POS store project report

Prepared by Group B

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1. Project Description

a. Project Overview

Little Shop is a book retail company, located at Binh Duong, Viet Nam. The company is very popular for selling different types of book which are in both Vietnamese and foreign languages. Since having to write down all the records in a record book manually, they are facing difficulties for keeping the records of their sales, stocks as well as customer services.

The manager decided to change the present recording system with a POS SYSTEM, which will help them to overcome their short falls. According to their requirements it has to be developed offline.

b. The Purpose of the Project

We are creating a Web Application which allows a merchant to calculate the amount owed by the customer, indicate that amount, may prepare an invoice for the customer.After finishing the payment process,the system will update product's information to the database which will be showed to the manager.

c. The Scope of the Work

First of the POS system's objectives is Inventory management which means using bar code identification in receiving, tracking and selling inventory items. The POS system can also monitor the cost of goods sold, purchase price, and profit margins, allowing users to pull reports and determine when to adjust customer pricing.

Second is the Customer Data Control. Retailers can use a POS system to gather information on current customers. By using customer identification variables such as a phone number or Identity card's number, retailers can modify the buying experience of customers which will help them to encourage customers for further buying with different method.

Accounting automation is the last objective.This means POS system can simplify the accounting and record-keeping tasks involved in business. Sales are automatically calculated to determine sales and use tax owed, gross receipts accumulated and even expenses like payouts to vendors for inventory.

Overall, POS systems seek to automate as much of a retailer's financial processes as possible. By increasing information reporting accuracy,retailers gain smoother operations and better information on which to make crucial business decisions. By reducing the labor hours required to gather such information retailers can reduce the cost associated with record keeping.

d. Stakeholders

i. The Customer: the shop owner

ii. The User: the main user of the system is the employees of company, in detail that can be cashier or related employees who are allowed to use the system.

iii. The Other Stakeholders: include all customer who directly buy products from all the retail store of the company

e. Constraints

i. Solution Constraints

The software's needs have a traditional model, in which users purchase one or more licenses upfront for the software and install it on computer system or servers. Development team is in charge of updating and maintaining the software.

Also all access and support to the system should be done via the internet.

ii. Schedule Constraints

Program should be completed with 3 weeks, in which there are 3 days of vacation.

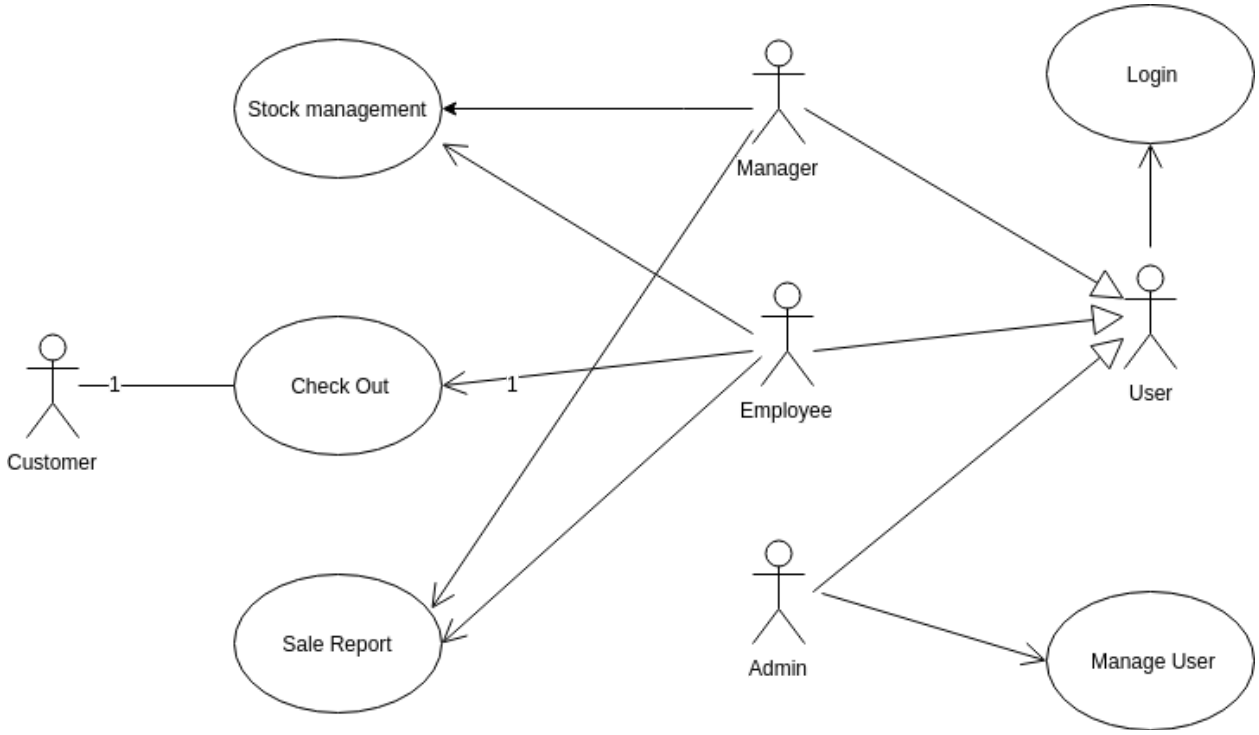
iii. Budget Constraints

The program should be in low cost. The shop owner is not willing to pay for any additional expenses which may be more than $10.

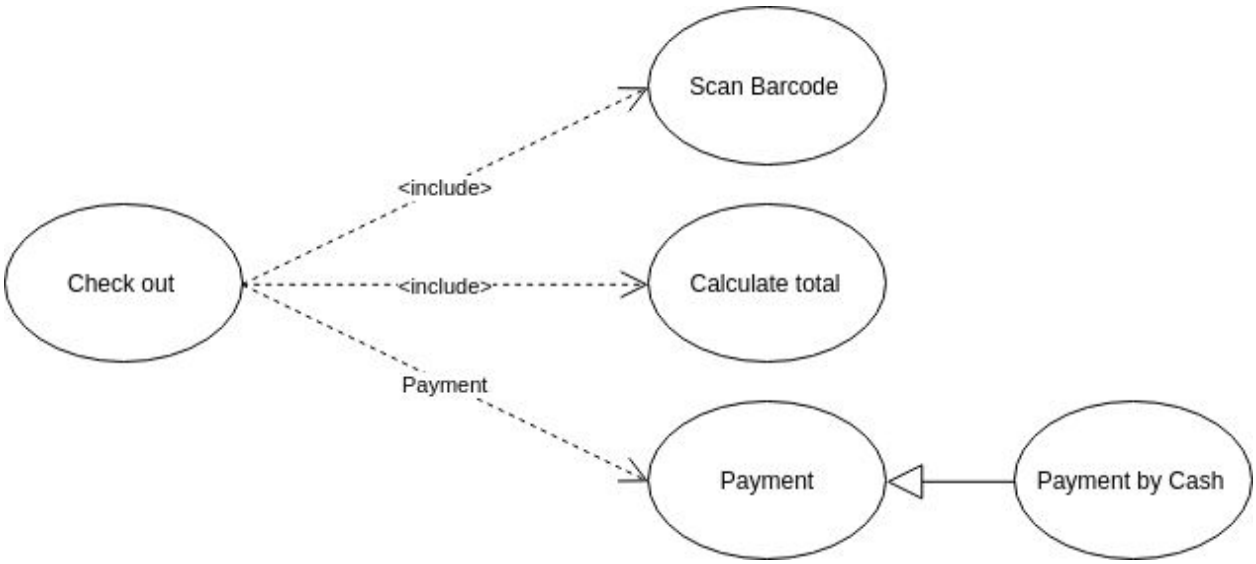
2. Requirements

a. Product Design

i. Use case Diagram

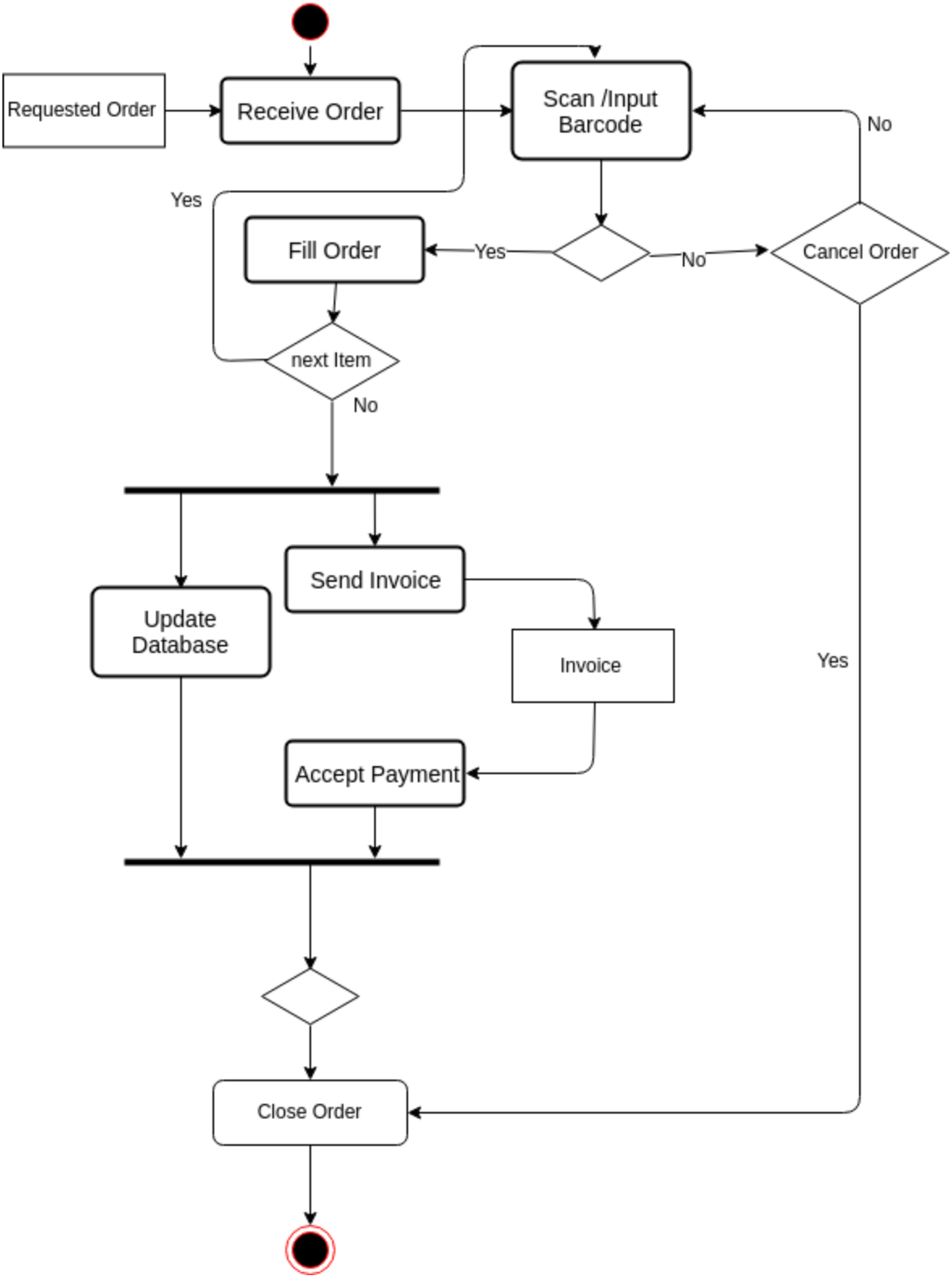


Top level UML use cases for Point of Sales Terminal (POS)

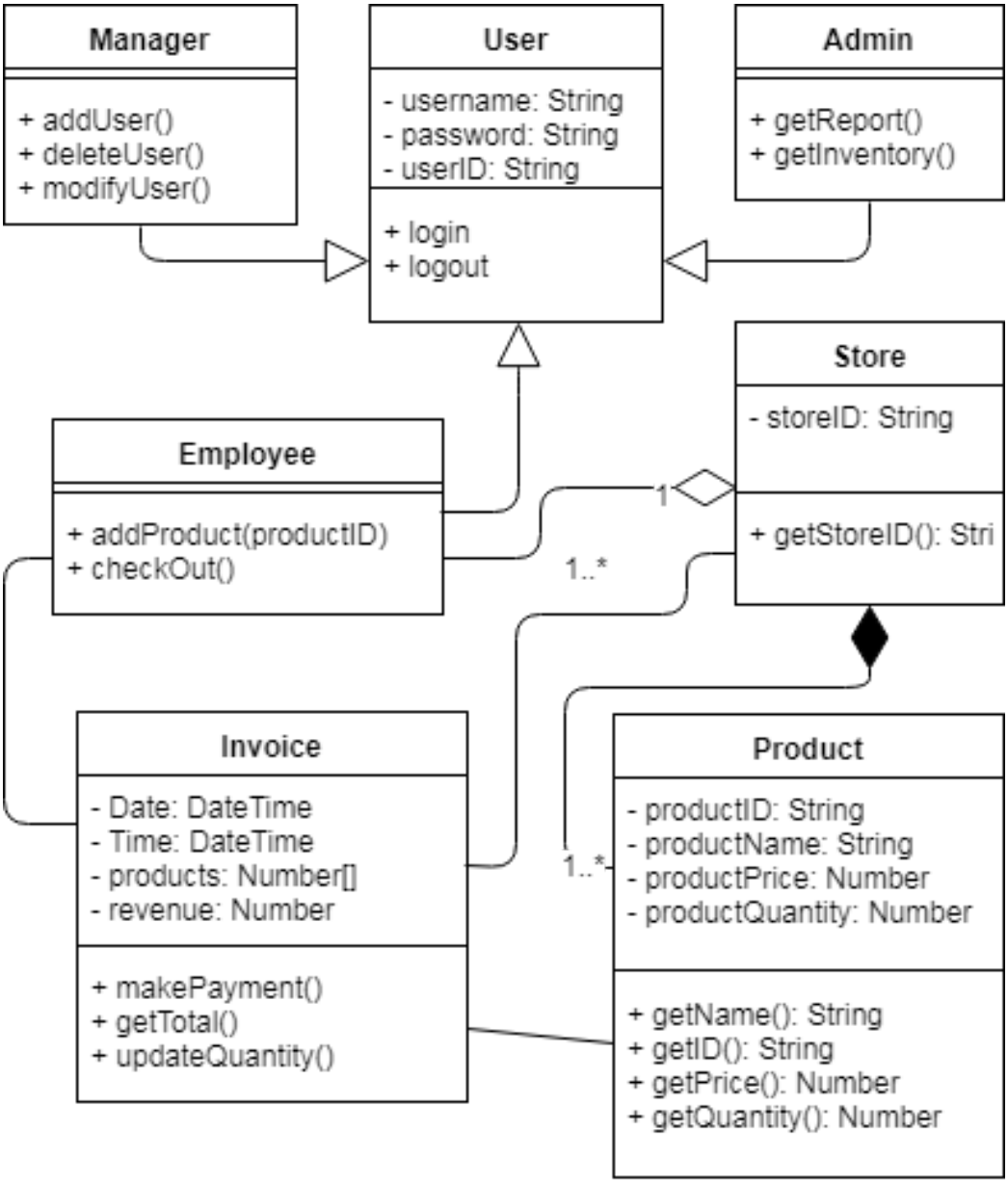


Checkout use case includes Scan Barcode, Calculate total, Payment

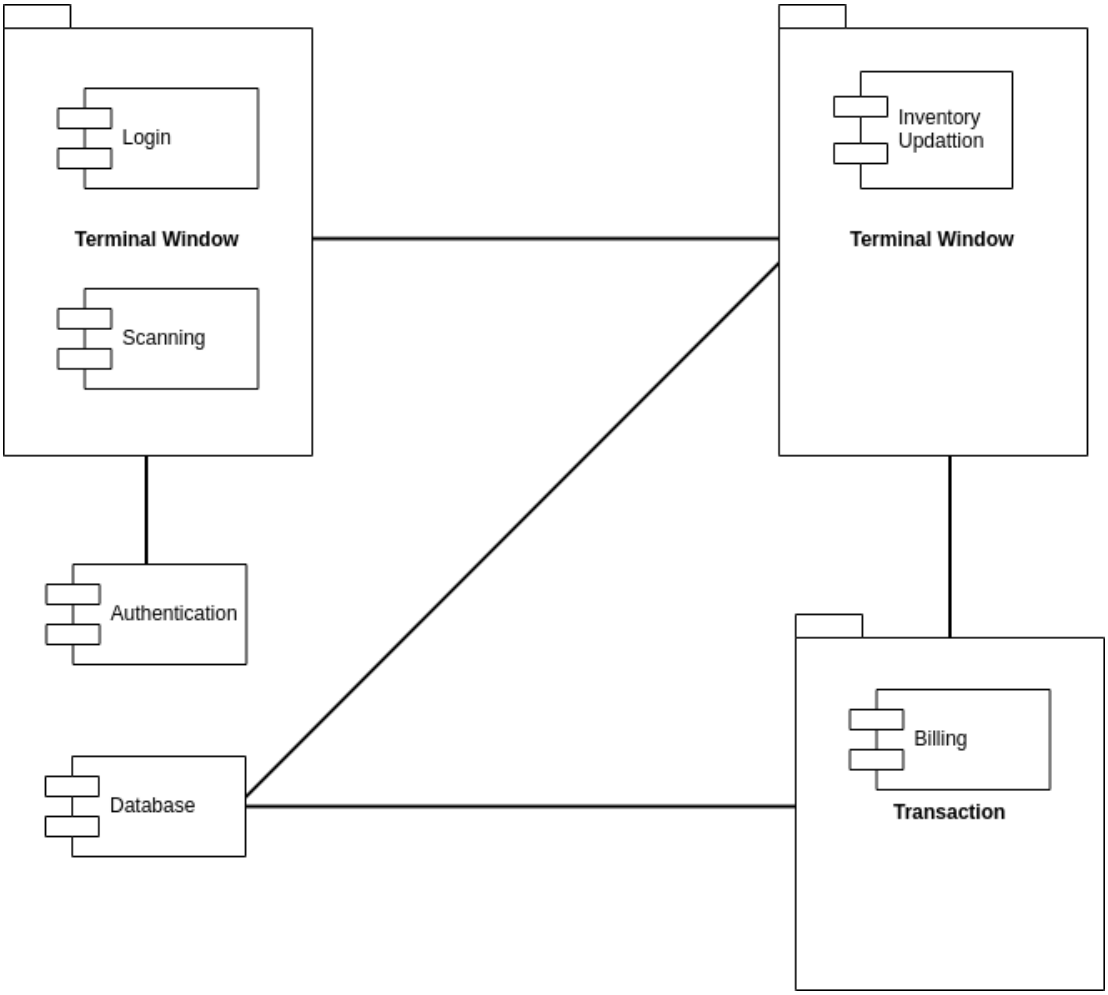
ii. Activity Diagram



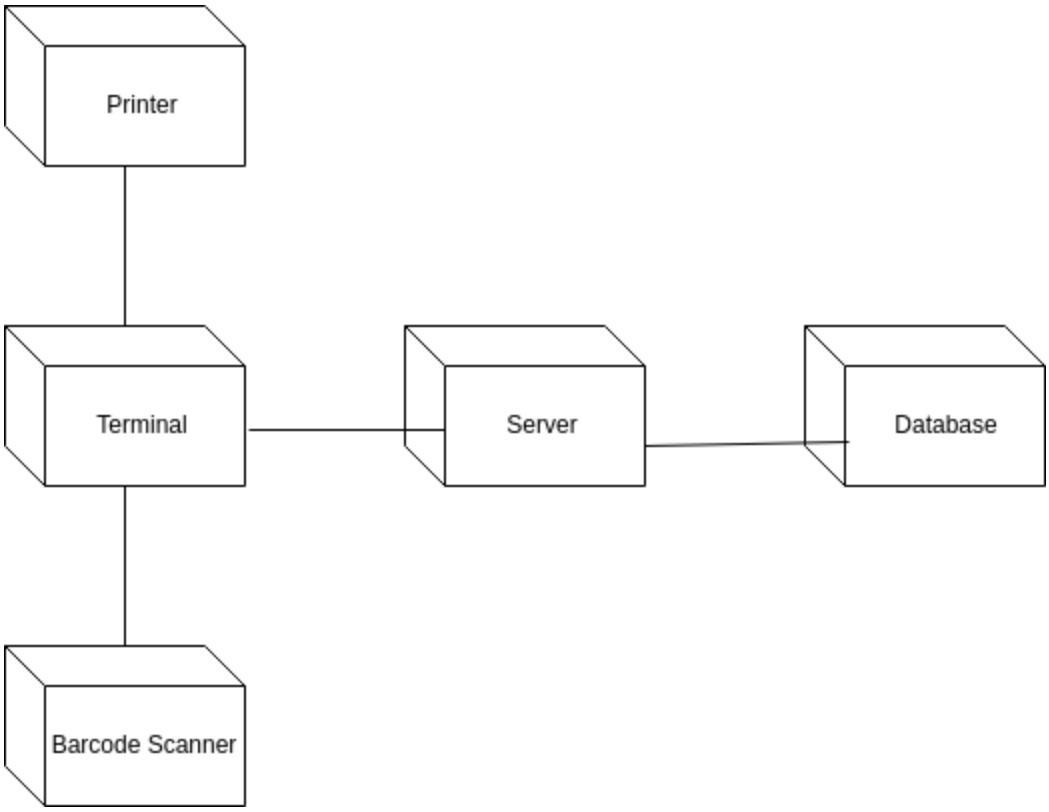
iii. Class Diagram



iv. Component Diagram



v. Deployment Diagram



b. Functional Requirements

i. The system supports sale and record sale..
ii. System can search the product from the stock according to customers demand.
iii. System can add stock.
iv. System can update stock.
v. System can show the stock report.
vi. System can show the sales report.
vii. System can register new staff.
viii. System can view all the service records according to product specific ID.

c. Non functional Requirements

i. Performance requirements

1. The system can save stock into the database safely.
2. The system can support all the PC (Personal Computer).

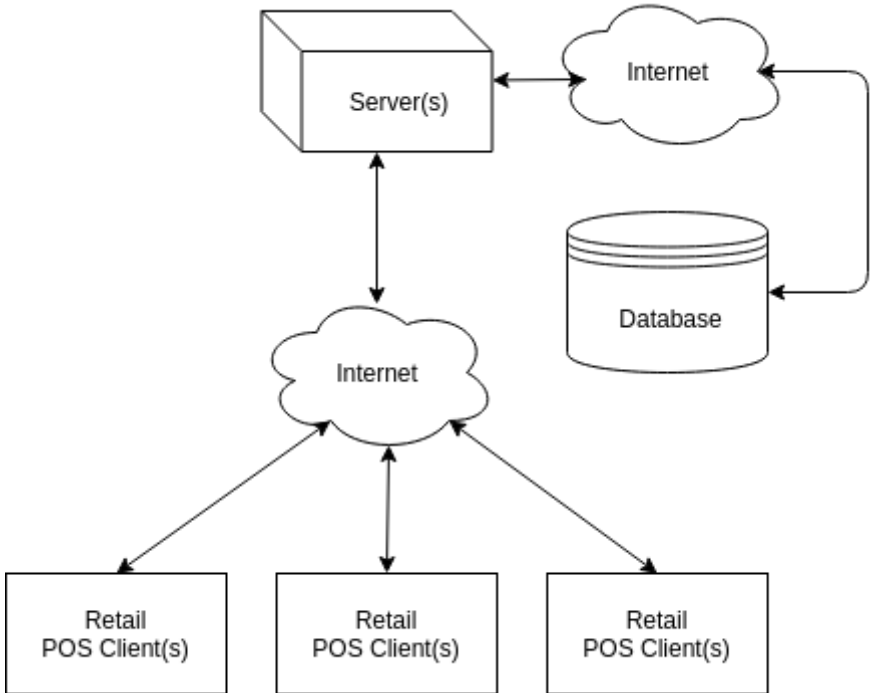
3. The system can create a backup database file after every transaction (sales, stock, service, update of authentication details).
4. Stock should be added after end of sales per day.
5. Staffs can only access this system for sales, service and checking reports.

ii. Other requirements

1. All network transactions that involve financial information or personally identifiable information shall be encrypted.
2. Users shall be required to log in to the System, according to the restricted computer system access policy.
3. For security issues only admin can change the password on behalf of staffs.
4. The system shall permit only staff members who are on the list of authorized.

3. Design

a. System Design



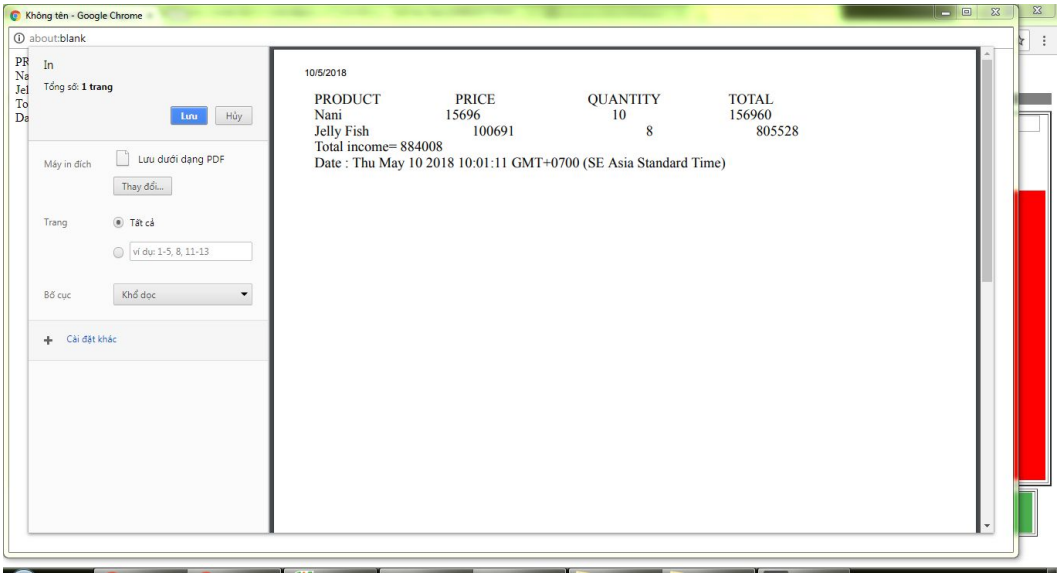
b. User Interface

User interface is one of the most important parts of any system. It shows how the users will interact with the system smoothly. Below is the details of user interface.

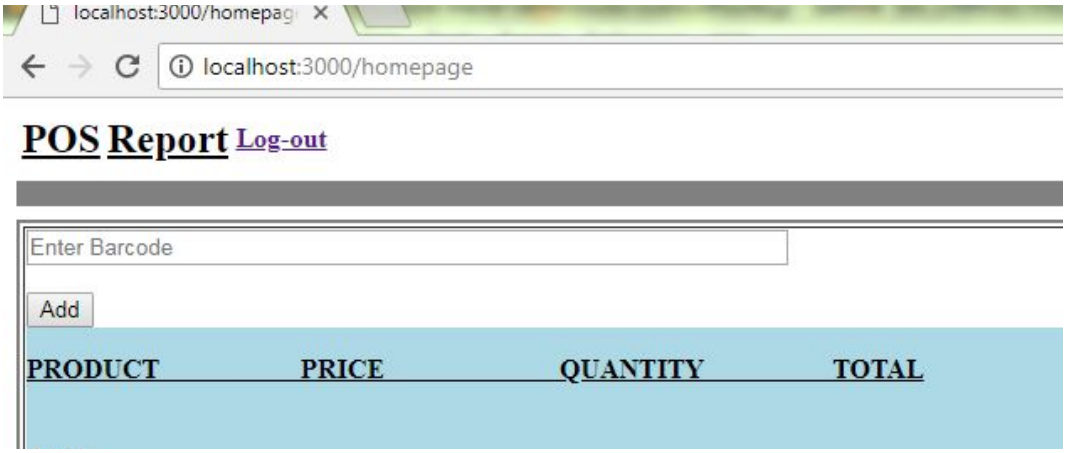
i. Login Interface

ii. Sale interface

iii. Report interface



iv. Logout



4. Project management plan

Task	Author	Priority	Start date	Due date	% of task complete
Sketch GUI	Nhan T.H	HIGH	23 April 2018	24 April 2018	100%
Build runnable server	Khoa P.N.A	HIGH	29 April 2018	03 May 2018	100%
Build database	Khoa P.N.A	MEDIUM	23 April 2018	26 April 2018	100%
Build client GUI	Nhan T.H, An T.D.P	HIGH	23 April 2018	24 April 2018	100%
Connect client server database using RESTful API	Trung P.Q	HIGH	23 April 2018	6 May 2018	30%
Connect client server database	Khoa P.N.A, Trung P.Q	HIGH	7 May 2018	8 May 2018	70%
Function login: Client	An D.P.T	MEDIUM	6 April 2018	8 May 2018	100%
Function login: Server	Trung P.Q	MEDIUM	23 April 2018	10 May 2018	100%

Function scan barcode	Khoa P.N.A	HIGH	23 April 2018	25 April 2018	100%
Function check product code	Nhan T.H	HIGH	26 April 2018	29 April 2018	100%
Function check-out	Nhan T.H	LOW	30 April 2018	3 May 2018	100%
Function sale report	Khoa P.N.A	MEDIUM	1 May 2018	10 May 2018	50%
Testing	Khoa P.N.A, Trung P.Q, Nhan T.H	HIGH	7 May 2018	10 May 2018	80%
Report document	Trung P.Q	MEDIUM	23 April 2018	10 May 2018	100%

5. Risk management plan

The following table is the risk assessment table, where showing the risks may happen in the future and also the action to mitigate or eliminate those risks as much as possible.

	Risk	Probability of Occurrence	Risk control
1	Barcode scanning system does not work properly	50%	Using a dedicated hardware for barcode reading
2	Internet connection is not stable	50%	Set up a backup internet connection, using ethernet instead of wireless connection
3	Electricity is not sufficient	30%	Setting up UPS (Uninterruptible Power Supply) for all important devices
4	Team member lack of knowledge about web development	70%	Building knowledge on developing system
6	Project requirement may change at the last stage	20%	Using log file to store business data, which can adapt quickly with new changes in business requirements
8	Employee can sign in from wrong	60%	Shop own should and must

	store and check out		maintain regular to keep employee from signing at wrong store, and employees must keep his/her account secretly.
9	Connection use http instead of https, business information may be accessed by third party.	50%	Using https connection in the future
10	Server will run out of memory when there are so many log files are sent to it, and querying time slows down	50%	Using big and fast storage on server.
11	The server breaks down, the whole system will down also.	30%	Using high quality server or renting a cloud server
12	The storage on server has problem, then all logging data of transaction will be lost	30%	Adding a backup storage for the system

6. Conclusion

This system brings lot of benefits to staffs. Currently they are keeping every records by written down in memo manually or using Microsoft Excel. At least this system will give them relieve from exhausted life which they are dealing with their customers. Besides this system will make them more reliable to its customers as all the customers records will be kept safely than any previous times. Moreover they can manage their stock more handily.

7. References

[1] Research Gate, 2018. researchgate.net. [Online] Available at: https://www.researchgate.net/publication/283784620_POS_SYSTEM_SHOE_RETAIL_SYSTEM_DOCUMENTATION [Accessed 8 May 2018]