Faculty of Engineering and Information Technology
School of Software

31927 - Applications Development with .NET
32998 - .NET Applications Development

SPRING 2019
ASSIGNMENT - 1 SPECIFICATION

Due date	Monday 11:59pm, **16th September 2019**
Demonstrations	Required in the lab/tutorial session
Marks	35% of the total marks for this subject
Submission	Complete project folder zip (Code, solution files, etc.), any instructions to run the program in a text file
Submit to	UTS Online assignment submission
Note: This assignment is individual work.	

Summary

This assessment requires you to develop a Simple Bank Management Systems using C#. Bank account details, user data, banking transactions etc. are to be stored in files. It has to be a C# console application. The specification/requirements are detailed in the rest of the document.

Students need to submit the complete project folder in zip format, which will have the complete C# code, solution file, data files etc. required to run/test the program. Any special instructions required to run the code has to be provided in a text file.

Assignment Objectives

The purpose of this assignment is to demonstrate competence in the following skills**.**

- Ensure firm understanding of the .Net framework, C# basic and syntax
- Understand how the .NET framework implements OO concepts and the implications this has for new language design
- Array and string manipulation
- Creating custom classes and methods in C#
- File operations and handing in C#
- Creating interactive console applications
- Create good OO design.

Tasks:

In this assignment you need to develop a menu driven Simple Bank Management Systems using C#. Bank account details, user data, banking transactions etc. should be stored/saved in files. The components/menu items that should be in the screen/console are described below, but you are free to add more options as appropriate based on your application design. It should be a console app.

1. Login Menu:

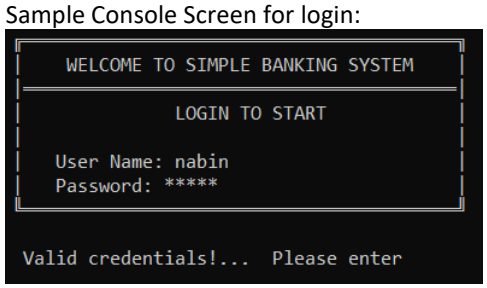
Functionality: Provide secured access to the banking system.
Input fields required:

- *Username* : Display the typed characters as it is
- *Password* : Display "*" instead of the actual characters

Field checks required:

1. Username and Password to be cross checked with the valid Credentials available in the file to store the login details (**login.txt**)
2. Username should be unique

Sample Console Screen for login:



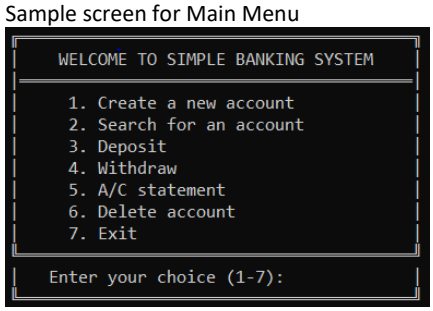
Display appropriate error message if the credentials are invalid and allow to re-enter the values.

2. Main Menu:

Functionality: Used to navigate through the system using certain options related to common banking operations.
Menu item required:

1. ***Create a new account****:* To create a new account and store it in the respective account file
2. ***Search for an account*****:** Search for an account using account number
3. ***Deposit***: Deposit money in a valid account
4. ***Withdraw***: Withdraw a valid amount for an account
5. ***A/C statement***: Display account statement for a valid account number
6. ***Delete account***: Delete the account
7. ***Exit***: Exit from the application or return back to the login screen
8. Ask user to select an item number(1-7) from the menu (See sample screen)

Sample screen for Main Menu



Field checks required:

- The item number selected should be an integer
- Check for a valid input (1-7) else return back to the menu without any error.
- Check for a non-integer input and return back to the menu without any error.

3. Create a new account:

Functionality: Create a new account in the banking system
Input fields required:

- *First Name* : Text field
- *Last Name*: Text field
- *Address*: Text field
- *Phone*: Integer
- *Email*: Text field

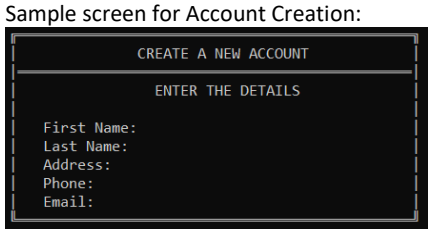
Field checks required:

1. Phone: Integer, should not be more than 10 characters
2. Email: Check if the entered string has "@" (required), "gmail.com", "outlook.com", and "uts.edu.au" in the domain (optional)

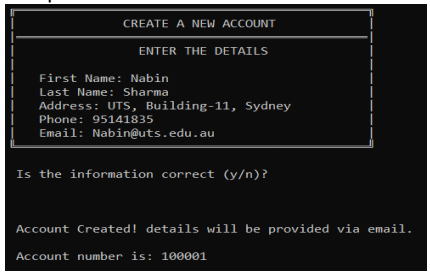
If the information was correct in the input fields:

a. Create a file with the name **<account_number>.txt** and save all the information in a proper format, which makes it easy to retrieve.

Sample screen for Account Creation:



Sample screen after account creation:



b. Generate a unique account number (6-8 digits) and display it.
c. Email the account details to the email ID provided.
d. Return to the Main menu upon-key press.

4. **Search for an account:**

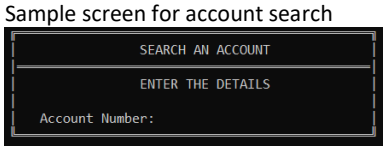
Functionality: Search for a valid account and display the account details if an account is found

Input fields required:
- *Account Number*: integer

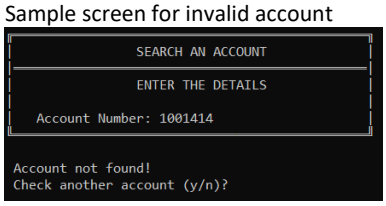
Field checks required:
1. *Account number*: Integer, should not more than 10 characters.
   If an invalid account number is provided, appropriate error message should be provide, with an option to re-enter/check another account.
   If the account number is valid, display the account details similar to as shown in the sample screen.

Once the search is complete, return to the Main Menu.

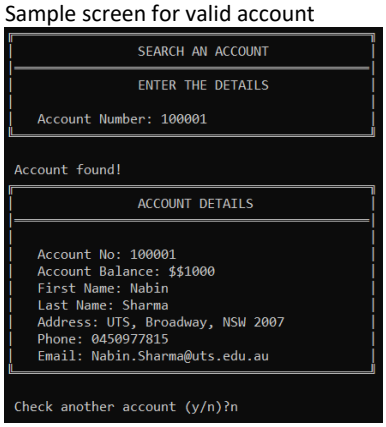
Sample screen for account search



Sample screen for invalid account



Sample screen for valid account



5. **Deposit:**

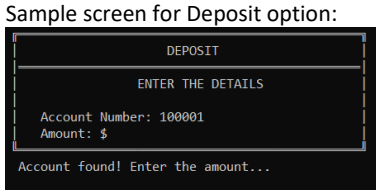
Functionality: Search for a valid account and deposit the provided amount in the account.

Input fields required:
- *Account Number*: integer

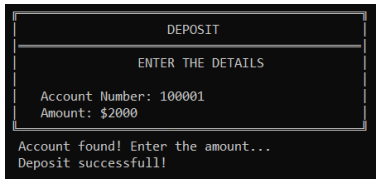
Field checks required:
1. *Account Number*: Integer, should not more than 10 characters.
   If an invalid account number is provided, appropriate error message should be display, with an option to re-enter/check another account.

If the account number is valid allow user to enter the amount to deposit. Update the account balance and update the information in the files for the account. Once the deposit is successful, return to the Main Menu.

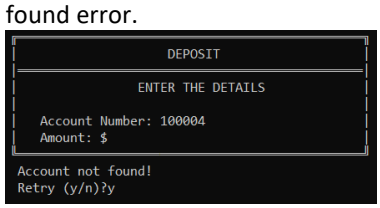
Sample screen for Deposit option:



Sample screen for deposit successful



Sample screen for account not found error.



6. Withdrawal:

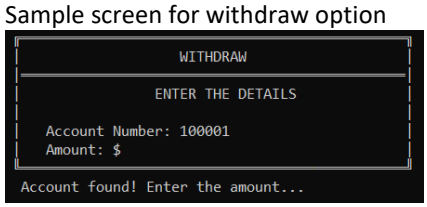
Functionality: Search for a valid account and withdraw the provided amount from the account.

Input fields required:
- *Account Number*: integer

Field checks required:
1. *Account number*: Integer, should not more than 10 characters.
   If an invalid account number is provided, appropriate error message should be displayed, with an option to re-enter/check another account.

If the account number is valid allow user to enter the amount to withdraw. If the withdrawal amount is less the balance, display appropriate error message. Update the account balance after withdrawal and in the files for the account. Once the withdrawal is successful, return to the Main Menu.

Sample screen for withdraw option



Sample screen for successful withdraw

7. Account Statement:

Functionality: Search for a valid account, display and email the statement to the email address provided in the account.

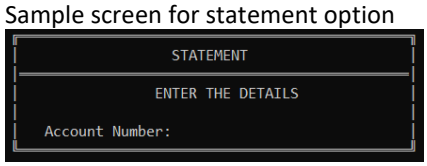
Input field required:
- *Account Number*: integer

Field checks required:
1. *Account number*: Integer, should not more than 10 characters.
   If an invalid account number is provided, appropriate error message should be displayed, with an option to re-enter/check another account.

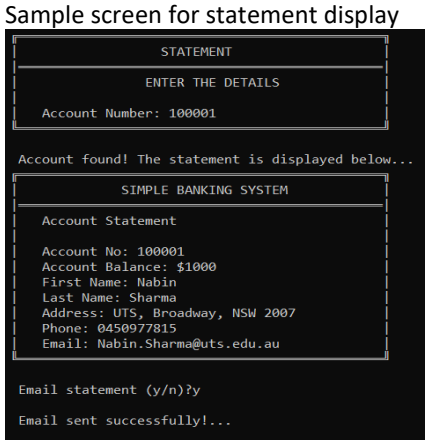
If the account number is valid: display the account statement with last five transactions. *Email the statement to the user based on the preference*.

Once the statement is successfully generated, return to the Main Menu.

Sample screen for statement option



Sample screen for statement display



8. Delete an Account

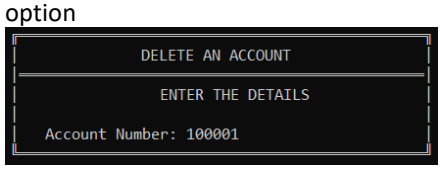
Functionality: Search for a valid account, display the account details, and delete an account.

Input field required:
- *Account Number*: integer

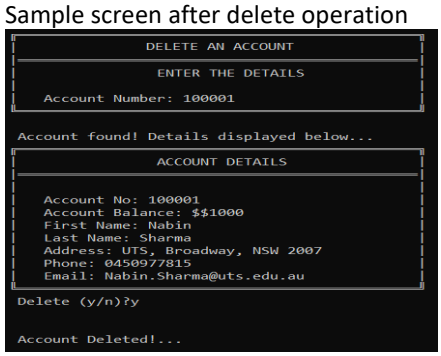
Field checks required:
1. *Account Number*: Integer, should not more than 10 characters.
   If an invalid account number is provided, appropriate error message should be displayed, with an option to re-enter/check another account.

If the account number is valid: display the account details and delete the account based on the user preference. Return to the main menu upon deletion.

Sample screen for delete account option



Sample screen after delete operation



9. Exit in Main Menu:

Functionality: exit from the simple banking system program.

Additional requirements:

1. All login related data to be stored in the **login.txt**
2. All user account data to be stored in the **<account_number>.txt** file. There should be one file per account in the system. E.g: 100001.txt
3. The console should be interactive and easy to use without any errors.

Note: The sample console screens provided are just for reference only.

Additional Information:

Assessment Submission

You must upload a zip file of the C# project folder, data files and the solution file to UTS Online. **This must be done by the Due Date**. You may submit as many times as you like until the due date. The final submission you make is the one that will be marked. If you have not uploaded your zip file within 5 days of the Due Date, or it cannot be run in the lab, then your assignment will receive a zero mark.

PLEASE NOTE 1: It is your responsibility to make sure you have thoroughly tested your program to make sure it is working correctly.

PLEASE NOTE 2: Your final submission to UTS Online is the one that is marked. It does not matter if earlier submissions were working; they will be ignored. Download your submission from UTS Online and test it thoroughly in your assigned laboratory.

Return of Assessed Assignment

It is expected that marks will be made available 2 weeks after the submission via UTS Online. You will be given a copy of the marking sheet showing a breakdown of the marks if needed/requested.

Queries

If you have a problem such as illness which will affect your assignment submission contact the subject coordinator as soon as possible.

Dr. Nabin Sharma
Room: CB11.07.124
Phone: 9514 1835
Email: Nabin.Sharma@uts.edu.au

If you have a question about the assignment, please post it to the UTS Online forum for this subject so that everyone can see the response.

If serious problems are discovered in assignment specification the class will be informed via an announcement on UTS Online. It is your responsibility to make sure you frequently check UTS Online.

PLEASE NOTE : If the answer to your questions can be found directly in any of the following

- ❑ subject outline
- ❑ assignment specification
- ❑ UTS Online FAQ
- ❑ UTS Online discussion board

You will be directed to these locations rather than given a direct answer.

Extensions and Special Consideration

In alignment with Faculty policies, assignments that are submitted **after the Due Date will lose 10% of the received grade for each day**, or part thereof, that the assignment is late. Assignments will not be accepted after 5 days after the Due Date.

When, due to extenuating circumstances, you are unable to submit or present an assessment task on time, please contact your subject coordinator before the assessment task is due to discuss an extension. Extensions may be granted up to a maximum of 5 days (120 hours). In all cases you should have extensions confirmed in writing.

If you believe your performance in an assessment item or exam has been adversely affected by circumstances beyond your control, such as a serious illness, loss or bereavement, hardship, trauma, or exceptional employment demands, you may be eligible to apply for Special Consideration (https://www.uts.edu.au/current-students/managing-your-course/classes-and-assessment/special-circumstances/special) .

Academic Standards and Late Penalties

Please refer to subject outline.