

**SESSION 2019/2020 SEMESTER 2**

**CODE & SUBJECT :**

**SECJ 1023-01**

**PROGRAMMING TECHNIQUE II**

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**PROJECT:**

**ONLINE INVENTORY SYSTEM**

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# INTRODUCTION

Electronic commerce (E-Commerce) or internet commerce refers to the buying and selling of goods and services using the internet and transfer of money and data to execute the transactions. One of the most well-known e-commerce service providers in Malaysia is Shopee. It will be cool if the stock can be automatically calculated in the process of selling and buying. The time consumed by the sellers to calculate the stock will be reduced. Therefore, we choose a topic on the online inventory system while online buying and selling. Furthermore, the stock we are going to sell online in our system is the foreign language books. And we are going to use the online stock counting system in e-commerce to count the stock left after the customers place their order. So, In this case study, we want to identify the common problems faced by the sellers nowadays while using an e-commerce service. In order to overcome these problems, we also come out with the best solution for each of them by performing this project that includes aspects of encapsulation, association, aggregation, composition, inheritance and polymorphism in our design.

# OBJECTIVE

The objective of our online stock counting system is to ensure sellers’ convenience by calculating the stocks balance directly in the e-commerce websites rather than manually.  How we are going to do this is after the buyers successfully place an order, we provide a class that consists of a member function that can directly produce the current amount of stock left.  This can save the seller's time when selling online.

# PROBLEM

Inventory management is a challenging problem for a company to manage their stock properly. Inventory is important for a company to manage their stock properly so that they can fulfil the customers’ orders. A good inventory system will increase the performance of a company and their profits. From the case study entitled “A Study of Inventory Management System Case Study” from Dr. Tariq Sheikh in May 2018, we found that most of the companies having this problem in managing their inventory. They are facing the problems of the unorganized inventory arrangement, no accurate counting on stock due to unskilled workers and so on. Inventory problems of too great or too small quantities on hand can cause the business failure. If there is an inorganized inventory system, the company cannot manage and know the exact quantities of the stock left, the stock will become overloaded or face with the shortage of stock. In fact, without an updated stock quantity, it will also affect the buyers who wanted to buy more than one item since the stock quantity is not provided and updated. If items are displayed on the website and show as in stock then online sellers should make sure that the particular item is available. It’s a big disappointment for customers when they see out of stock notices or even worse they didn’t know that the stock isn’t available since the inventory is not updated. The study also revealed that better inventory management plays an important role in enhancing customer satisfaction levels which in turn helps e-commerce companies in the long run.

# EXPECTED OUTCOME

With the aim of overcoming this problem, we decided to make an online inventory system while online buying and selling 5 types of foreign language books in order to make the inventory management of a problematic company being organized. This is because it is one of the basic concepts for a better inventory management. The 5 types of books are Korean Language, Japanese Language, Chinese Language, French Language and Arabic Language.

First of all, the user needs to login before entering to the system. For first time user, they have the choice to register first before login. After the user successfully log into the system with the correct username, password and email address, they will be asked to choose their character whether the user is a buyer or a seller.

For a seller, they can view their inventory to check for their stock balance. First, they will ask to input their company ID, company address and company phone number. They information will be printed in the inventory output file. The inventory will make the seller to track his stock efficiency and effectively.

On the other hand, for a buyer, he is able to purchase item, cancel item as well as view his order for purchasing and cancellation. When the user would like to purchase the books, a menu will be shown to make the buyer easier to refer. After the user enter the code of the book that they which to buy, he is asked to enter the quantity that he wants to purchase. After the placing order of an item, he is asked whether to continue purchasing or view his order list as well as return to the menu. When the user is placing a purchase order, the stock quantity in the inventory of the seller will be decrease. However, when the user is placing the cancellation order, the stock quantity in the inventory system of the seller will be increase. If the user needs to view his order list or cancel list, they can access an output file named by their IC number and with the keyword “Order” or “Cancel” after their IC number.

# UML DIAGRAM AND CASE DIAGRAM

**Person**

-name: string

-emailAdd: string

-password: string

-address: string

-phone: string

+Person(string= “”,string = “”)

+registr(): void

+getName() const: string

+displayOut(const Person \*): void

+display(): void

**Seller**

-compId: string

-inv: Inventory

+Seller (string= “”,string= “”,string= “”)

+displayout (int, int): void

**Buyer**

-ic: string

-ord: Order\*

+Buyer(string= “”,string= “”,string= “”)

+placeAddOrder(Order\*): void

+placeCancelOrder(Order\*): void

+shownMenu (): void

+display():void

**Order**

-orderIC: string

-order\_book: string
-order\_code: int

- order\_quantity: int

+Order ()
+Order (string, int, int)

+setOrderIC (string): void
+menu ():void
+getCode () const: int

+printOrder (string): void

+viewOrder (): void

+viewCancel (): void

**Inventoy**

-stock\_book: string
-stock\_quantity: int
-stock\_code: int
-addOrder: Order \*

-cancelOrder: Order \*

+Inventory()

+Inventory (string, int, int )

+setAddOrder (Order \*): void

+setCancelOrder (Order \*): void
+printInventory (int [] ,string [], int [], int [] ,string [], int [], int [] ,string [], int [], int, int): void

placeCancelOrder(Order)

placeAddOrder(Order)

display

displayOut

getName

registr

Buyer

Order

Inventory

Seller

Person

placeCancelOrder

printInventory

setCancelOrder

setAddOrder

viewCancel

viewOrder

printOrder

getCode

menu

setOrderIC

shownMenu

placeAddOrder

displayout

# CONCLUSION

Technology has made significant progress over the years to provide consumers a better online shopping experience and the seller with an extremely convenience selling method. In this case, our online inventory system is useful for the sellers in calculating the stocks. With the rapid growth of products and brands, people have speculated that online selling will overtake in-store selling because there are more customers from all over the world who can shop online by using a smartphone. In order to attract more online sellers to sell stocks online, we should always improve the inventory system of online selling so that the selling method and performance will keep growing for years to come. For example, improving the online inventory system to become a perfect, complete and organized system so that all the stocks and details can be clearly seen and calculated.  In conclusion, online selling and buying has opened up doors to many small retailers that would never be in business if they had to incur the high cost of owning a brick and mortar store.