Business Applications Programming

Assignment 3 (25%)

Please complete the following exercise and submit your solution online by **Friday 4th November @ 5pm** at the latest. Your submission should have two parts (A) your full application solution folder (zipped) to the designated dropbox on Blackboard, and (B) your source code in a word document to the Turnitin dropbox provided (no screenshots required). Note only one submission is accepted.

Mad4Road Application:

Your client Mad4Money Bank Corp is a financial services company that offers various financial products to its customers. One of these is a car loan product called '*Mad4Road*', in which a client can borrow between €10,000 and €100,000 over terms of up to 7 years. The interest rate offered to each client depends on the amount and term of the loan requested. Your company has been commissioned to create a well-designed application for employees to process client transactions for this product.

Normal Flow of Events

When the application loads, the user has to enter a password before being able to view any details or pricing. The password is '**2Fast4U#**'. If the user enters an incorrect password, they should be notified & asked to try again. If the user enters the wrong password on two occasions the application closes with a message to the user.

A client on expressing interest in the '*Mad4Road*' product is asked how much they wish to borrow; this value is inputted into the application and the *Display* button is pressed. The application displays (for each of the four terms offered) the applicable interest rate, the monthly repayment, total interest paid, and the total cost of the loan at the end of the term,

If the potential client chooses a loan term they wish to borrow for, the employee selects this option and presses the **Proceed** button. The application displays a randomly generated five-character transaction ID. Textboxes are provided for inputting the clients' details (full name, postcode, telephone number & email address). After these details are entered and the **Submit** button is pressed, the application displays the full details of the loan, the transaction number, and the client's details. The system prompts the employee to gain final confirmation of the loan from the client. If the client confirms that they wish to proceed, the transaction is saved persistently to text file by the application.

Car Loans below €40,000	
Term	Interest Rate - APR
1 Year	6.00%
3 Years	6.50%
5 Years	7.00%
7 Years	7.50%
Car Loans above €40,000	
Term	Interest Rate - APR
1 Year	8.00%
3 Years	8.50%
5 Years	9.00%
7 Years	9.50%
Car Loans above €80,000	
Term	Interest Rate - APR
1 Year	8.50%
3 Years	8.75%
5 Years	9.10%
7 Years	9.25%

Loans of over 5 or more years receive free AA road side assistance for the duration of the loan

Table 1: Interest Rate Schedule

Additional Required Functionality

- If a manager wishes to see the number of loan transactions processed to file, he/she/they presses the *Summary* button after which the system displays (from file) the total amount borrowed, the total interest accruing on the loans, the average amount borrowed, and the average duration a of loan (in months).

- The application should allow a user to *Search* previous loan transactions by entering a transaction number for a single transaction or a client email if searching for multiple transactions by the same client. If the search term is found, the full details of the transaction(s) is displayed.

- A minimum of **four** methods are required to be developed with this application, with at least two being value returning methods.

Design Notes

- Follow principles of good Ux design.

- Handle any exceptions that could occur in your project & provide user input validation as needed.

- This is a single form project.

- Use of any collection (list, array etc.) and their methods is strictly prohibited. This includes the use of list view, data grid controls, along with any database.