

**LAB EXERCISE 3 (SECJ1013)**  
**PROGRAMMING TECHNIQUE 1**  
**SECTION 04, SEM 1, 2024/2025**

**INSTRUCTIONS TO THE STUDENTS**

- You must complete this exercise ***individually***.
- Ensure that your solution follows the input and output format specified in the problem text and illustrated in the examples. You should test your solution using all provided example inputs and additional test cases as needed.
- Plagiarism is strictly ***prohibited***. Any students found copying or sharing their solutions will receive a score of ***ZERO*** (this applies to both parties involved).
- Include your name, matrices number, and the date as a comment at the beginning of your solution.

**SUBMISSION PROCEDURE**

- Submit this exercise by Monday, November 11, 2024, no later than 10:00 am.
- Only one file is required for submission: the source code file (with the extension .cpp).
- Submit your exercise through UTM's e-learning system.

**QUESTION**

Write a C++ program to simulate a simple grocery store checkout system. The program should allow users to select items from a list (refer to **Table 1**) by entering an item code. If the user enters an invalid item code, display an error message and ask them to re-enter. Once a valid item is selected, prompt the user to enter the quantity they wish to purchase (in kg).

Calculate the total cost based on the selected item and quantity. The user can continue adding items until they choose to stop. After each entry, ask the user if they would like to purchase another item. The user can type 1 to continue or press any other key to stop. When the user chooses to stop, display the total quantity of items purchased and the total price. **Figure 1** shows an example of the program's output.

**Hint:** Use a ***nested loop*** to handle item selection and quantity input, and use ***conditional statements*** to validate inputs and determine if the user wants to continue or stop.

**Table 1:** Item List for Purchase

Code	Item	Price per kg
A	Apples	RM3.50
B	Bananas	RM2.80
C	Carrots	RM1.60
D	Dates	RM8.20

```
Welcome to FreshMart Grocery!
Available items:
A - Apples (RM3.50 per kg)
B - Bananas (RM2.80 per kg)
C - Carrots (RM1.60 per kg)
D - Dates (RM8.20 per kg)

Enter item code: A
Enter quantity (in kg): 2
Do you want to purchase another item? (Press 1 to continue): 1

Enter item code: M
Invalid item code! Please enter a valid code (A, B, C, or D).

Enter item code: B
Enter quantity (in kg): 3
Do you want to purchase another item? (Press 1 to continue): 0

Total quantity of items purchased: 5kg
Total price: RM15.4
```

***Note:** The text in **bold** indicates user input.*

**Figure 1:** Example of outputs