**I. Team member information:**

**Team 17:**

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**2. The description of the inventory management system:**

Based on Android mobile platform, our inventory management system is designed for small retail business owners, who, normally together with one or two helpers, have to play multiple roles such as the store manager, the book keeper, the purchaser, the receiver, the merchandiser, and the sales clerk. And for their obvious financial positions, they normally cannot afford any significant investment in their integrated IT infrastructure to manage their inventory for both the in-store sales and E-commerce transactions such as on Amazon and eBay.

The intended system will be based on Android operating system platform. The targeted Android API level will be Android 4.0 (Ice Cream Sandwich) or later. The IDE is Android Studio 3.1 or later which will be hosted on Linux based system, such as Linux Mint. Or if Windows system is preferred, Cygwin will be used. According to Wikipedia.org, Cygwin is a Unix-like environment and command-line interface for Microsoft Windows. It provides native integration of Windows-based applications, data, and other system resources with applications, software tools, and data of the Unix-like environment.

A possible future extension is an online portal, which could be programmed in either JavaScript, or PHP, or Angular. Python will be used to program the webbots for price and product information collections.

This system, which are highly modularized and streamlined based on industry standard and best practices in retail, supply chain management, and E-commerce, will include the following modules:

1. Adminstration: 1a) User account administration 1b) system setting

2. Searching:

3. Goods Management: 3a) Receiving, 3b) Sales, 3c) Returns 3d) Purchasing

4. Customer Service:

5. Data Management: 5a) Data import/export 5b) Data assembling for business reporting

6. Reporting: 6a) price tag printing 6b) Dashboard for inventory, sales, and accounting

6c) generate and print business reports

7. Help:

This system will start from the core functionalities for a small retail business at a local store. Its initial functionalities will focus the inventory managing. It will be used to receive products, to search the product information via bar-code scanning module, to register the sales of products, to manage returned products, to perform some basic managing and planning activities such as continuous/period reviews of stock, ABC analysis, and simple forecast. It will also include some basic store operational tasks such as printing, reporting, and data representation.

The system will evolve from an information manager on inventory into an information manager on the supply chain. It is also expected to be expanded into E-commerce which is capable of processing mobile payments, generating standard shipping labels, adjusting On-Hand inventory, placing purchasing order using the “pull” inventory fulfillment strategy, generating invoices, and executing all related accounting activities.

This system will include data mining functionalities on sales, forecast, supply chain management to reduce cost and promote profit. So far, we do not have any mentor or sponsor for our system yet.

Searching by the term of “inventory management”, there are currently about 14 inventory management apps at Google Play store.

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Business rules:

1. Use continuous review for A and B items

2. Use period review for C items and everything else

3. All modules, which have the system provided functionalities, must be able to be disabled or overwritten by the users, ie. 1). the users can create their own functionalities based on the data provided by the system. 2). the users can modify certain parts of the system provided functionalities.

4. The system will allow multiple users to log in and use, but with different pre-authorized permissions.

5. The Searching module can be activated by pressing the smart phone’s camera button, together with some other ways.

6. On the Searching module, the user can print out the price label for the product which is searched.

7. When the power button is pressed, the Android OS can turn off the screen, and disable the system.

8. The Receiving module registers the acceptance of products and change the On-Hand quantity and On-Order quantity of the inventory.

9. When authorized, anyone can use the Data Management to adjust inventory quantity and process returned products.

10. All quantity fields are int with zero as the default values.

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