**Finger scanner application**

**for Prison eletronics shop**

(Financial management in the prison.)

PROJECT PROPOSAL

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**Document History**

KC=Kullawat Cotanon  
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NC = Noppon Choosri

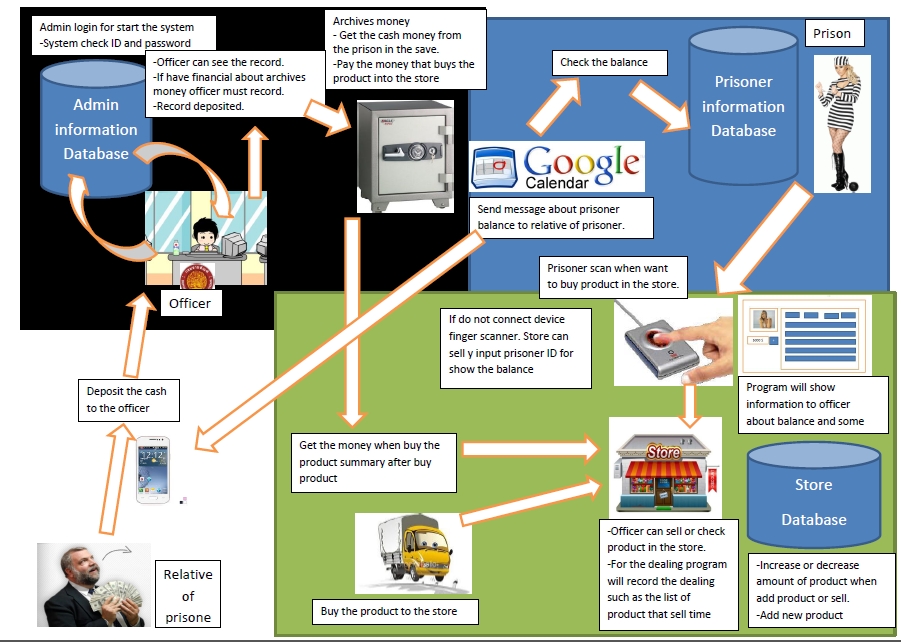
**Abstract**

Currently financial management of prisoner in the prison in Thailand is a manual-base. Prison is still using coupon as paper which is high risk of lost and damage. It also takes a lot of process to withdrawal the coupon. When prisoner wants to use his money he must require to officer .Officer will check in the book account of prisoner and calculate the balance that relative of prisoner deposit. Then when prisoner buy product in the shop officer must check expiration date and record after dealing. All process in the prison is a manual-base and more complexly.

Our project will help the officer manage financial in the prison it will follow the currently system. But It gives comfortable to prisoner and officer. Our project will manage financial of prisoner and store. About dealing process program will using fingerprints system instead coupon system that have more complexly, the system will managed product in stock, the system will manage financial in the prison, the system will send message to relative of prisoner about balance of prisoner. The program uses java, PHP HTML and python langue to create and develop, Google calendar to send message, MYSQL program to create database and Arduino to help connect the fingerprint scanner.

**Chapter One | Introduction and Background**

The prisons in Thailand still use the manual base that more complexly make trouble for the officer. In the prison the prisoner cannot use the cash money in the dealing. It is the policy of Department of Corrections. The system in the present use is the coupon system. Coupon system has lot of process and complexly. Coupon as paper which is high risk of lost and damage. The officer uses the book accounts for calculate balance of prisoner. When prisoner wants to use his money he must require many processes to officer. Officer must check the book account of prisoner about income and withdrawal money and calculate the balance in the account like the blank. When prisoner buy product in the shop officer must check expiration date and record product list after dealing. All process in the prison is a manual-base.



**Figure1.1 Explain all of process in the system.**

Our project will help the officer manage financial in the prison it will follow the currently process and gives comfortable to prisoner and officer by use technology. Our project can dealing product by using fingerprints system instead coupon system. Prisoner can use just finger scan at the finger scanner. The program will show information and balance of prisoner to officer. Officer can deal the product to prisoner buy chick at the product in program. Program will calculate amount of price product whit the balance. When the prisoner buy the product program will record the list of product that prisoner buy. About financial of prisoner when officer get cash money for relative of prisoner program will manage the balance of prisoner. About financial of store program will manage the import and export product. Program will summary income of the day and record about the product that sell, program will record the list of product that prisoner buy. Officer can check all that program record such as time and product that prisoner buy, the deposit of prisoner. Program can record the name of relative. Moreover, the system gives the function send message to relative of prisoner about balance of prisoner.

The program separate 2 user interface first is program that manages in the store. This part include function manage stock for add new product to the list or increases product in the stock. The function sell product when prisoner want to buy product this function will connect whit finger scanner. The function register the member when have a new prisoner he must come to input information and scan fingerprint in to the system. The program uses java langue to create, and python langue for connect the device. Next part is the web services it will control about financial of prisoner and send the data to database for calculate. Program can show all of information that program record. This part is the web application develops by use PHP, HTML, and CSS langue. Two parts that connect whit the database server that develops by MYSQL program. We use Google calendar send message to relative of prisoner about balance. and Arduino to help connect the fingerprint scanner in the prison shop when prisoner want to buy the product he can touch the finger and buying.



Arduino for connect the fingers scanner and system

Connect

Store

Manage product stock in the store

-Import product & sell product

Sell product calculate balance

Register

Add the prisoner to the member input the information and scan finger to data base



Web

Show the report that program record

-list of product, time, prisoner, officer

Mange the financial of prisoner

-Depositing & Dealing

Can send message to relative of prisoner



Send message



PHP langue for use Google calendar send message to relative.

**Figure1.2 system architecture.**

**Chapter Two | Literature Review**

**2.1 Business Review**

**Overview**

Financial management in the prison is a software application that manage financial by use technology system instead currently system that use manual base. Program use software technic in the system such as Arduino hardware. It designs to be able to get the fingerprint from prisoner to the database for the convenience of buying. The program can save information, balance and print into the database. The prisoner uses the print to confirm the account for the purchase. The system is suitable exclusive stores in the organization. There are programs for manage the stock and depositing-withdrawal. Program can send message to relative of prisoner by use Google calendar. Relative of prisoner will know about the balance of prisoner.

**Target**

The main goal of this software is management financial and dealing in the prison of the prisoner. Help to convenient and faster dealing. Manage the depositing of the prisoner by simplify the process.Also manage the stock and account sales.

**Benefit**

1. Easy dealing

Buying without coupon in the system that use in the present, User uses the fingerprint to retrieve the account to buying the products.

2. Simplify the depositing process

The money earned from the depositing will be added to the system by check amount from actual data.

3. Management dealing

Can manage the stock and check the account sales.

**2.2 Business Tools/Software Review**

**2.2.1 Dealing in the prison using the coupons system.**



**Figure 2.2.1: Dealing using coupons review**

Firmly of prisoners deposit by paying cash to officer, the officer record to the prisoner’s book and then Issue three receipts for the relatives, prisoners, and prison apiece for one. When the prison wants to use the coupon them must withdrawals the coupon. The withdrawal is not more than 200 baht per day as coupons. The coupons available day to day if unused it will be expires.In the dealing prisoner use the coupon for pay to officer (the coupon that has 5, 10, 20 and 100 bath). The officer will record about list of product that sells.

Pro

- There is evidence supporting the approval.

- Do not waste electricity bill.

Cons  
 - Coupon which high risk of lost and damaged.

- A lot of process when prisoner want to withdrawals the coupon.

- Resource consumption the paper coupons and toner.

- Resource consumption the book account of prisoner.

- Maybe some mistake that form human.

- Cannot change the amount paid fairly.

- Resource consumption human when record or manage in the store.

**2.3 Technology Review**

**2.3.1 Database**

 **Figure 2.3.1: Database**

**Technology Detail**

A database is a collection of files or information that is organized in a computer system so that it can easily be accessed, managed, and updated.   
 **The selection of this technology** - Data duplication

- Data independence  
 - Data integrity

**2.3.2 Fingerprint**

**  
Figure 2.3.2: Fingerprint**

**Technology Detail**

Fingerprint system is a system that requires the fingerprint of the authorized person or a people who has recorded fingerprint in the fingerprint scanner. If a person does not have record the fingerprint, they will not be able to use the system requires fingerprint.  
 **The selection of this technology** - So fast and convenient

- Reduce operational

- Reduce waste time.

**2.3.3 Java**



**Figure 2.3.3: Java**

**Technology Detail**

Java is the object oriented programming language that has been designed for develop programs for multiple platforms

**Alternative Technology** - Java**Script**

- C#

- C++

**The selection of this technology**

- Object-oriented language allows contacting with SQL

- Excellent performance.

- Excellent specification

- Great memory

- Clear error messages

  - Powerful for development tools such as Eclipse

**2.4 Development Tool Review**

**2.4.1 Eclipse**



**Figure 2.4.1: Eclipse Logo**

**Development Tool Description**

Eclipse is a program that used for developing Java, Computer language. Eclipse program is the program which used to develop Application Server effectively since Eclipse is Open source software to develop for using by developer. It made develop and progress continuously.

**Alternative Tools** - none

**The selection of this tool**

- Provides reconciled set of possibilities for most of the platforms

- Eclipse support for many plug-in and there are many tools for develop project.

- Many flexible frameworks for building various types of applications

- It is really Enlarge and configurable

- Development of the industrial

**2.4.2** **SQL Server**

  
**Figure 2.4.2: SQL Server Logo**

**Development Tool Description**

SQL Server offers on Microsoft’s Data Platform vision by helping your organization manage any data, any place, anytime from anywhere. Store data from structured, semi-structured and unstructured documents. SQL Server offers a complete set of integrated services that enable you to do more with your data.

**Alternative tools** - MySQL

**The selection of this tool**

- Access each client reads and writes directly to the raw data tables

- SQL server support for a large database, work efficiently and Microsoft Windows server by processing queries in parallel and minimizing additional memory requirements when more users are added easy to administer complex security schemes, reduces network traffic by processing database queries on the server before sending results to the client.

**2.4.3** **ARDUINO IDE**



**Figure 2.4.3: Arduino Logo**

**Development Tool Description**

An integrated development environment (IDE) based on the Processing project, which includes support for C and C++ programming languages.

**Alternative Tools**

- none

**The selection of this tool**

- Easier to write a command of Arduino

- Code templates help to develop standard app features.

- Large-scale layout editor with support for drag and drop theme editing.

**Chapter Three | Quality Standard**

**3.1** **ISO29110 for Very Small Entity (VSE)**

ISO/IEC 29110 Systems and Software Life Cycle Profiles and Guidelines for Very Small Entity (VSE). A Very Small Entity (VSE) is an enterprise, organization, department or project having up to 25 people. The target of VSE involved in the development or maintenance of software has been published by ISO. The guide provides project management and software implementation processes.

**3.1.1 Project Management process**

The purpose of the Project Management process is to establish and carry out in a systematic way the tasks of the software implementation project, which allows complying with the project’s objectives in the expected quality, time and cost.

**Selected process**

3.1.1. Progress of the project is monitored against the project plan and recorded in the progress status record.

3.1.2. The change requests are addressed through their reception and analysis. Changes to software requirements are evaluated for cost, schedule and technical impact.

3.1.3. Review meetings with the developer and the customer are held. Agreements are registered and tracked.

3.1.4. Risks are identified as they develop and during the conduct of the project.

3.1.5. A software version control strategy is developed. Items of software configuration are identified, defined and baseline. Modifications and releases of the items are controlled and made available to the customer and developer.

3.1.6. Software Quality Assurance is performed to provide assurance that work products and processes comply with the project plan and requirements specification

**3.1.2 Software Implementation process**

The purpose of the Software Implementation process is the systematic performance of the analysis, design, construction, integration and tests activities for new or modified software products according to the specified requirements.

**Selected process**

3.2.1 Software Implementation Initiation Process.

3.2.2 Software Requirements Analysis Process.

3.2.3 Software Architectural Design Process.

3.2.4 Software Construction Process.

3.2.5 Software Integration and Test Process.

3.2.6 Software Delivery Process.

**Chapter Four | Project Plan**

**4.1 Motivation**

SIMPLY BUY is a system that help store in organization manage about dealing. Customer must input information to the system. The system will get detail as name, picture, address and fingerprint. About highlights of this system is customer just touch a finger to finger scan for buy. System will use the money in credit for dealing. SIMPLY BUY can manage about stock of product in the store in design for the organization that people who do not carry cash in that place.

**4.2 Aims and Objectives**

· **Aims**

Manage system financial transactions of prisoners by use technology connect all information into system. The system can work by itself form depositing to dealing.

· **Objectives**

- Reduce old process system that uses many methods.

- Save the human resource and costs.

- Manage all products in the store.

- Manage system financial transactions of prisoner.

**4.3 Deliverables and Limits**

**4.3.1 Annotations**

**Simply buy -** The System that manages financial transactions in the prison organization.

**4.3.2 Deliverables**

**1) progress I**

1. Feature#1: Consist of store management system.

2. Feature#9: Consist of product information in database.

3. Feature#8: Consist of financial store management.

4. Feature#4: Consist of administrator system.

5. Feature#5: Consist of registration administrator system.

**2) progress II**

6. Feature#2: Consist of prisoner information in database.

7. Feature#3: Consist of financial prisoner management.

8. Feature#7: Consist of deposits between prisoner accounts.

9. Feature#6: Consist of connect device to system.

10. Feature#10: Consist of withdrawal between prisoner accounts.

**3) The document and other material**

· Proposal

· Project plan

· Quality plan

· Software requirement specification

· Traceability record

· Software design document

· Testing document

- Test plan

- Unit test report

- System Test report

· 1 DVD stores client source code, relate file, all documents and poster files in PDF format.

· 1 project poster.

**4.3.3 Limits**

· Limits of size of information depend on database server.

· The accuracy of the fingerprint scan depends on device.

## 

**4.4 Schedule & Milestones**

**Feature list:**

Feature#1: Consist of store management system.

Feature#2: Consist of product information in database.

Feature#3: Consist of financial store management.

Feature#4: Consist of administrator system.

Feature#5: Consist of registration administrator system.

Feature#6: Consist of prisoner information in database.

Feature#7: Consist of financial prisoner management.

Feature#8: Consist of deposits between prisoner accounts.

Feature#6: Consist of connect device to system.

Feature#10: Consist of withdrawal between prisoner accounts.

**Schedule plan:**

Proposal phase: Create proposal document.

Progress I: Create Development plan, Quality plan, Software requirement specification, Software design document and some part of Test document. Start creates feature# 1, 2, 3,4,5 of system (related with store management system and administrator system.).

Progress II: Create feature# 4, 5, 6, 7, 8,9,10 of the system, software system will connect with device and testing. And integrate all features.

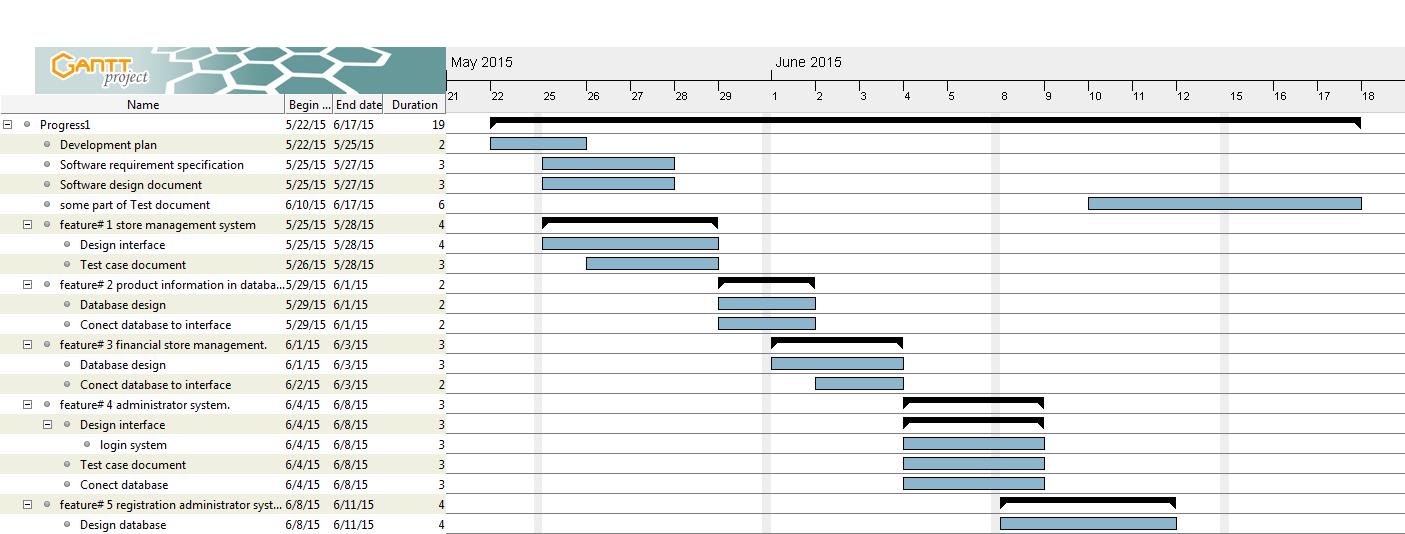
Overall of the system should be complete or nearly.

Final progress (before show pro): Integrate and review all document. Make sure all system and document are complete.

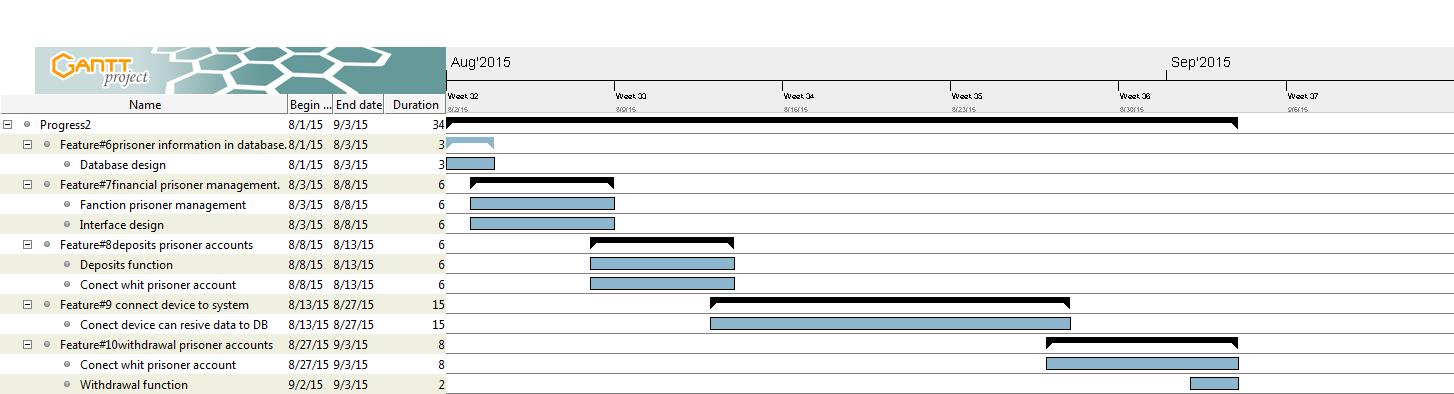
**Figure 4.4.1 Proposal Milestone.**



**Figure 4.4.2 Progress1 Milestone.**

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**Figure 4.4.3 Progress2 Milestone.**

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**4.5 future works**.

-The future may be SMS notification to relatives of the prisoner when the money is exhausted prisoners.

- The future may be having a web page for the relatives can require deposit to the prisoner.

-The future may be approve whit the another organization that inconvenient to use cash money such as Military agencies, Science lab Agencies, boarding school.

- The future may be connect whit another prison all in the country.

**4.6 software process**

-The spiral model is a risk-driven process model generator for software projects. Based on the unique risk patterns of a given project, the spiral model guides a team to adopt elements of one or more process models, such as incremental, waterfall, or evolutionary prototyping.

**Chapter Five | References**

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