

## Activity 6

Create a program for a bookstore that keeps track of the inventory and allows customers to purchase books.

1. Create an array for the following books in stock: BookA, BookB, BookC, BookD.
2. Create an array for the book prices: 10.99, 15.99, 12.50, 9.75.
3. Create an array for the quantity in stock for each book: 5, 3, 7, 2.

Processing:

Loop:

```
{
    Output the stock list. (For each book – example - 1. BookA £10.99 (5 in stock))
    Request book number (to be purchased).
    If the book selected is valid
    {
        request quantity to be purchased.
        If there is enough stock
        {
            Output the total price.
            Update the quantity in stock array to account for purchase.
            Output the Total Revenue (running total of total price)
        }
        else (not enough stock)
        {
            Output message regarding not enough stock
        }
    }
    else (book invalid)
    {
        Output message regarding invalid book number
    }
    Output Total Revenue
    Output the stock list. For each book – example - 1. BookA £10.99 Qty in
    Stock: 5. Stock Value = £54.95 (qty in stock x Price)
```

```

import java.util.Scanner;
class Main
{
    public static void main(String[] args)
    {
        Scanner input = new Scanner(System.in);
        // Declare arrays and avariables
        String[] books = {"Book A", "Book B", "Book C", "Book D"};
        double[] prices = {10.99, 15.99, 12.50, 9.75};
        int[] quantities = {5, 3, 7, 2};
        double totalRevenue = 0;

        // Loop until 0 entered
        while (true)
        {
            // Output stock list
            System.out.println("\nAvailable Books:");
            for (int i = 0; i < books.length; i++)
            {
                System.out.println((i + 1) + ". " + books[i] + " - £" + prices[i] + " (" + quantities[i] + " in stock)");
            }
            System.out.print("\nEnter the book number to purchase (0 to exit): ");
            int choice = input.nextInt();
            if (choice == 0) // If 0 entered - end loop
            {
                break;
            }
            else if (choice >= 1 && choice <= books.length) // Check if number enetered is between 1 and 4
            {
                int index = choice - 1; // subtract one from book number as the index no. the array will be one less
                if (quantities[index] > 0) // Check if there is any stock for then selected book
                {
                    System.out.print("Enter the quantity to purchase: ");
                    int quantityToPurchase = input.nextInt();
                    if (quantityToPurchase <= quantities[index]) // Check if there is enough stock for then selected book
                    {
                        double subtotal = prices[index] * quantityToPurchase; // Calculate the price
                        System.out.println("Subtotal: £" + subtotal);
                        totalRevenue += subtotal; // Running total
                        quantities[index] -= quantityToPurchase; // subtract qty purchased from stock
                    }
                    else // Not enough stock
                    {
                        System.out.println("Not enough stock available.");
                    }
                }
                else // No stock
                {
                    System.out.println("Sorry, this book is out of stock.");
                }
            }
            else // Invalid book number
            {

```

```

        System.out.println("Invalid choice. Please try again.");
    }
}
System.out.println("\nTotal Revenue: $" + totalRevenue); // Output Total revenue
// Output stock list
System.out.println("\nAvailable Books:");
for (int i = 0; i < books.length; i++)
{
    Double stockValue= prices[i] * quantities[i];
    System.out.println((i + 1) + ". " + books[i] + " - £" + prices[i] + " Qty in Stock: " + quantities[i] + " Stock
Value: £" + stockValue);
}
input.close();
}
}

```

In this program:

1. We have arrays `books`, `prices`, and `quantities` to store information about available books, their prices, and the quantities in stock.
2. We use a `while` loop to continuously display the available books and allow the user to make purchases.
3. The user can select a book by entering its number. They can also choose to exit by entering `0`.
4. The program checks if the choice is valid and if the selected book is in stock.
5. If the book is in stock, the user is prompted to enter the quantity they want to purchase. If there is enough stock, the subtotal is calculated and added to the total revenue. The quantity in stock is updated accordingly.
6. If the user attempts to purchase more books than are in stock, or if a choice is invalid, appropriate messages are displayed.
7. The program continues until the user chooses to exit, at which point the total revenue for the purchases is displayed as well as the value of all stock items.