

FINAL PROJECT

ISYS520

Management Business Process Application

Prepared by

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Executive Summary

Problem

Cuong Long Pharmaceutical Company is a small enterprise in Ho Chi Minh city, Vietnam with less than ten employees to operate the whole business which generates approximately one million dollar revenue annually. The main customers of the firm are the hospitals in Vietnam. The firm imports medicines from Korea, Japan, India and China and distributes those products to the customers. They get the customers through bidding and relationship so that their medicine will be used for the patients in these hospitals. Although the firm has a quite good amount of annual revenue, the management and accounting processes do not operate efficiently.

The accountants of the firm must keep track all the sales transaction manually. They do use excel to record each sale transactions; however, they need to process all of those records manually at the end of the month to calculate commission, total sale of each customer and generates inventory report. This process takes a lot of time and causes mistakes due to human involvement.

Purpose

With the request from director of Cuong Long Pharmaceutical, who is my father, I decided to apply my skills and knowledge in VBA class to build an application that can meets the needs of the firm. Basically, the firm need to keep track of employees, inventories and customers. In addition, the firm also needs reports for current inventory, sales of the month and commissions of the month. The firm only needs the data for those report so they can perform further analysis with Pivot Table. Therefore, for this project, I do not support formatting for the reports.

In general, my project delivers the following functions:

- Support to manage (add and edit) employee
- Support to manage (add and edit) product
- Support to manage (add and edit) customers
- Create and record sale transactions
- Generate current inventory report, sale of the month for each customer, commission of the month for each employees
- Automatically send email to employees regarding commission of the month

Conclusion

This project has taken more than 40 hours in about two months (including interviews for requirements, analysis, design, programming and testing) with most of the features function correctly. The scope of the project can be easily expanded which can support other functions such as Pivot Table, generate reports based on different categories (employee, customer, date, etc.), etc. However, this application has met most of the needs to support the firm.

Application Background

In order to accomplish this project, I mainly applied the following tools:

- Userform (textbox, combo box, list box, button)
- Ribbon
- Database MySQL
- Email configuration

Userform

I believe graphic user interface is the most important factor so that the user can operate the application efficiently. As a result, I used six userforms in vba to serve different functions so that the user can easily interact with the application.

Ribbon

I have used the ribbon wizard of Dr. Allen for creating ribbon for this project. I also looked for some free icons that more suitable for this project. The ribbon has been designed clearly and categorized by groups.

Database MySQL

This project mostly interact with database to create, update and keep track of the record. There are a lot of free Database Management System (DBMS) that I can choose to use; however, I plan to build another system for this firm, and I want to use one stable DBMS for many applications so I choose to use MySQL in this project because of stability, familiarity and future benefits. The installation guide will be included in this document.

Email Configuration

I also used email function for this project which will send an email to sale prep employees who have the commission of this month. I did not write the code myself, but I found it on google and it works well for my application. I used my email server which my team and I built for Intex II in Information System Junior Core.

Above are the main techniques I have used to develop this application. The part that consume my time the most is figuring out the relational database model which visualize how the information is recorded for future queries. In addition, the logic to perform some functions is quite complex and takes major amount of time.

DBMS Installation Guide

As mentioned above, I used MySQL for this project to create, update and keep track information. I have included a SQL script which will create tables and dummy data for testing purposes. In order for this application to run correctly, you should install MySQL Server 5.6 and MySQL Workbench. I do not have an online hosting service, so it is not really convenient for you just to test this program. However, if you want to do that, please follow the steps below:

- Download MySQL Installer at www.mysql.com
- Install all the adds-in required
- Create root account with the following password: Lphong1992
 - In case if you want to adjust this program to work on your database, you can go to my userforms initialization sub where I have my connection strings. Then you can change the server, database, account and password. I have six userforms, so you need to change the setting of six connection strings.
- Open MySQL Workbench or your DBMS, login to your database with your root account.
- In File menu, select “Open SQL script” and find the CreateDB.sql in the folder you downloaded for this project.
- Execute this script will create a database named cuonglong with all the tables and dummy data.

In addition, Excel must need ODBC driver to connect to MySQL, you can download it by going to: <http://www.mysql.com/downloads/connector/odbc/>.

- Install ODBC you just downloaded
- In Excel, go to DATA ribbon, click “From Other Sources”, and choose “From Microsoft Query”
- In the “Choose Data Source” window, click Ok on “New Data Source”, name the data source, select ODBC driver and click connect.
- In the pop-up window, type localhost for TCP/IP Server, root for User and the password you choose (could be Lphong1992) and select cuonglong for database.
- Test to make sure the connection is correct and click OK to finish the setup.
- From this point, this application can connect to the database correctly and you can use all of functions the application provides.

You can later change the dummy data by execute the modified script in MySQL Workbench.

Application Walkthrough

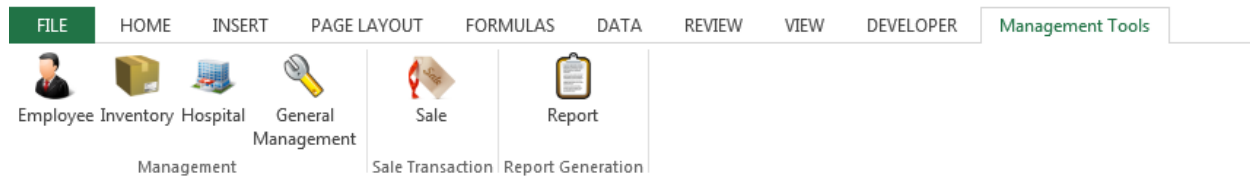


Figure 1.0

Figure 1.0 is the ribbon I created to use all of functions in this application. As you see, there are three main groups in this ribbon: Management, Sale Transaction and Report Generation

Management

This group provide four functions, you can either add or edit employee, inventory and customer. All of the fields are required to enter when you use these functions.

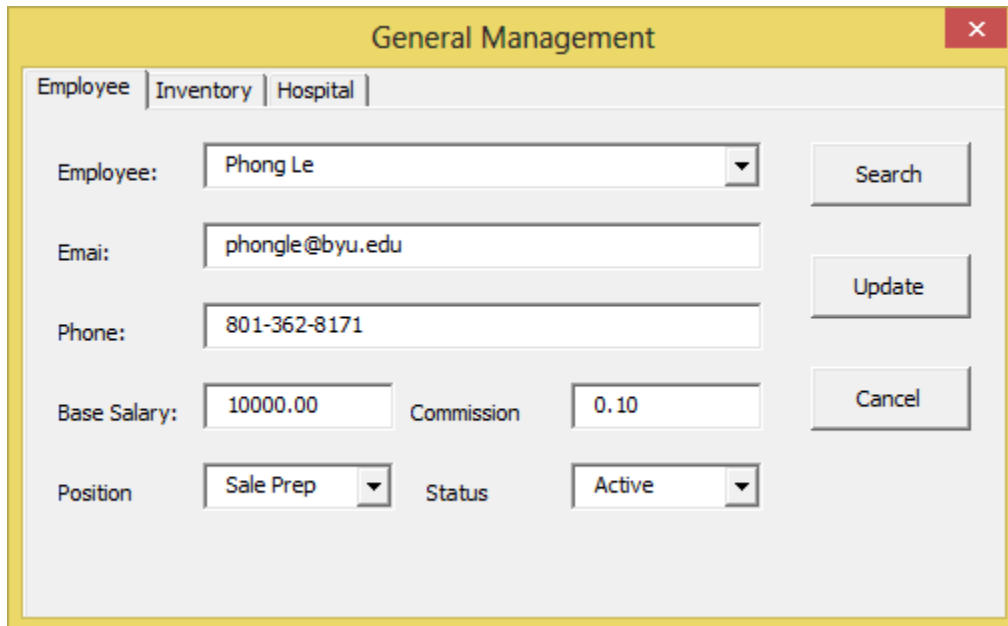
Two side-by-side application windows. The left window, titled 'Employee Management', contains input fields for Firstname, Lastname, Fullname, Email, Phone, Base Salary, Commission, and a dropdown menu for Position (currently showing 'Sale Prep'). It has 'Save' and 'Cancel' buttons at the bottom. The right window, titled 'Hospital Management', contains input fields for Hospital Name, Address, Ward, District, Commission, City, Email, Phone, and an Employee dropdown menu. The Employee dropdown is open, showing a list of names: Phong Le, Andy Hash, and Thien An.

Figure 1.1

Two user interfaces in figure 1.1 support adding employee and hospital. In Employee Management window, the user can select different positions from Sale Prep, Accountant to Director. However, only Sale Prep employees can be assigned to hospital.

There must be one employee associates with one hospital to receive commission. This employee will work with doctors, enhance relationship with that hospital so that hospital will order more products from the firm. Therefore, only Sales Prep employees will appear in the Employee Combo box in Hospital Management window.

Inventory Management also has similar interface where the user can add a new product with all the information required.



The screenshot shows a window titled "General Management" with a yellow header bar and a red close button. Below the header is a tabbed interface with three tabs: "Employee", "Inventory", and "Hospital". The "Employee" tab is selected. The form contains the following fields and controls:

- Employee:** A dropdown menu showing "Phong Le" with a downward arrow.
- Emai:** A text input field containing "phongle@byu.edu".
- Phone:** A text input field containing "801-362-8171".
- Base Salary:** A text input field containing "10000.00".
- Commission:** A text input field containing "0.10".
- Position:** A dropdown menu showing "Sale Prep" with a downward arrow.
- Status:** A dropdown menu showing "Active" with a downward arrow.
- Buttons:** "Search", "Update", and "Cancel" buttons are located on the right side of the form.

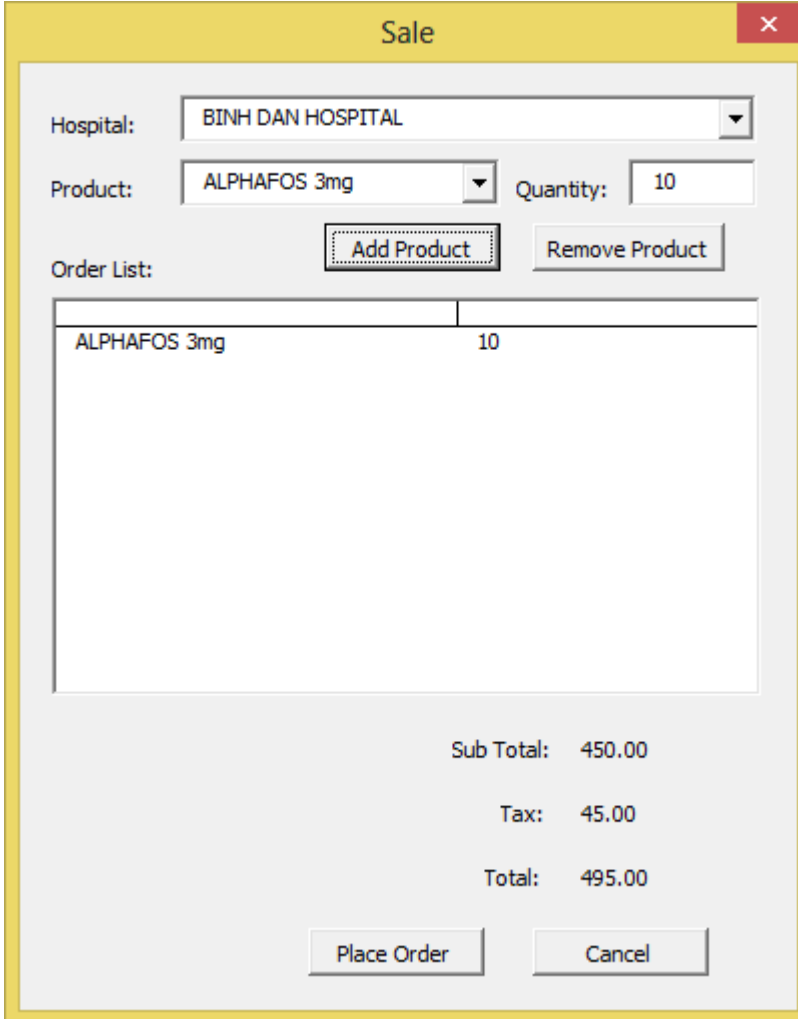
Figure 1.2

When user click General Management button, a window similar to figure 1.2 will pop-up. This window has three tabs to manage different categories. In userform initialize sub, I set up so that the full name of all employees is populated to the combo box. Therefore, user can select employee's name and search for the information of regarding employee, change information and update. The update button will change the record of that employee in the database, so if the user uses this function again in the future, he will see the changes.

Status combo box is used to reflect that hiring status of that employee. I tend not to delete an employee record when he is terminated. Instead, user can select deactivate status and update. From this point, any activities of this employee will not involve in the business processes. For example, when a sale prep is deactivate, user won't be able to assign that person to a hospital. In addition, if that employee returns to the firm, user can easily active him again.

The other two tabs also provides the same abilities where user can go to search for product or customer and update the new information. For example, update the change in quantity of a product or change phone number of a customer.

Sale Transaction



The screenshot shows a window titled "Sale" with a yellow header bar. Inside the window, there are several input fields and buttons. At the top, there is a "Hospital:" label followed by a dropdown menu showing "BINH DAN HOSPITAL". Below this, there is a "Product:" label followed by a dropdown menu showing "ALPHAFOS 3mg" and a "Quantity:" label followed by a text input field showing "10". To the right of the "Product:" dropdown, there are two buttons: "Add Product" and "Remove Product". Below these buttons is an "Order List:" label. Underneath the "Order List:" label is a table with two columns. The first column contains the text "ALPHAFOS 3mg" and the second column contains the text "10". At the bottom of the window, there are three lines of text: "Sub Total: 450.00", "Tax: 45.00", and "Total: 495.00". Below these lines are two buttons: "Place Order" and "Cancel".

Product	Quantity
ALPHAFOS 3mg	10

Sub Total: 450.00
Tax: 45.00
Total: 495.00

Place Order Cancel

Figure 1.3

All the sale transaction can be performed through this function. User needs to select a customer, type of product and quantity. A control will be applied to make sure that user does not order more than the current quantity of that item. The subtotal, tax, and total will be updated immediately when user adds new product to the order list. Another control to make sure there is at least one product in the order list is also applied.

In addition, a remove button is also helpful to remove the product from the order list when user adds the product in mistake. However, this function is not working correct for now. When user clicks Place Order, this order will be recorded in the database and commission for employee associate with this customer will also be updated automatically.

Report Generation

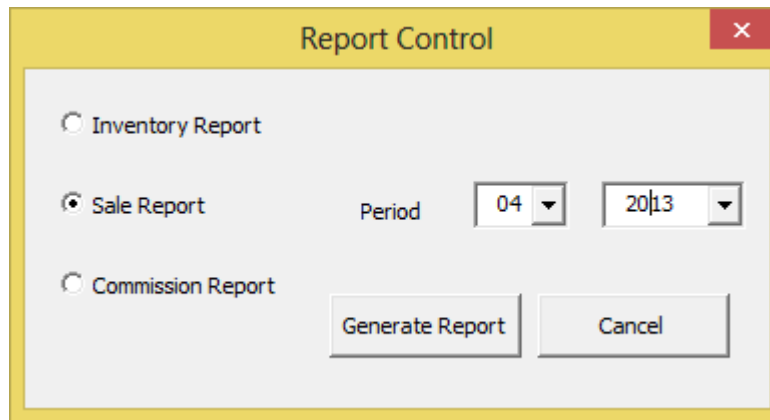


Figure 1.4

Due to the request of the firm, reports with all of data should be generated for further analyses. These reports are Inventory report, Sale of the month report, Commission report. The reports generated are not required to be formatted. The firm only need the data. Therefore, I did not focus on formatting these reports.

This function is easy to use, user simply chooses which type of report he wants. If it is a sale or commission report, he must specifies the period; otherwise, a control to remind user to enter period will be applied. When the report is generated, it will create new worksheet and name the worksheet according the type of report user selected. If a worksheet with the same name is currently in the workbook, it will silently delete that worksheet and create a new one with most updated information. The sample of reports will be provided in Appendix A

Extra features: when user choose to generate commission report, it will query the database and calculate the commission of each sale prep employee in that period. It also sends email to all employees who have commission during that period with the data of all transactions associate with each employee. This email function uses my mail account in Intex II and it will keep working until this account is not available. You may need to modify Send_Email_Using_DCO sub to work with your account.

Limitations

Scope

In order to make this product become even extremely helpful for the firm, I can add more futures such as generating different type of reports, formatting reports or using analysis tools like Pivot table and graph. However, due to the lack of time and the scope of the project for ISYS520, I will keep the limit of the project to this size. I will keep working on this project during the summer and make it more robust

Data Control

This application also has some problems in controlling the data user entered. Due to the lack of time, I could not add features to prevent the whole application recording unwanted or invalid information. If more time is granted, I could accomplish this task.

There is also a “Remove” button in Sale function that really took my time. I stopped working on it after doing researches, reach out to classmates and will keep developing this button when school is over. The problem I encountered was I wanted many things behind that button like updating total of order, check the quantity and price, etc. Therefore, I have not found an efficient method to do this at this time.

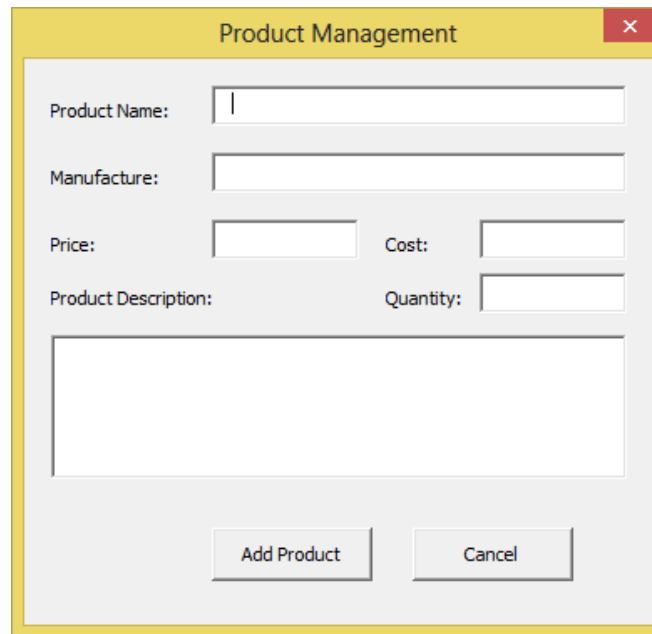
Email Function

Even though I used a code online, I have not checked its reliability. I just know this code work for my email account. I would spend extra time to learn more about this features.

Appendix A

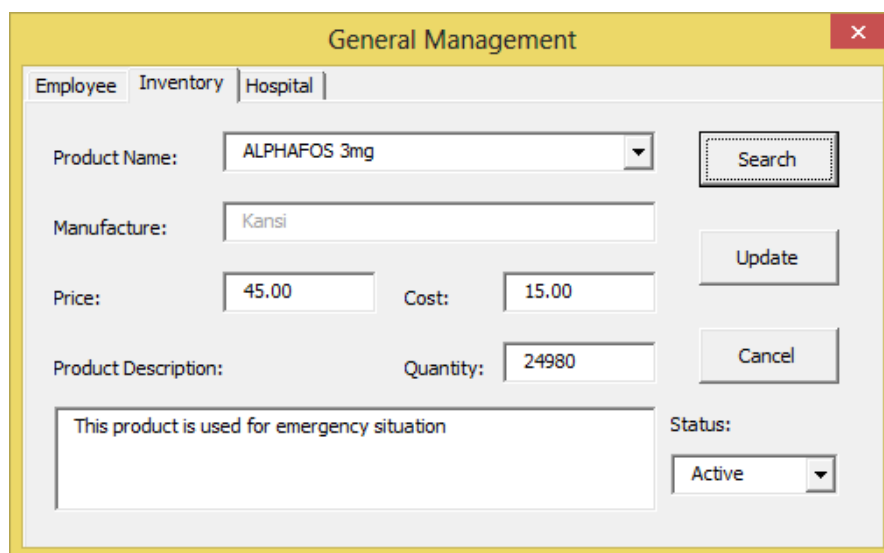
Below is the other userforms I used for this project. They have similar functions as the ones described above.

Inventory Management



A screenshot of a 'Product Management' window. It features a yellow title bar with a close button. The form contains several input fields: 'Product Name' (with a cursor), 'Manufacture', 'Price', 'Cost', 'Product Description', and 'Quantity'. At the bottom, there are two buttons: 'Add Product' and 'Cancel'.

Inventory – General Management



A screenshot of a 'General Management' window. It has a yellow title bar with a close button. Below the title bar are three tabs: 'Employee', 'Inventory' (selected), and 'Hospital'. The form includes a 'Product Name' dropdown menu (showing 'ALPHAFOS 3mg'), a 'Manufacture' text field (showing 'Kansi'), 'Price' (45.00) and 'Cost' (15.00) text fields, a 'Product Description' text area (containing 'This product is used for emergency situation'), and a 'Quantity' text field (showing '24980'). On the right side, there are buttons for 'Search', 'Update', and 'Cancel'. At the bottom right, there is a 'Status' dropdown menu (showing 'Active').

Hospital – General Management

General Management

Employee

Inventory

Hospital

Hospital Name:

HUNG VUONG HOSPITAL

Search

Address:

523 HUNG VUONG, WARD 3, DISTRICT 10, HO CH

Update

Commission:

0.30

Phone:

08-39622368

Cancel

Email:

sales@bd.com

Status:

Active

Employee:

Phong Le

Inventory Report

	A	B	C	D	E	F	G
1	CURRENT INVENTORY REPORT						
2							
3	Date:	4/16/2013					
4							
5	ID	Product Name	Manufacture	Quantity	Price	Cost	
6	1	FOSMICIN 3mg	Meji	3000	51	20	
7	2	FOSMICIN 2md	Meji	2960	539	14	
8	3	ALPHA FOS 3mg	Kansi	24980	45	15	
9	4	ALPHA FOS 2mg	Kansi	29979	32	10	
10	5	KICKER GOLD	NCA	2980	20	6	
11	6	ANETOXIN 10mg	NCA	5970	25	8	
12	7	ANETOXIN 5mg	NCA	15000	15	5	
13	8	ANETOXIN 2mg	NCA	3000	8	2	
14	9	Nacy 2mg	France	50	60	20	
15							
16							
17							
18							
19							
20							
21							
22							
23							
24							
	<div> <div>Sale Report</div> <div>Inventory Report</div> <div>Sheet1</div> <div>+</div> </div>						

Sale Report

	A	B	C	D	E	F	G	H	I	J	K	L
1	SALE REPORT											
2												
3	Period:	Apr-13										
4												
5	ID	Hospital	Date	Product	Quantity				Hospital	Sub Total	Tax	Total Price
6	1	BINH DAN HOSPITAL	4/15/2013	ANETOXIN 2mg	1				BINH DAN HOSPITAL	24645	2464.5	27109.5
7	2	BINH DAN HOSPITAL	4/15/2013	ALPHAFOX 2mg	30				CA MAU HOSPITAL	63600	6360	69960
8	3	BINH DAN HOSPITAL	4/15/2013	FOSMICIN 3mg	1				HUNG VUONG HOSPITAL	15900	1590	17490
9	4	BINH DAN HOSPITAL	4/15/2013	ANETOXIN 5mg	1							
10	5	BINH DAN HOSPITAL	4/15/2013	ALPHAFOX 3mg	30							
11	6	BINH DAN HOSPITAL	4/15/2013	Nacy 2mg	30							
12	7	BINH DAN HOSPITAL	4/15/2013	ANETOXIN 10mg	1							
13	8	BINH DAN HOSPITAL	4/15/2013	FOSMICIN 2md	30							
14	9	BINH DAN HOSPITAL	4/15/2013	ANETOXIN 2mg	30							
15	10	BINH DAN HOSPITAL	4/15/2013	KICKER GOLD	1							
16	11	BINH DAN HOSPITAL	4/15/2013	FOSMICIN 3mg	30							
17	12	BINH DAN HOSPITAL	4/15/2013	ANETOXIN 5mg	30							
18	13	BINH DAN HOSPITAL	4/15/2013	ALPHAFOX 2mg	1							
19	14	BINH DAN HOSPITAL	4/15/2013	ANETOXIN 10mg	30							
20	15	BINH DAN HOSPITAL	4/15/2013	ALPHAFOX 3mg	1							
21	16	BINH DAN HOSPITAL	4/15/2013	Nacy 2mg	1							
22	17	BINH DAN HOSPITAL	4/15/2013	KICKER GOLD	30							
23	18	BINH DAN HOSPITAL	4/15/2013	FOSMICIN 2md	1							
24	19	BINH DAN HOSPITAL	4/15/2013	ANETOXIN 2mg	30							

Commission Report

	A	B	C	D	E	F	G	H	I	J	K
1	COMMISSION REPORT										
2											
3	Period:	Apr-13									
4											
5	ID	Employee	Hospital	Date	Product	Quantity	Sub Price	Commission		Employee	Total Commission
6	1	Andy Hash	BINH DAN HOSPITAL	4/15/2013	Nacy 2mg	30	60	180		Andy Hash	2464.5
7	2	Andy Hash	BINH DAN HOSPITAL	4/15/2013	Nacy 2mg	1	60	6		Phong Le	1590
8	3	Andy Hash	BINH DAN HOSPITAL	4/15/2013	ALPHAFOB 2mg	30	32	96		Thien An	6360
9	4	Andy Hash	BINH DAN HOSPITAL	4/15/2013	ALPHAFOB 2mg	1	32	3.2			
10	5	Andy Hash	BINH DAN HOSPITAL	4/15/2013	ANETOXIN 2mg	30	8	24			
11	6	Andy Hash	BINH DAN HOSPITAL	4/15/2013	ANETOXIN 2mg	1	8	0.8			
12	7	Andy Hash	BINH DAN HOSPITAL	4/15/2013	ALPHAFOB 3mg	30	45	135			
13	8	Andy Hash	BINH DAN HOSPITAL	4/15/2013	ALPHAFOB 3mg	1	45	4.5			
14	9	Andy Hash	BINH DAN HOSPITAL	4/15/2013	ANETOXIN 5mg	30	15	45			
15	10	Andy Hash	BINH DAN HOSPITAL	4/15/2013	ANETOXIN 5mg	1	15	1.5			
16	11	Andy Hash	BINH DAN HOSPITAL	4/15/2013	FOSMICIN 2md	30	539	1617			
17	12	Andy Hash	BINH DAN HOSPITAL	4/15/2013	FOSMICIN 2md	1	539	53.9			
18	13	Andy Hash	BINH DAN HOSPITAL	4/15/2013	ANETOXIN 10mg	30	25	75			
19	14	Andy Hash	BINH DAN HOSPITAL	4/15/2013	ANETOXIN 10mg	1	25	2.5			
20	15	Andy Hash	BINH DAN HOSPITAL	4/15/2013	FOSMICIN 3mg	30	51	153			
21	16	Andy Hash	BINH DAN HOSPITAL	4/15/2013	FOSMICIN 3mg	1	51	5.1			
22	17	Andy Hash	BINH DAN HOSPITAL	4/15/2013	KICKER GOLD	30	20	60			
23	18	Andy Hash	BINH DAN HOSPITAL	4/15/2013	KICKER GOLD	1	20	2			
24	19	Andy Hash	BINH DAN HOSPITAL	4/15/2013	ALPHAFOB 3mg	30	22	66			