UNIVERSITI TEKNOLOGI MALAYSIA

SECJ1023

Project Report
(Draft 2)

Shopping system

Section 6 - Group 5

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Table of Content

1.0 Introduction

This year, our country which is Malaysia, has moved to the transition phase to endemic where the restrictions previously imposed to curb the spread of COVID-19 have been eased, paving the way for most activities for other people to freely do now. Even though the government has given freedom to all people, they still need to be careful since the virus can still infect them. Dr. Noor Hisham said that people still need to follow the new standard operating procedures (SOPs) to ensure that Malaysia can move to the endemic phase safely.

The transition phase to endemic has improved our economy since people can start to go buy their essential stuff at stores or supermarkets physically without any restriction. This will cause crowds in the store or supermarkets since there is no limit anymore for the customer to enter the store or supermarket. This will make it easy for the customer to get infected by the virus of COVID-19 even though they have already gotten their boost shot. This is the reason why our team project is a shopping system.

2.0 Problem Background & Solution

Our main problem is when someone wants to buy products from a grocery or other market, they need to use a trolley or bucket if they are going to purchase something. They need to carry the trolly or bucket everywhere they go. In the shopping system, they are not implementing a system where customers can add items to a cart without carrying it. As you know, adding products to an online cart is much easier and more convenient than carrying a cart everywhere. Thus, we have made a system that can add all products in the store or grocery to an online cart without carrying them everywhere they go.

Next, the second problem with the existing shopping system is customers need to queue to pay for items. It will take time if there are so many customers in the grocery. Also, during the COVID-19 pandemic, we have to limit customers from entering the store or groceries because social distancing needs to be implemented. Hence, our system can reduce the time for paying and there will be no limitation for customers to enter the grocery. They just need to go to the counter to pay for the item without scanning each item. This will ensure a smooth and safer purchasing system than before.

3.0 Objectives

The main objective of this project is to develop a convenient and reliable shopping system for both customers and shop staff. The purpose of the system is to ensure customer satisfaction and facilitate the work of staff. The performance and the acceptability of the system in terms of reliability and accessibility can be evaluated. Besides, the system can improve the efficiency of inventory management and help customers to minimize their time and energy for shopping.

The system gives the staff a favorable benefit as they have no need to count the goods at each section in order to refill the almost or fully empty shelf because they can decide when and where to refill the goods just by looking at the system that counts the goods for them. Meanwhile, the customers can save up a lot of time and energy when using the system by choosing the stuff they want to buy and adding it to the cart, then proceeding to the counter without a need to bring the stuff with them everywhere they go.

4.0 Scopes

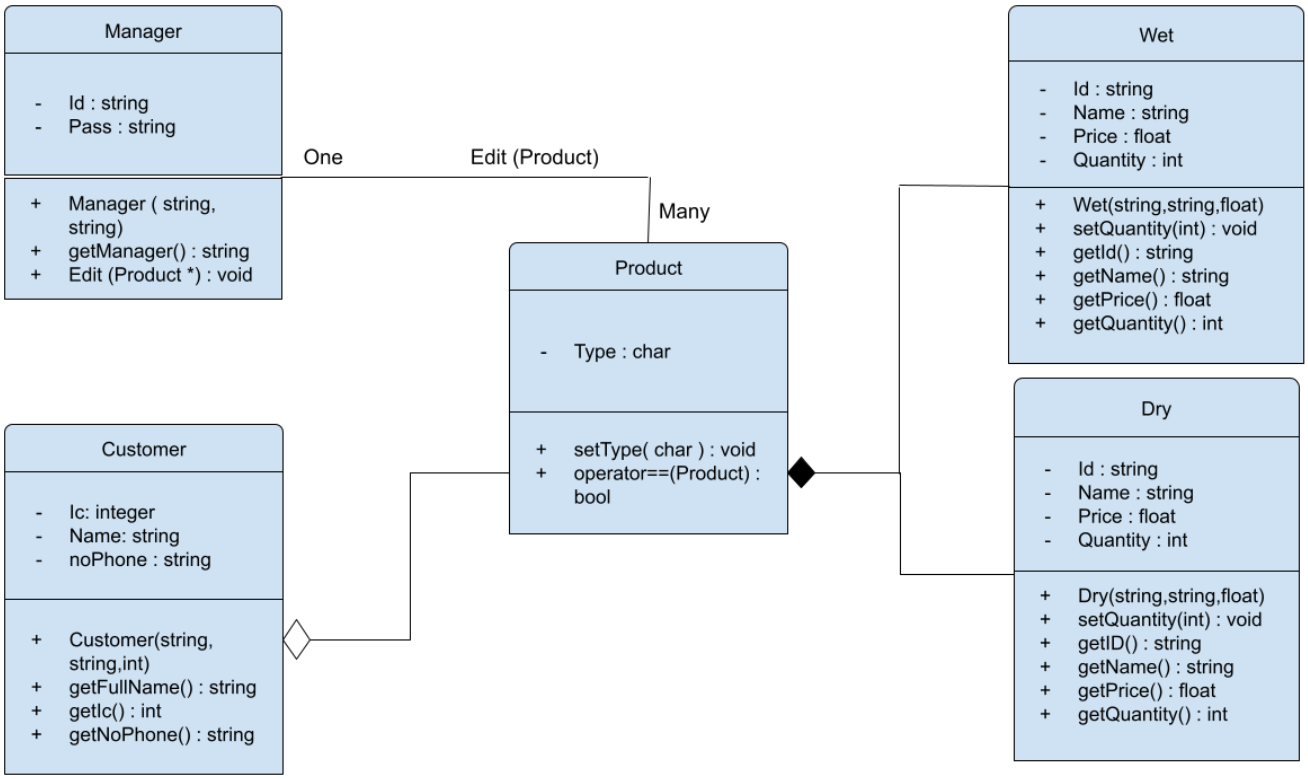
The Shopping system can only be used by the managers and also customers of the market. There are different functions and features that are available for each user of the system. The first system's user which is the market's manager can add new products to the list of available products in the market. Next, the manager also can modify or update the data of existing products. Lastly, the manager is able to delete products from the list of available products in the market.

The second system's user is the customer of the market. They are able to view the list of available products in the market. Next, the customer can add products they would like to buy into their online shopping cart in the system. They also can delete any products in their online shopping cart. Lastly, the customer can get their online shopping bill from the system which will be used for paying for their purchased products.

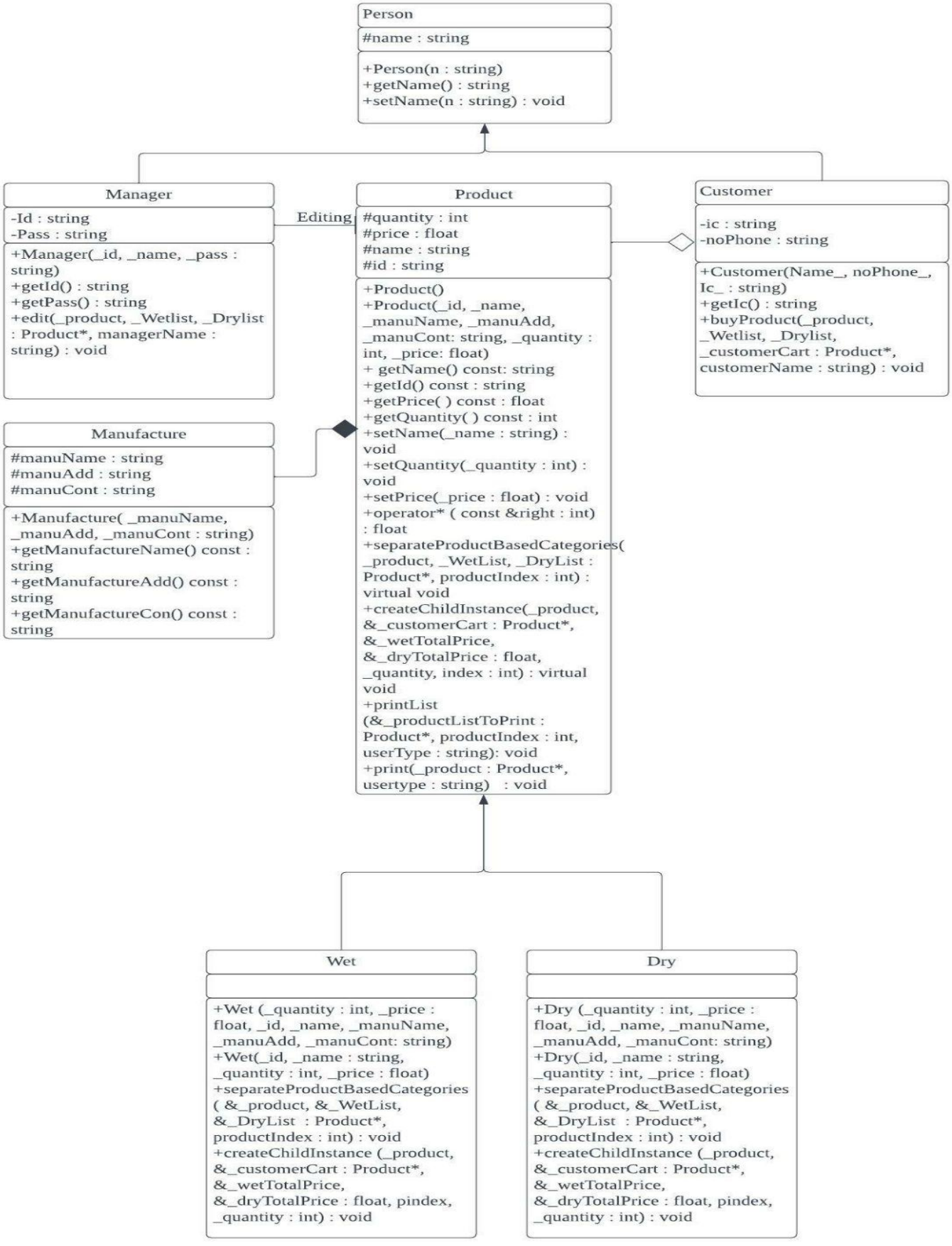
This system can store products with their price and details. Next, products that customers would like to buy can also be stored in the system's online cart. It also can calculate the total bill for customers. Lastly, It can give the bill to the customer.

5.0 Class Design

5.1 Class Diagram (association, aggregation, composition)



5.2 class diagram (continue with inheritance and polymorphism)



6.0 Benefit and Summary of the Proposed System

Since Covid-19 is an endemic condition, we must develop a new effective and fantastic shopping system to control Covid-19 outbreaks and accomplish the objectives. As a result, our excellent technology, which is the shopping system, enables the customer to purchase the products without standing in line to pay for them. Without queuing, we can stop the virus from spreading and make the consumer happier because they no longer have to wait in line because we need to keep our distance from everyone and can lengthen the queue. Additionally, the system enables customers to view, add to, and remove items from their shopping carts with a simple button press. They don't need to carry buckets everywhere because doing so can make them exhausted. This system was put in place to make the work of our users and customers easier. Additionally, the manager can easily update the product in the store when utilizing the system. The client or user can learn indirectly which products are available and which are not after the product list has been updated. Additionally, the number of the products has been updated with each transaction made by the consumer. Therefore, when the management wishes to replenish, there is no need to calculate the product. Moreover, buyers can use the system to determine the quantity and total price of the product they have purchased.

7.0 Video Link

https://drive.google.com/drive/folders/1b9BjC5X94sPOAG2Zvfdwbf_Map263YTb?usp=sharing

Minute : 0.00 - 5.00 : Explain about Person and Manufacture class, and main function (Bukhari)

Minute : 5.00 - 9.12 : Explain about Product, Wet, and Dry class (Amarul)

Minute : 9.12 - 17.50 : Explain about Manager class (Waffi)

Minute : 17.50 - 30.00 : Explain about Customer class (Najwan)

Minute : 30.00 - 39.00 : Explain about the output (Amarul)

8.0 Reference

1. Gilbert, O., Twaibu, S., Umar, S., & Davis, M. (2021). An Analytical Review of Existing Supermarket Billing Systems. *East African Journal of Information Technology*, *4*(1), 1-6.
2. Kim, W. (Ed.). (2001). Characterizing the scalability of a large web-based shopping system. *ACM Transactions on Internet Technology (TOIT)*, *1*(1), 44-69
3. Li, R., Song, T., Capurso, N., Yu, J., Couture, J., & Cheng, X. (2017). IoT applications on secure smart shopping system. *IEEE Internet of Things Journal*, *4*(6), 1945-1954.
4. Hussien, N., Ajlan, I., Firdhous, M. M., & Alrikabi, H. (2020). Smart shopping system with RFID technology based on internet of things..