UNIVERSITI MALAYSIA TERENGGANU

FACULTY OF COMPUTER SCIENCE AND MATHEMATICS

COURSE NAME :

CSF 3023 - SYSTEM THINKING AND LOGIC

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PROGRAMME NAME :

ONLINE BOOK SHOPPING SYSTEM

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1.0 Introduction

1.1 Introduction to the system

This project focuses on analyzing and designing the logic for an Online Book Shopping System. The rapid growth of information technology and the internet has significantly transformed the way people purchase goods, including books. Traditional physical bookstores can require plenty of time and effort to visit and can be restricted by location and working hours, but online buying platforms give greater flexibility and convenience (Laudon & Traver, 2020)

The system also enables the user to browse through the available books and even purchase them through the web interface system. It is also easy for customers to access various categories of books such as academic books, novels, and reference books without visiting the store. This makes online shopping systems more attractive to customers as opposed to the past (Turban et al., 2018).

In view of the administrators or owners of the stores, this system is helpful for efficient management of book listings and client data to ensure a smooth online functioning. The main purpose of this system is to ensure simplified overall book procurement for the client while facilitating efficient management on the back end of the system despite some complexity in the admin tasks (Pressman & Maxim, 2020).

1.2 Project Background

This project's main goal is to analyze and logically develop an online book shopping system. Increased internet connectivity and quick developments in information and communication technology (ICT) have had a big impact on how consumers buy goods and services. Because of this, online book purchasing platforms have become more and more popular as a practical and effective substitute for conventional bookstore shopping, which frequently necessitates customers to physically visit stores and is limited by geography and working hours (Laudon & Traver, 2020).

In view of the contemporary education system and the rising popularity of online shopping, this model is greatly beneficial to students, lecturers, and the general public who seek convenient and effective access to books. It is savvy to acknowledge that online shopping systems provide opportunities to access textbooks, reference books, and others without any form of delay (Turban et al., 2018).

A system-thinking approach would enable the Online Book Shopping System to be broken down into a number of interrelated sub-systems such as the registration sub-system, the search sub-system, the order sub-system, the payment sub-system, and the approval sub-system. This is because a system-thinking approach promotes a systematic flow of a system as well as a positive user experience (Pressman & Maxim, 2020).

2.0 Functional Requirements

2.1 FR1 : User Registration and Login

The system shall allow users to register an account and log in using a valid username and password to access the system. Presented first are Register and Login. Selecting Register leads to entering username and password. These inputs get saved into database. Confirmation appears once data records properly. While choosing Login means typing existing username and password. Verification happens by cross-checking provided entries with stored information in the database. Access granted notice shows when everything aligns. Mismatch triggers warning about incorrect entry.

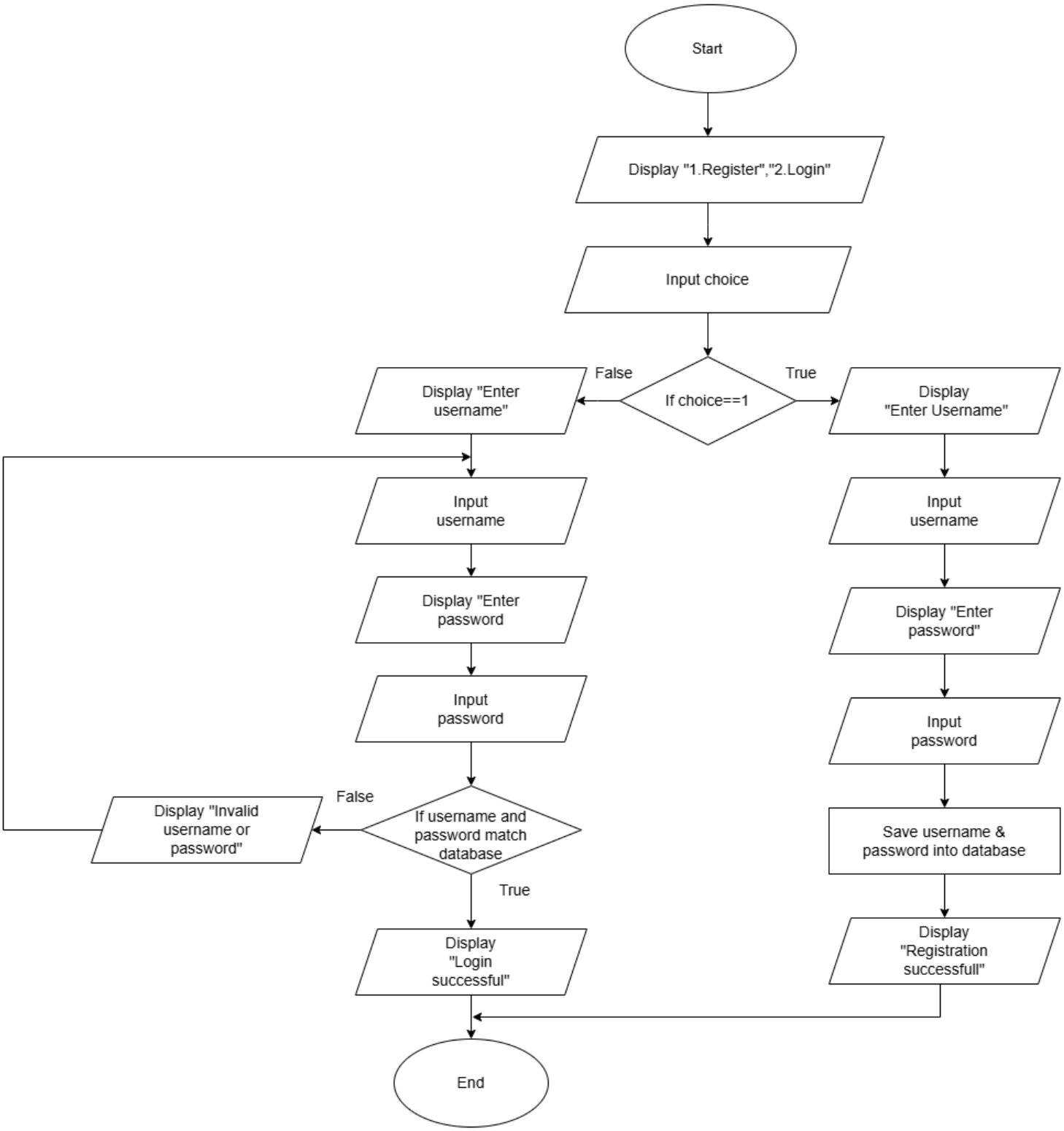

Figure 2.1.1 – Flowchart of User Registration and Login

Pseudocode of User Registraion and Login ;

```
START
        Display  “1. Register”
        Display  “2. Login”
        Input choice
        IF choice == 1 THEN
                Display “Enter Username : “
                Input username
                Display “Enter password:”
                Input password
                Save username and password into database
                Display “Registration successful”
        ELSE IF choice == 2 THEN
                DISPLAY “Enter username:”
                INPUT username
                Display “Enter password:”
                Input password
                        IF username AND password match database THEN
                                Display “Login successful”
                        ELSE
                                Display “Invalid username or password”
                        ENDIF
        ENDIF
    END
```

2.2 FR2 : Browse and Search Books

The system shall allow users to browse book categories and search for books by title, author or genre. The process of browsing and searching books in the system alongside a request for input, either a category name or a keyword. When the given entry lines up with one of those categories, every book within it appears on screen. Otherwise, the system searches for books using the entered keywords like titles, authors, or genres, thus the results are shown to users.

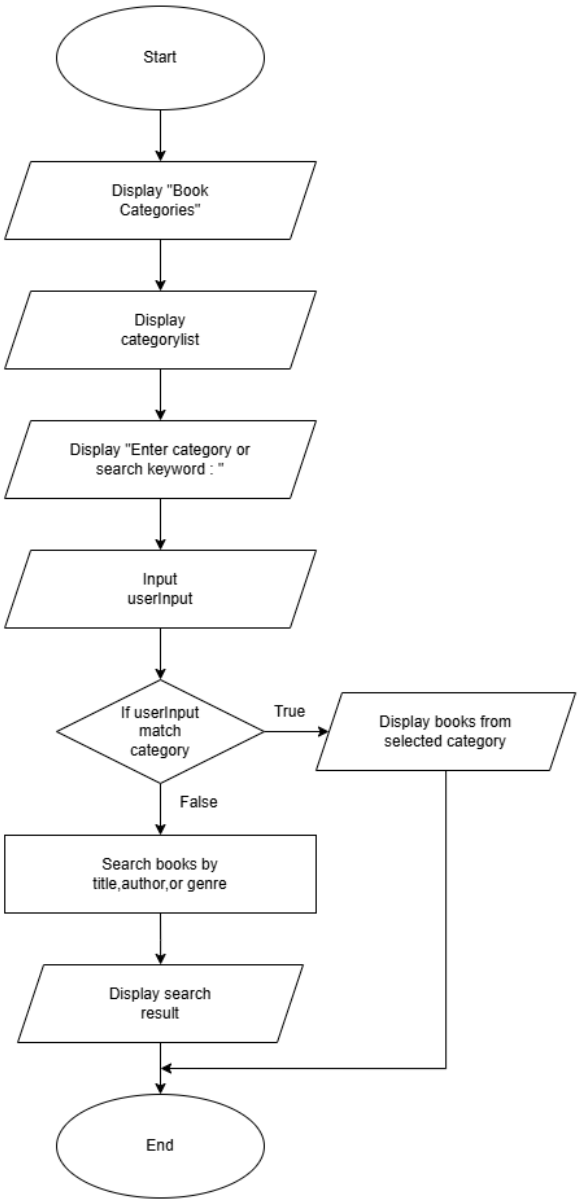

Figure 2.2.1 – Flowchart of Browsing and Searching Books

Pseudocode of Browsing and Searching Books ;

```
START
        Display “Book Categories”
        Display categorylist
        Display “Enter category or search keyword : ”
        Input userInput
        IF userInput match category THEN
            Display books from selected category
        ElSE
            Search books by title, author, or genre
            Display search results
        END IF
    END
```

2.3 FR3 : View Book Details

The system shall allow users to view detailed information of a selected book, including price, description, and availability. Its explains how the system allows user to view detailed information about the selected book. The process begins when books appear on screen. A request follows for user to enter the book ID. Once typed, the system pulls exact data from database. Out comes every fact tied to it such as the title, author, price, description, and current availability, allowing the user to clearly understand the selected book before making any decision to buy.

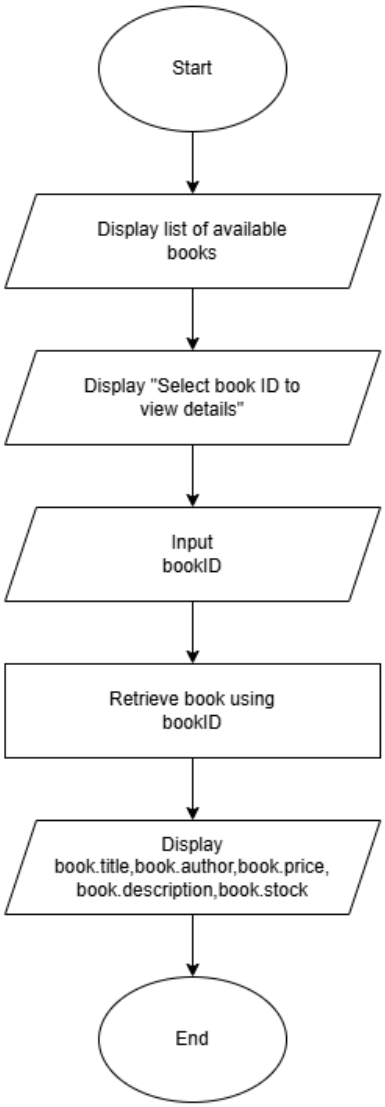

Figure 2.3.1 – Flowchart for Viewing Book Details

Pseudocode of Viewing Book Details ;

```
START
        Display list of available books
        Display “Select book ID to view details”
        Input bookID
        Retrieve book using bookID
            Display “Title : “,book.title
            Display “Author : “,book.author
            Display “Price : “,book.price
            Display “Description : “,book.description
            Display “Availability : “,book.stock
    END
```

2.4 FR4 : Add Books to Shopping Cart

The system shall allow users to add selected books to a shopping cart and update the quantity before checkout. First, the chosen book's info shows up on screen. It then asks for the desired quantity. Once entered, what comes after depends on whether the requested amount is less than or equal to the available stock. If sufficient stock is available, the book and the selected quantity are added to the shopping cart, and a confirmation message is displayed. When too few remain, the system informs the user that there is no stock available.

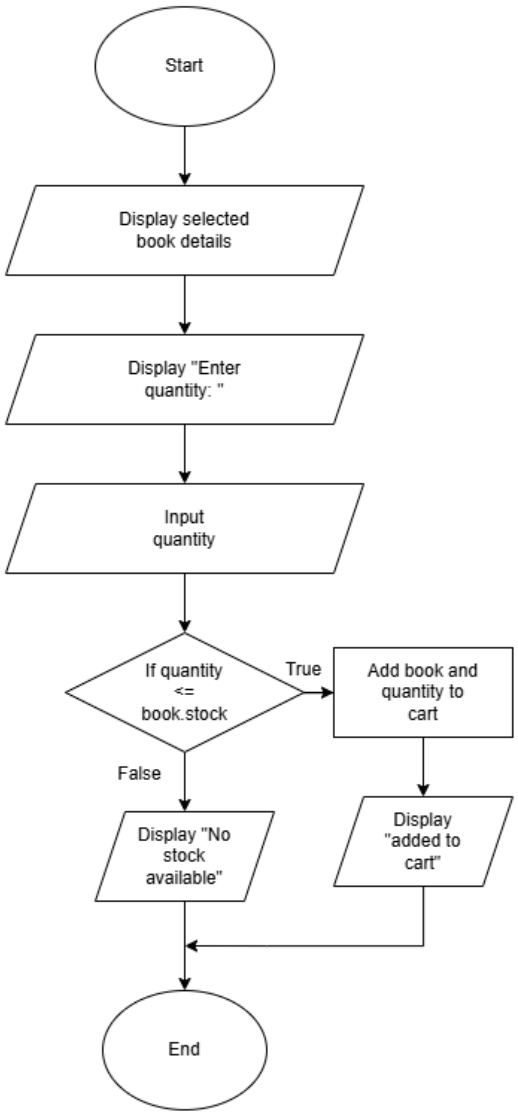

Figure 2.4.1 – Flowchart of Adding Books to Shopping Cart

Pseudocode of Adding Books to Shopping Cart ;

```
START
        Display selected book details
        Display “Enter quantity :”
        Input quantity
        IF quantity <= book.stock THEN
            Add book and quantity to cart
            Display “added to cart”
        ELSE
            Display “No stock available”
        ENDIF
    END
```

2.5 FR5: Checkout and Place Order

The system shall allow users to proceed to checkout, confirm their order, and receive an order confirmation after successful purchase. First, Items inside the cart show up on screen with the total price. The user is then asked whether they want to proceed to checkout. Choosing "Yes" moves things forward as the system will start to process the payment. If successful, order ID is shown and a confirmation message saying that the order has been placed successfully is displayed. When payments do not go through, the user gets informed of the failure. Should they decide to not proceed with checkout, they system cancels the process and displays a checkout cancelled message.

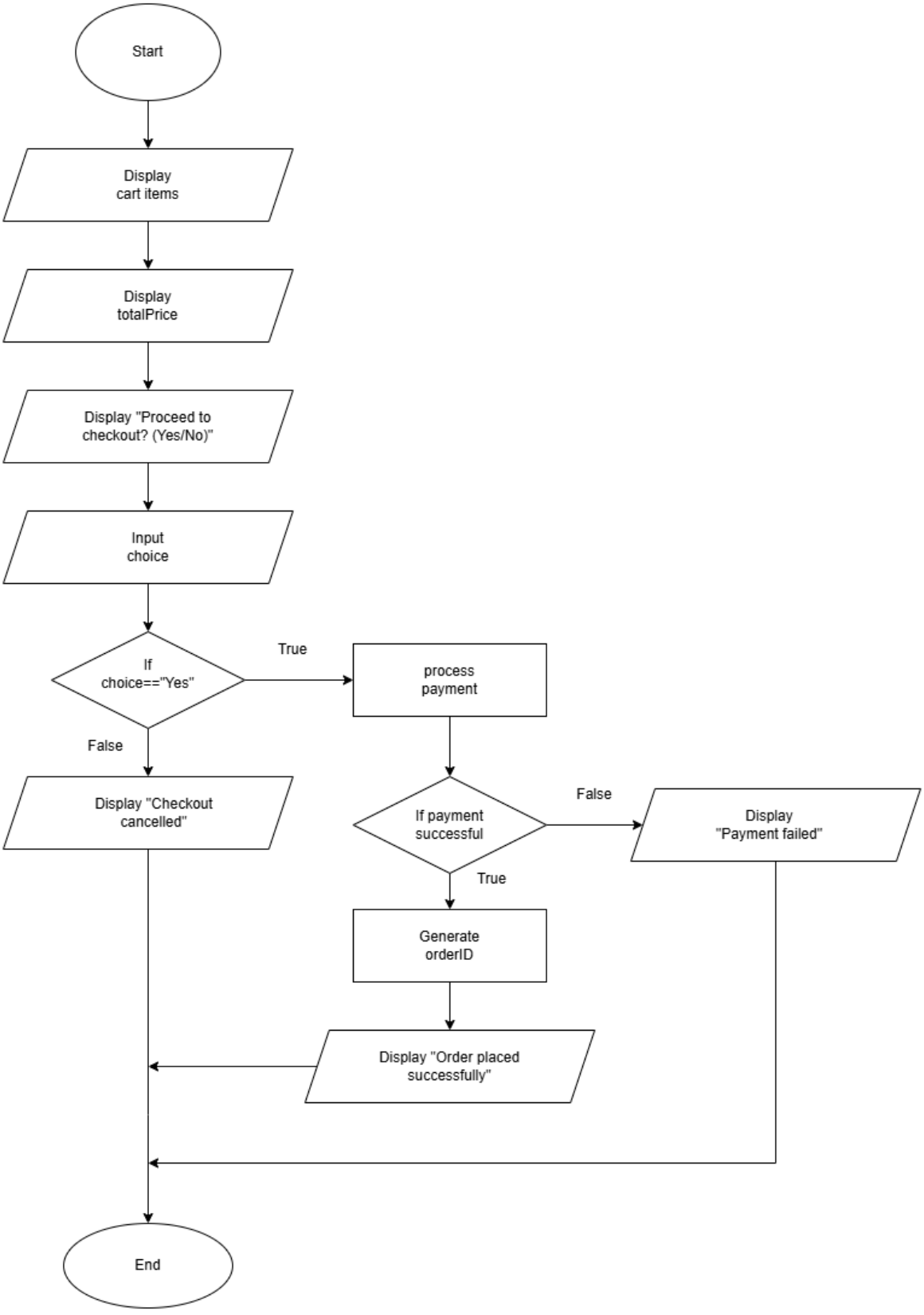

Figure 2.5.1 – Flowchart of Checking Out and Placing Order

Pseudocode of Checking Out and Placing Order ;

```
START
        Display cart items
        Display totalPrice
        Display “Proceed to checkout? (Yes/No)”
        IF choice == “Yes” THEN
            process payment
            IF payment successful THEN
                Generate orderID
                Display “Order placed successfully”
            ELSE
                Display “Payment failed”
            ENDIF
        ELSE
            Display “Checkout cancelled”
        ENDIF
    END
```

References

Laudon, K. C., & Traver, C. G. (2020). E-commerce: Business, technology, society (16th ed.). Pearson Education.

Pressman, R. S., & Maxim, B. R. (2020). Software engineering: A practitioner's approach (9th ed.). McGraw-Hill Education.

Turban, E., Outland, J., King, D., Lee, J. K., Liang, T. P., & Turban, D. C. (2018). Electronic commerce: A managerial and social networks perspective (9th ed.). Springer.