Problem Based Learning 14

Topic : File Handling

1. A country has a number of banks. There are cash dispensers all over the country. Each bank is responsible for a number of dispensers.

(i)

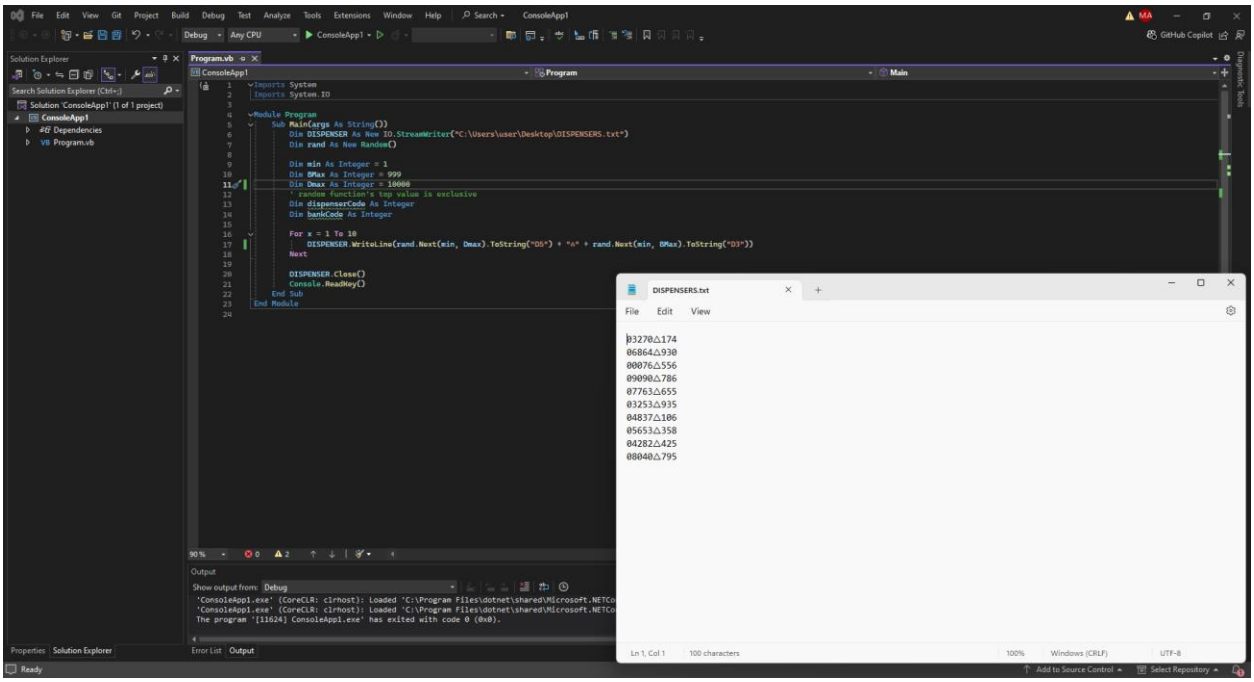
- banks have a three digit code in the range 001 – 999
- each dispenser has a five digit code in the range 00001 – 99999

A text file, `DISPENSERS`, is to be created.

It has one line of text for each dispenser. For example: `00342▼007`.

This line in the file is the data for dispenser `00342` which belongs to bank `007`.

Write a program to create the file and store 10 records in the given format as per the question.



(ii) Write the program to do the following:

A new program is to be written to search the file.

The program will:

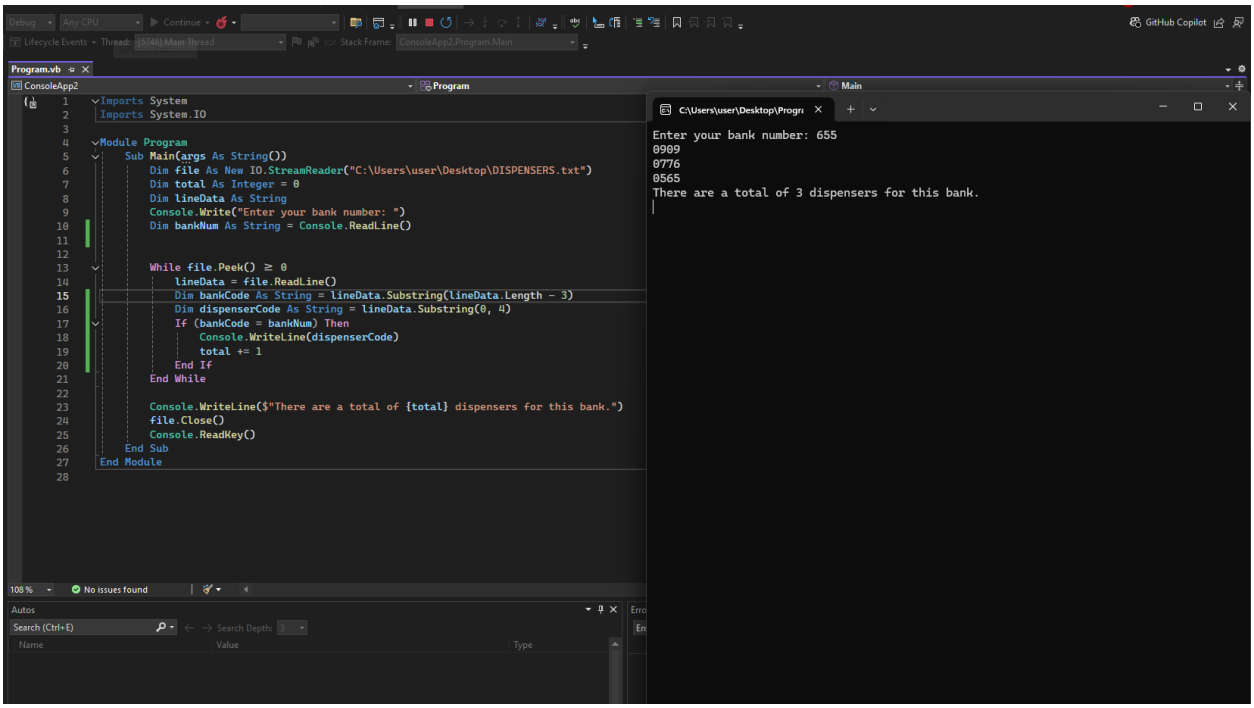
- input a bank code
- output a list of all the dispensers which belong to this bank
- output the total number of dispensers for this bank

```
00001▼007
00002▼001
00003▼002
00004▼003
00005▼101
00006▼004
00007▼004
   ∫
00024▼002
00025▼003
00026▼007
00027▼007
00028▼102
   ∫
99867▼013
```

An example of a run of the program is shown:

```
Enter bank code 007
00001
00011
00022
00026
00027

There are 5 dispensers for this bank
```

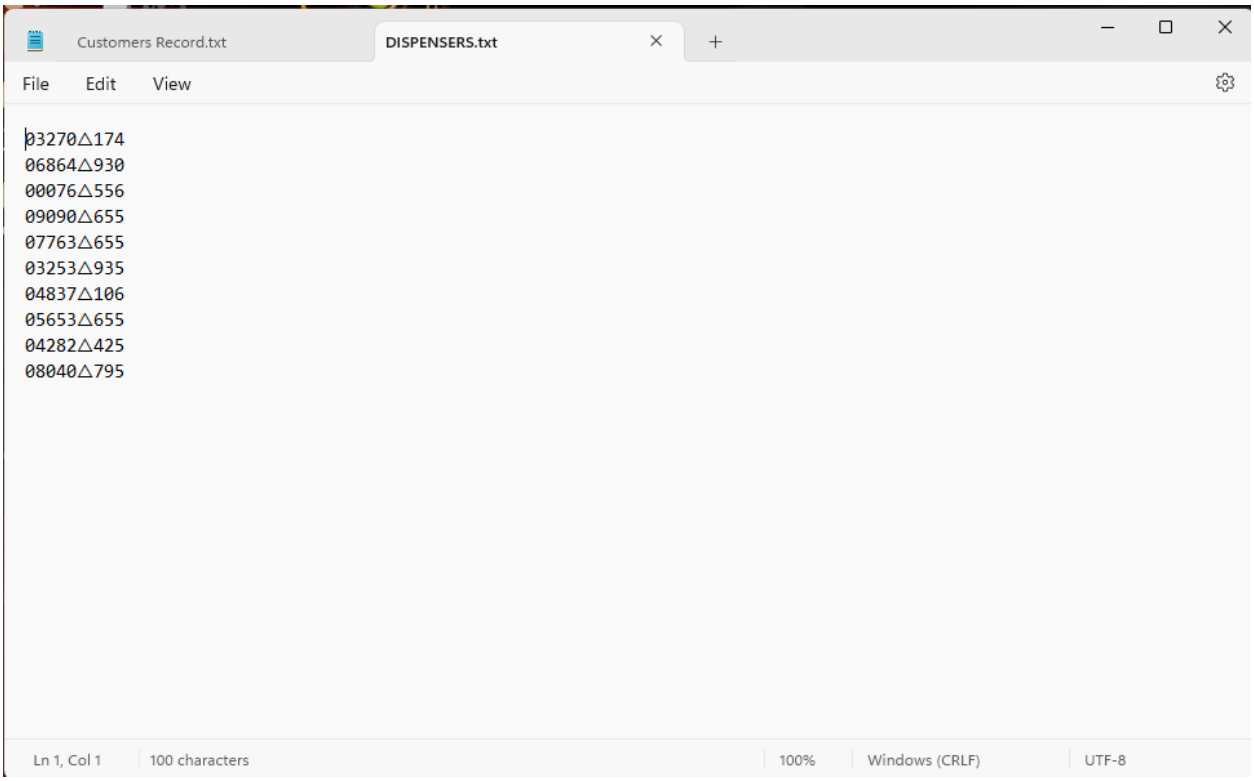
Answer for Question 2:



```
Imports System
Imports System.IO

Module Program
    Sub Main(args As String())
        Dim file As New IO.StreamReader("C:\Users\user\Desktop\DISPENSERS.txt")
        Dim total As Integer = 0
        Dim lineData As String
        Console.Write("Enter your bank number: ")
        Dim bankNum As String = Console.ReadLine()


        While file.Peek() ≥ 0
            lineData = file.ReadLine()
            Dim bankCode As String = lineData.Substring(lineData.Length - 3)
            Dim dispenserCode As String = lineData.Substring(0, 4)
            If (bankCode = bankNum) Then
                Console.WriteLine(dispenserCode)
                total += 1
            End If
        End While

        Console.WriteLine($"There are a total of {total} dispensers for this bank.")
        file.Close()
        Console.ReadKey()
    End Sub
End Module
```

```
Enter your bank number: 655
0909
0776
0565
There are a total of 3 dispensers for this bank.
```

.txt file



2. A car hire company hires cars to customers. Each time a car is hired, this is treated as a transaction.

   For each transaction, the following data are stored.

   For the customer:

   - customer name
   - ID number

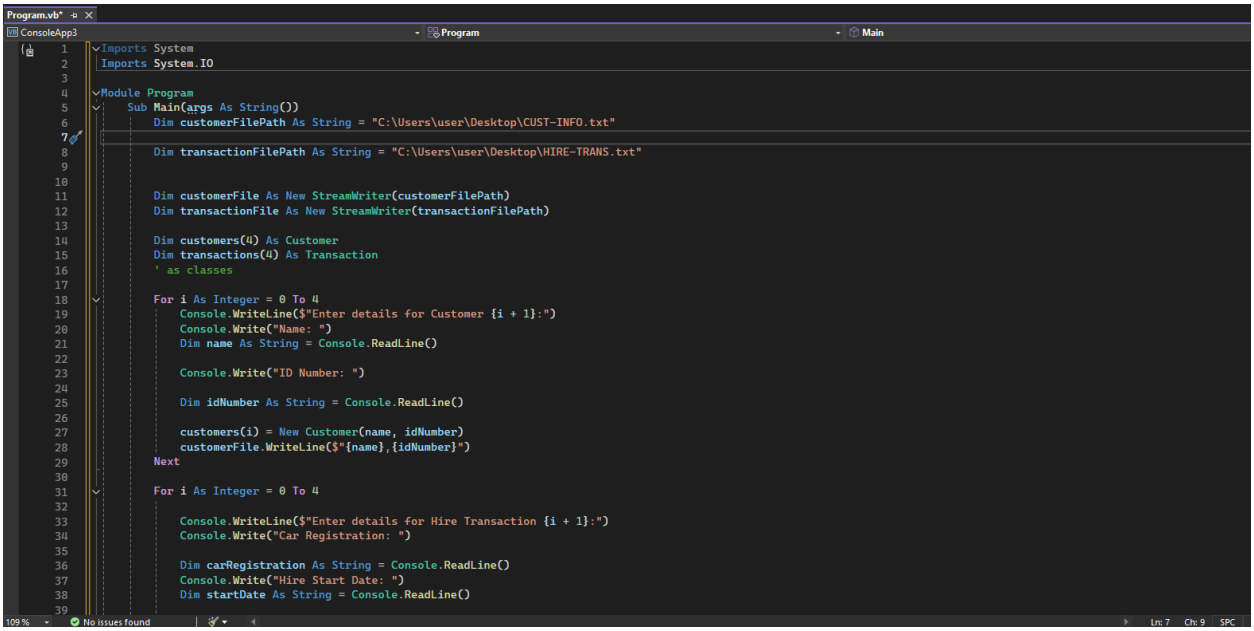
   The customer data are stored in a text file CUST-INFO.

   For the hire:

   - car registration
   - hire start date
   - number of days hired

   The transaction data are stored in a text file HIRE-TRANS.

   Write a program that will store the data for 5 new customers and 5 hire transactions.



3. A theatre company stores customer login details to allow customers to book tickets online.

Each customer's details are stored in a record.

The declaration for CustomerRecord is:

TYPE CustomerRecord

DECLARE UserID : STRING

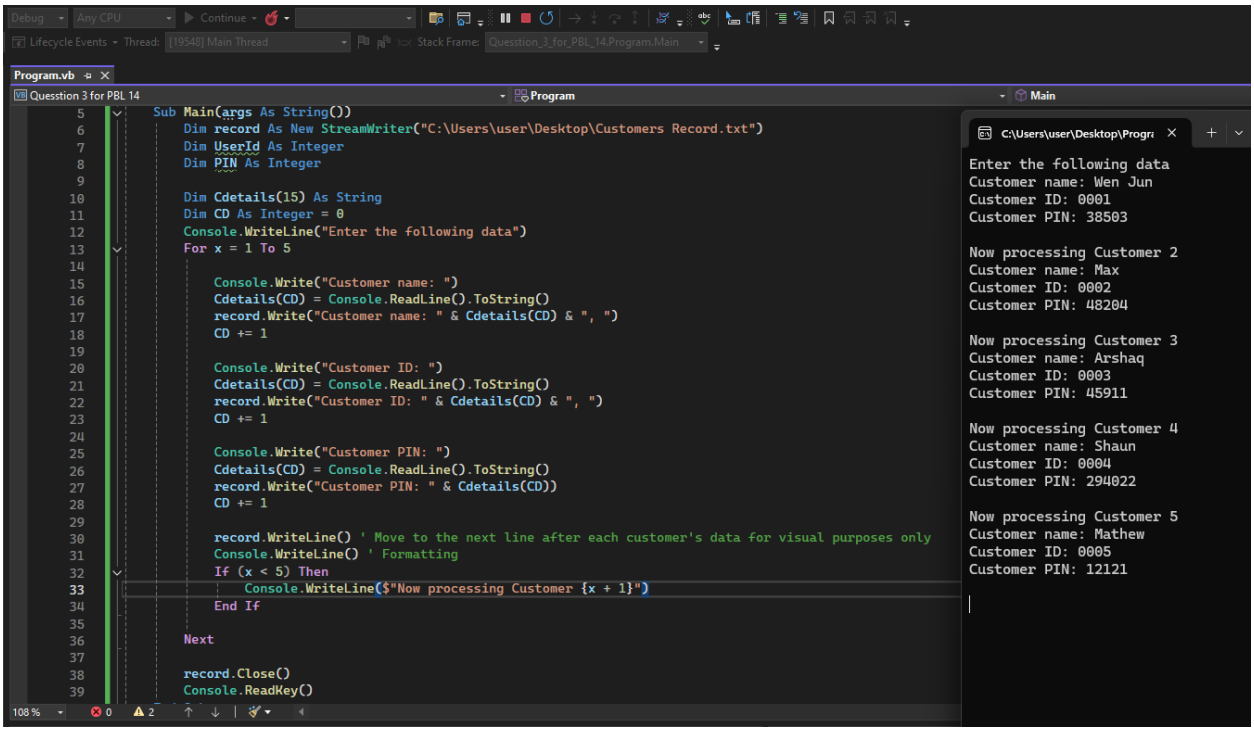
DECLARE PINNumber : INTEGER

ENDTYPE

A 1D array, CustomerDetails, is used to to store the data.

Write a program to store details of 5 customers.

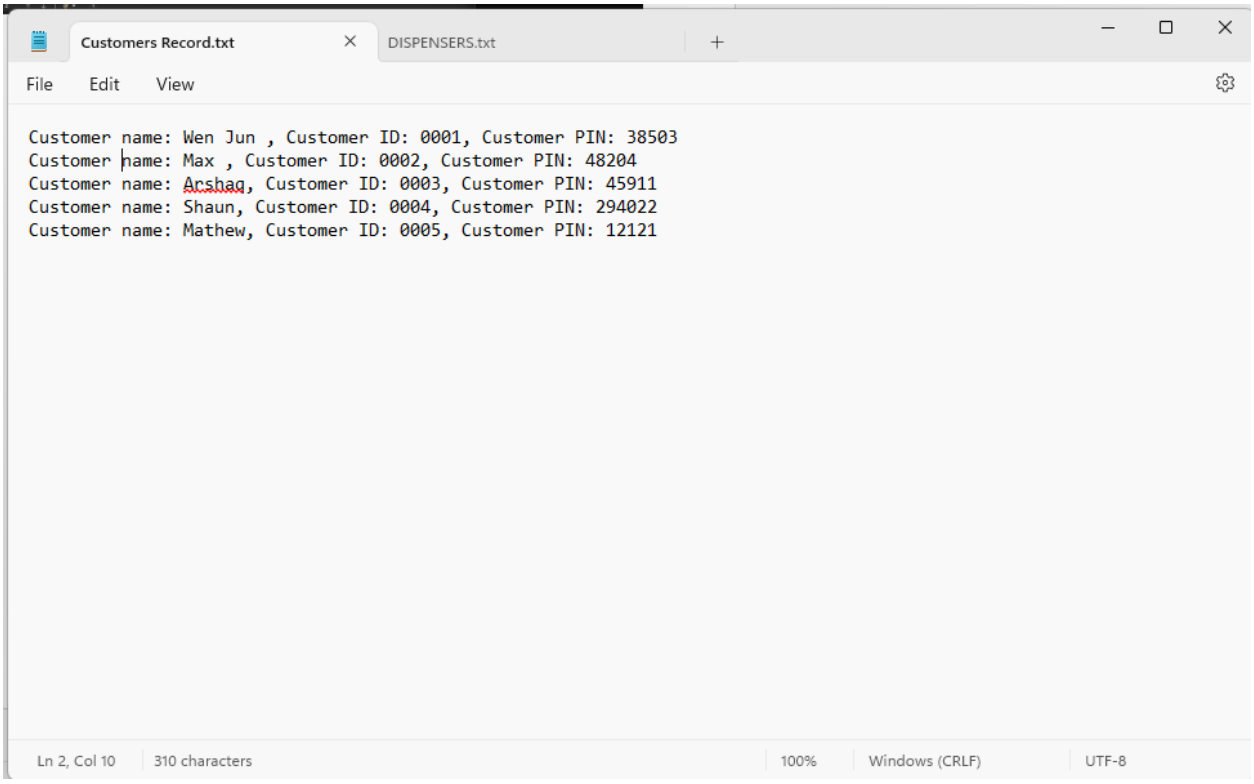
(Next Page)



```vb
Sub Main(args As String())
    Dim record As New StreamWriter("C:\Users\user\Desktop\Customers Record.txt")
    Dim UserId As Integer
    Dim PIN As Integer

    Dim Cdetails(15) As String
    Dim CD As Integer = 0
    Console.WriteLine("Enter the following data")
    For x = 1 To 5

        Console.Write("Customer name: ")
        Cdetails(CD) = Console.ReadLine().ToString()
        record.Write("Customer name: " & Cdetails(CD) & ", ")
        CD += 1

        Console.Write("Customer ID: ")
        Cdetails(CD) = Console.ReadLine().ToString()
        record.Write("Customer ID: " & Cdetails(CD) & ", ")
        CD += 1

        Console.Write("Customer PIN: ")
        Cdetails(CD) = Console.ReadLine().ToString()
        record.Write("Customer PIN: " & Cdetails(CD))
        CD += 1

        record.WriteLine() ' Move to the next line after each customer's data for visual purposes only
        Console.WriteLine() ' Formatting
        If (x < 5) Then
            Console.WriteLine($"Now processing Customer {x + 1}")
        End If

    Next

    record.Close()
    Console.ReadKey()
```

```
Enter the following data
Customer name: Wen Jun
Customer ID: 0001
Customer PIN: 38503

Now processing Customer 2
Customer name: Max
Customer ID: 0002
Customer PIN: 48204

Now processing Customer 3
Customer name: Arshaq
Customer ID: 0003
Customer PIN: 45911

Now processing Customer 4
Customer name: Shaun
Customer ID: 0004
Customer PIN: 294022

Now processing Customer 5
Customer name: Mathew
Customer ID: 0005
Customer PIN: 12121
```

.txt file



Customers Record.txt | DISPENSERS.txt

File Edit View

```
Customer name: Wen Jun , Customer ID: 0001, Customer PIN: 38503
Customer name: Max , Customer ID: 0002, Customer PIN: 48204
Customer name: Arshaq, Customer ID: 0003, Customer PIN: 45911
Customer name: Shaun, Customer ID: 0004, Customer PIN: 294022
Customer name: Mathew, Customer ID: 0005, Customer PIN: 12121
```

Ln 2, Col 10 | 310 characters | 100% | Windows (CRLF) | UTF-8