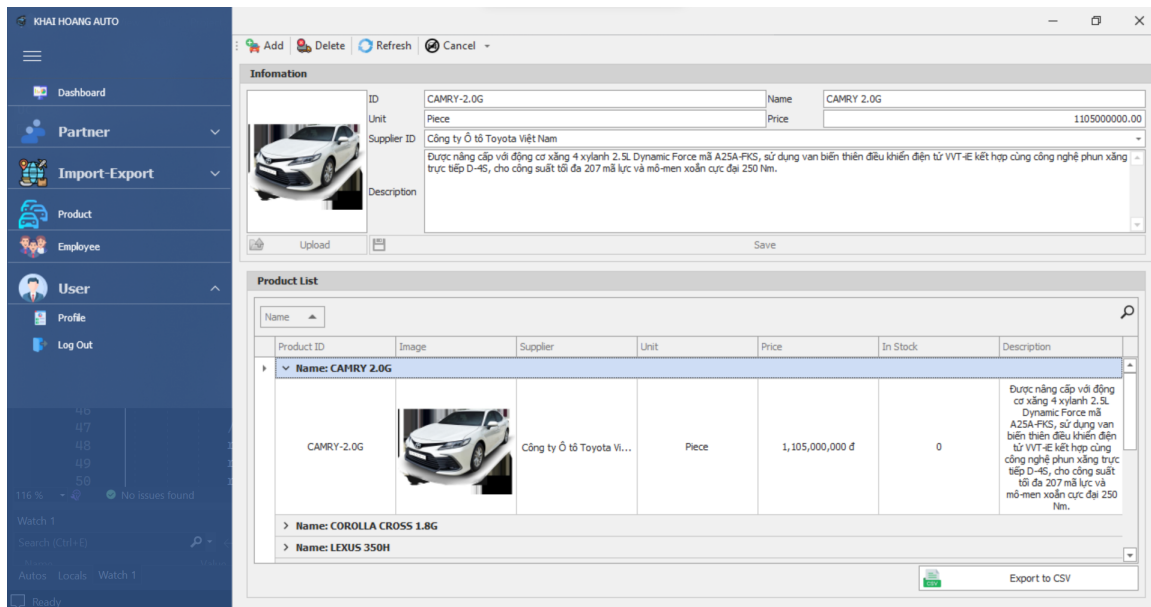


Figure 14: Interface of Warehouse management function

### 4.1.3 Partner Management

Select the dashboard icon on the sidebar to access the partner management function.

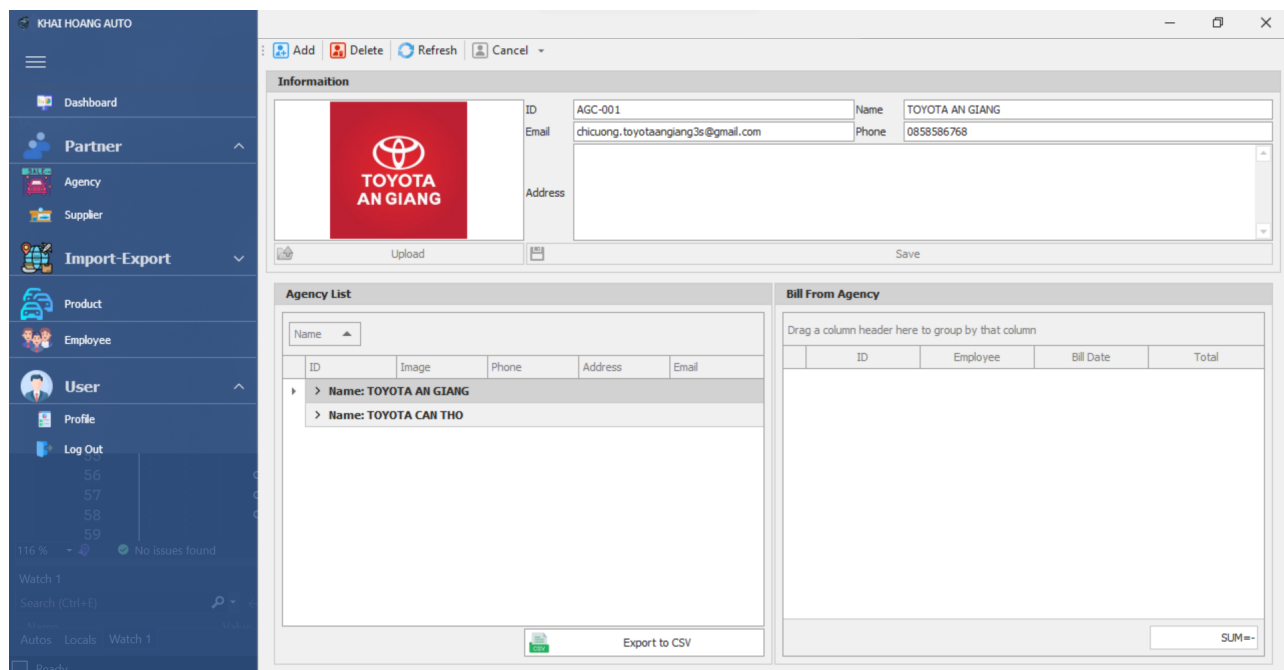


Figure 15: Interface of Agency Management function

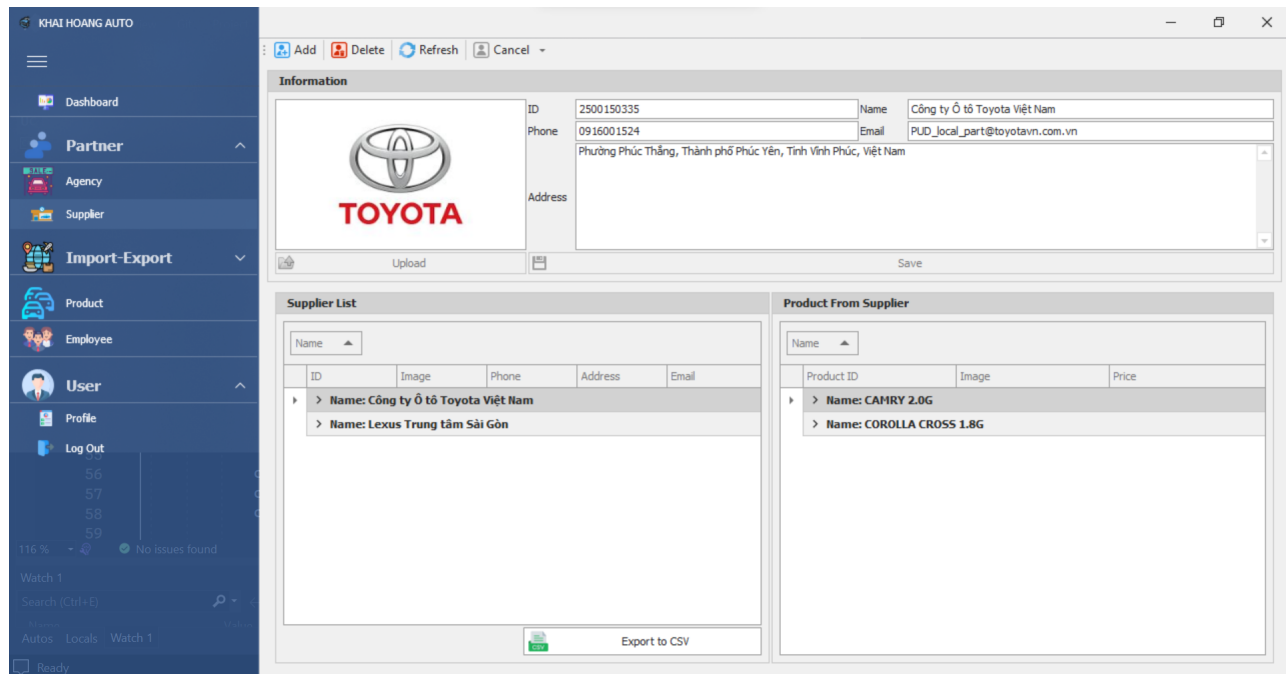


Figure 16: Interface of Supplier Management function

#### 4.1.4 Statistics

Select the dashboard icon on the sidebar to access the statistics function.

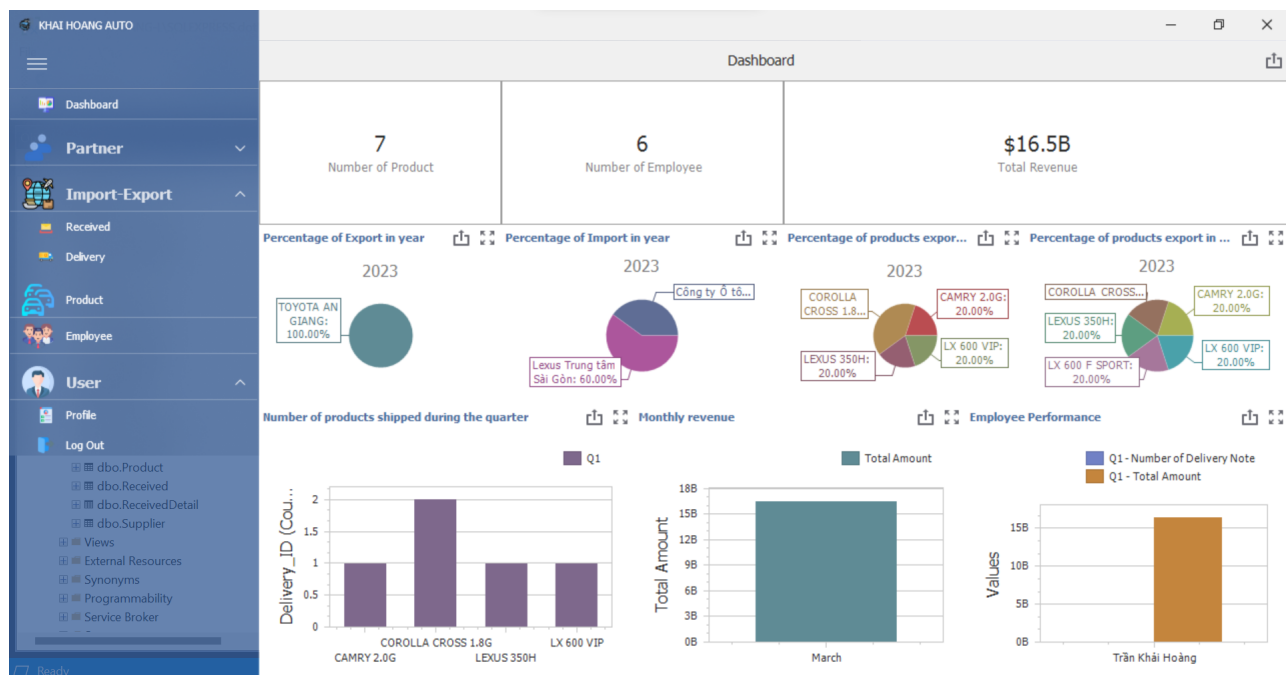


Figure 17: Interface of Statistics function

## 4.2 Functions of Employee

### 4.2.1 Inventory Management

Select the Received icon or Delivery icon on the sidebar to access the Inventory Management function.

The screenshot shows the 'Received Management' interface. On the left is a sidebar with navigation links. The main content area has a top bar with 'Create Received Note', 'Delete', 'Refresh', and 'Cancel' buttons. Below this is an 'Information' section with input fields for ID (RID-986146), Received Date (3/11/2023), Supplier (Công ty Ô tô Toyota Việt Nam), and Description (Import cars). A table below shows the received items:

ID	Received ID	Product ID	Quantity	Delete
RDT-412456	RID-986146	COROLLA CROSS 1.8G	3	
RDT-89740	RID-986146	CAMRY 2.0G	3	
		Choose Product	Choose Quantity	

Below the table are 'Add Product' and 'Submit' buttons. At the bottom, there's a 'Received Note List' section with a table showing details for the received items:

ID	Supplier	Employee	Received Date	Description	Total Amount
RID-986146	Công ty Ô tô Toyota Việt Nam	Trần Khải Hoàng	3/11/2023	Import cars	5,580,000,000 đ

At the bottom of the interface are 'Print Received' and 'Export to CSV' buttons.

Figure 18: Interface of Received Management function

The screenshot shows the 'RECEIVED NOTE' printout. It features the KHAI HOANG AUTO logo and a title 'RECEIVED NOTE'. The form displays details for the received items, including Supplier (Công ty Ô tô Toyota Việt Nam), Address (Phường Phúc Thắng, Thành phố Phúc Yên, Tỉnh Vĩnh Phúc, Việt Nam), Phone (0916001524), Employee (Trần Khải Hoàng), Received ID (RID-986146), Received Date (3/11/2023 12:00:00 AM), and Description (Import cars). Below this is a table showing the items received, their quantities, unit prices, and total amounts.

No.	Product Name	Quantity	Unit Price	Total
1	COROLLA CROSS 1.8G	3	755,000,000 đ	2,265,000,000 đ
2	CAMRY 2.0G	3	1,105,000,000 đ	3,315,000,000 đ
<b>Total</b>				<b>5,580,000,000 đ</b>

Figure 19: Print Received Note

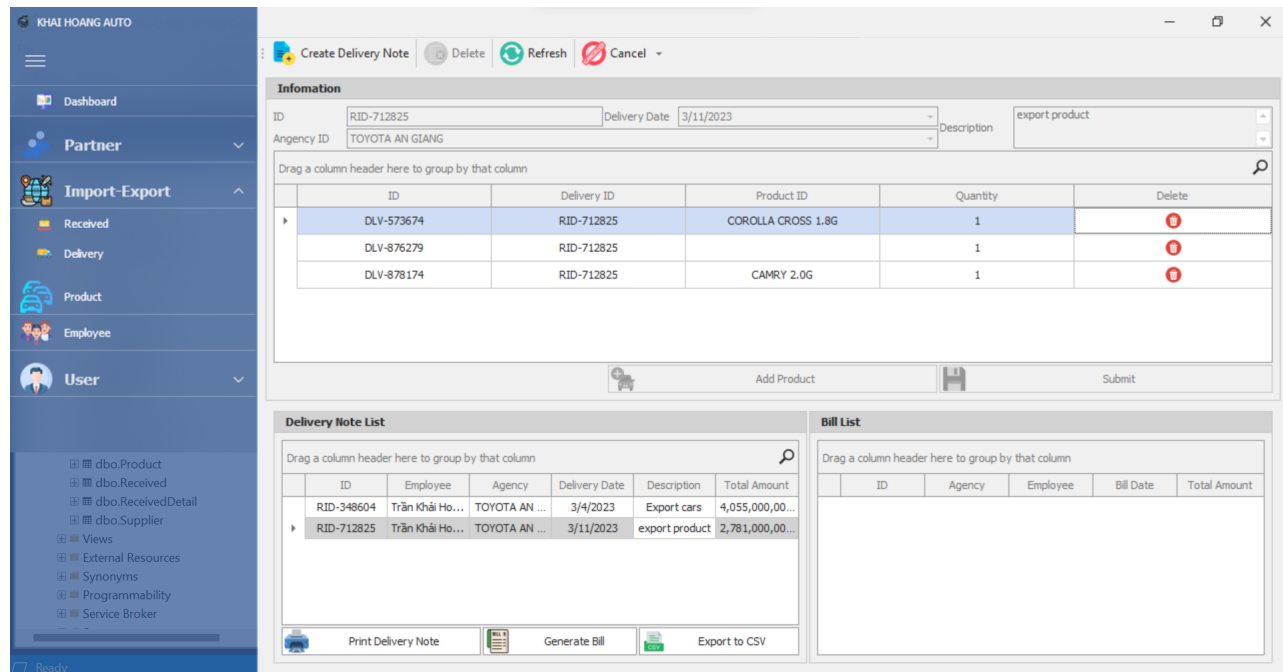



Figure 20: Interface of Delivery Management function



## DELIVERY NOTE

**Agency:** TOYOTA AN GIANG

**Address:** 1785, Trần Hưng Đạo, Mỹ Quý,  
Long Xuyên, An Giang.

**Phone:** 0858586768

**Employee:** Trần Khải Hoàng

**Delivery ID:** RID-348604

**Delivery Date:** 3/4/2023 12:00:00 AM

**Description:** Export cars

No.	Product Name	Quantity	Unit Price	Total
1	LEXUS 350H	1	3,300,000,000 đ	3,300,000,000 đ
2	COROLLA CROSS 1.8G	1	755,000,000 đ	755,000,000 đ
<b>Total</b>				<b>4,055,000,000 đ</b>

Figure 21: Print Delivery Note

#### 4.2.2 Personal Information Management

Select the Profile icon on the sidebar to access the Inventory Management function.

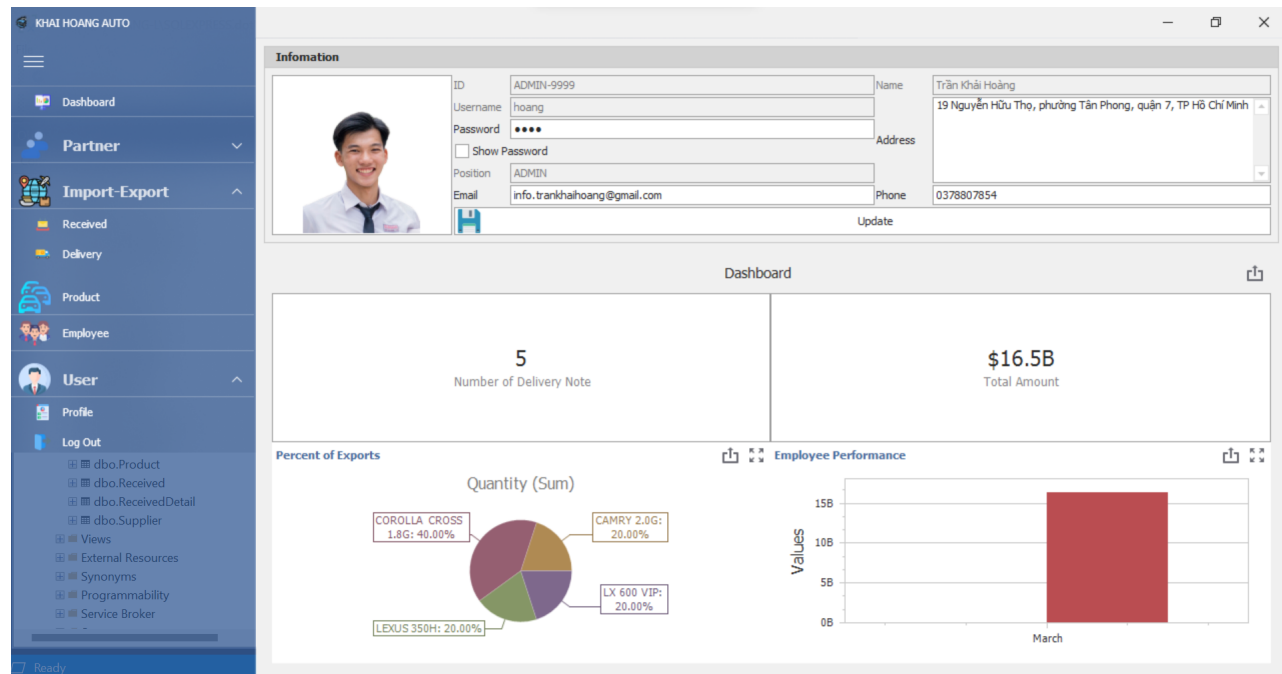


Figure 22: Interface of Personal Information Management function

## 5 Installation

### 5.1 Environment Setup

- Microsoft Visual Studio + DevExpress v21.2
- Microsoft SQL Server Management

### 5.2 Database Connection

1. Run file "FinalDB.sql" in Microsoft SQL Server Management :

```
Final_DB.sql - TRA_OANG-L\Admin (52)  TRANKHAIHOANG-L\...-ct - dbo.Product  SQLQuery2.sql - T...OANG-L\Admin (54))
USE [master]
GO
/***** Object: Database [dotNET_FinalProject]    Script Date: 3/12/2023 12:41:05 AM *****/
CREATE DATABASE [dotNET_FinalProject]
    CONTAINMENT = NONE
    ON PRIMARY
    ( NAME = N'dotNET_FinalProject', FILENAME = N'C:\Program Files\Microsoft SQL Server\MSSQL15.SQLE
    LOG ON
    ( NAME = N'dotNET_FinalProject_log', FILENAME = N'C:\Program Files\Microsoft SQL Server\MSSQL15.
    WITH CATALOG_COLLATION = DATABASE_DEFAULT
GO
ALTER DATABASE [dotNET_FinalProject] SET COMPATIBILITY_LEVEL = 150
GO
IF (1 = FULLTEXTSERVICEPROPERTY('IsFullTextInstalled'))
begin
EXEC [dotNET_FinalProject].[dbo].[sp_fulltext_database] @action = 'enable'
end
GO
ALTER DATABASE [dotNET_FinalProject] SET ANSI_NULL_DEFAULT OFF
GO
ALTER DATABASE [dotNET_FinalProject] SET ANSI_NULLS OFF
GO
ALTER DATABASE [dotNET_FinalProject] SET ANSI_PADDING OFF
```

Figure 23: Run file FinalDB.sql in Microsoft SQL Server Management

2. Open the project on Microsoft Visual Studio and access App.config file. Then, in the connectionString section as shown below, change the server name to the server on your PC.

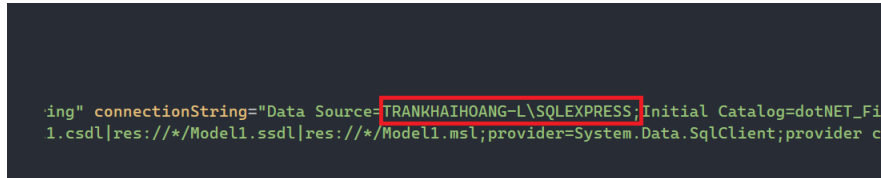


Figure 24: Change the server name in your App.config file

### 5.3 Run Application

- After successfully connecting to the database, click the Run button in Microsoft Visual Studio to run the software.
- The administrator account to access the software.
  - Username: admin
  - Password: 123456