Introduction

**Purpose –**

The purpose of this Software Requirements Specification document is to propose a system which will help the NTU staff to manage the stores. They currently do not possess a system which allows them to monitor the quantity of the products being consumed or to allow the (consumer) staffs to efficiently take the products. Instead, they write down the details on a piece of paper, from which the data is manually stored in 2 separate systems by the management staff; QuickBooks, which is responsible for creating an invoice for each department, and Sage, to update the database. The 2 systems mentioned are difficult to use, in addition to being time consuming and lack a lot of features making it hard for the staff to manage the stores. The proposed system will overcome this by combining Sage and QuickBooks along with providing additional features, such as the functionality to scan the products using external hardware, which will make it easier for the consumer staff to take items and the management staff to manage, as the system will update the database automatically.

The system is required to be able to; manage sock, create invoice for each department, create log of products taken by (which) staff, have unit of conversion between the unit supplied into the amount consumed, add new products on the catalogue, register products received from shipments, provide directions to help staff find items, notify the staff about important events, such as low stock, or shipment date. The system will deploy a very simple, easy to use UI with minimal input which will require no prior knowledge on using management systems. It will also provide staff with a ‘basket’ feature which will allow them to take bulk of items at once. There will also be an option for returning items, so if staff accidently took more than required, they can simply decrease the quantity on the checkout interface. The catalogue will have pictures with a brief description of the items to help consumer staff identify them easily. All the data will be backed up on an external (cloud-based) database to avoid data loss.

**User Characteristics –**

The proposed product management system will include three kinds of users. The system privileges/features available to each of these will vary, as will their experience and knowledge of product management. The three types of users will include:

**Consumer**

The consumers will be comprised of university researchers/lectures who require the products available at the store. These users will be limited to removing and returning products to the store. They will not require much experience with virtual systems due to their limited usage of the system and the intuitive user interface which will walk them through the product removal process. The consumers will only need to understand the basic fundamentals of computer usage and graphical user interfaces in order to utilise the system. Interface basics such as clicking a plus to increment the quantity of a product, back arrow to move to the previous page etc. will be all that is needed of this user.

**Staff**

The staff will be the employees working in the store that are in charge of managing stock, receiving shipments and assisting consumers. This type of user will have greater system privileges than the consumer as they will be responsible for the systems store management features. The proposed system is designed to automate a large amount of the manual work needed in the current system and as such the work load is lessened. However, the staff will still be required to input data into the system such as shipment codes so that the system can update the log and the stock database. This will require staff to have some experience with data input in addition to graphical user interfaces. Experience with systems such as MS Excel will transfer easily to the proposed system.

**Admin**

The admin will be the store employees that have greater control over how the store is managed and run. The admin users will be responsible for managing the catalogue of items available to the consumers in addition to viewing logs of removed products and received shipments. Because admins will have greater control over the store as a whole, they will require management and stock control experience in order to fully utilise the system. The level of technical expertise will be similar to that of the staff.

Assumptions –

* any assumptions that affect the requirements
* for example, equipment availability
* user expertise
* For example, a specific operating system is assumed to be available; if the operating system is not available, the Requirements Specification would then have to change accordingly.

Scope and Constraints –

* description of the software application that Software Requirements Specification applies to.
* Also describe any items that will constrain the design options, including
* Parallel operation with an old system
* Audit functions (audit trail, log files, etc.)
* Access, management and security
* Criticality of the application
* System resource constraints (e.g., limits on disk space or other hardware limitations)
* Other design constraints (e.g., design or other standards, such as programming language or framework)

Glossary of terms –

* Outline any acronyms, abbreviations and definitions that will be used throughout the document

Overview –

* What does the rest of this document contain/how is it organised?

# Scope and Constraint

This is a program for small and medium enterprises to do data storage management. The software application applies a software development environment, databases and platforms.

The software development environment (SDE) is using Visual Studio. C# is our main language to coding backstage such as input, output, verification and button access. It’s a programming language designed with the first “component-oriented” language and discourages or prevents type errors. NET framework is intended to be used by the newest application created for the Windows platform. (Dhall & Sundararaman, NA). So, we decided using C# .NET to develop our application interface. MySQL is a high performance and the flexibility of open source. Moreover, it’s free software for us to build our system.

MySQL is not the only database on this program. Another database will build for backup data on the cloud might be Firebase or Amazon Web Service. Cloud database is based on one Real-time Database illustration and consequently getting updates with the most current data. It is built for application developers by cloud storage, a capable, basic and cost-effective object storage service.

The system that we build must consider the platform with is phone, tablet and computer system. Phone and tablet need to support Android and IOS system. For the PC, it is a web page or an application?

## Constraint

No matter in the processing of the program or after the program is developed, we will meet some difficulties. 'How can a company modify our program' is the first problem.

Firstly, the database. The challenges of the database are different database systems and database formats. The familiar database systems have MySQL, Oracle, CVS, etc. and common database formats have XML, JSON, CSV, etc.. The conversion between these database systems and database formats is a problem for us.

Secondly, the audit file access policy needs to select multiple security audit policies as needed. Operating system record the accessed information in the security log, including the access personnel, visitor's computer, and access time. All of them are entering the log will not easy to maintain and manage. The capacity will be occupied by unnecessary log files.

Thirdly, implementation, management and security can only be carried out smoothly with a comprehensive system. On the implementation part, the delay between data transfer, access time and different devices might cause the system to have a different operation. In terms of management, the staff assignment, goals and planning are important reasons for success or failure. For security, the company's product data how can be ensured in every time. How can reduce or avoid the number inputted is wrong?

The limitation of system resources is the size of the disk space. Because of the constant record of picking up, receipts and other information will take up a lot of space. Besides, due to the size of the screen, there is a limited number of things that can be viewed at one time. The size of the RAM can affect the operation of the system. Because the same list display and storage will continue to find out the status of the card machine.

(S Dhall & P Sundararaman, NA). C# AND .NET FRAMEWORK. <https://www.cs.colorado.edu/~kena/classes/5448/f12/presentation-materials/dhall.pdf>

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| The problem the system is to solve is explained is understood |  |
| The purpose of the document is outlined clearly, and consistent with the rest of the document |  |
| The users of the system have been described and discussed |  |
| All major assumptions made in the rest of the document have been stated |  |
| The scope is well defined, and realistic for the project. Relevant hardware and software constraints identified and described |  |
| The glossary serves as a useful aid in reading the rest of the document |  |
| Significant consideration of each aspect of the problem is evidence, and discussed |  |
| The Users’ technical expertise has been discussed |  |
| All assumptions have been stated, and brief details on how the document would have to change if these were to change has be |  |
| Scope is bulletproof, there is no ambiguity in what is in scope. Constraints discussed in good detail. |  |