



University of Vavuniya

First Examination in Information and Communication

Technology Honours - 2020

First Semester - May/June 2022 (Held in August 2022)

TICT1134 - Fundamentals of Computer Programming (Practical)

Answer All Questions

Time Allowed: Three hours

Instructions:

You are requested to create a folder on desktop with your index number (e.g.: TSXXXX) and save all your files into that folder.

1. In Sri Lanka, Amana Bank is a brand-new, upcoming bank. They intended to develop a mobile application for the convenience of the consumer. Therefore, you are requested to use the C++ programming language to develop each of the online operations listed below such that the program should have the following facilities.

- (a) Create Account (): Account number, Customer name, Account type (saving, current, fixed), and opening balance will be taken as input.
- (b) Display Account (): Bank account details, including Account number, Customer Name, Account Type, and Balance, will be printed.
- (c) Deposit (): The user will be able to enter the amount to be deposited and added to the available balance. Available balance will be printed.

[This question is continued on the next page]

- (d) Withdrawal (): It will request the amount from the user to be withdrawn from the available balance. If the balance is available to withdraw, it will deduct the amount from the available balance. If not, print the error message.
- (e) Interest (): It will calculate the interest for a year and display it to the consumer based on the account type and interest rates as shown in Table 1.

Table 1:

Account type	Interest rate
Savings account	10%
Current account	8%
Fixed deposit	13%

- (f) Exit (): Exit the program.

The program should provide a menu to select one from the above-mentioned operations. The user should enter the correct integer number to execute the corresponding operation. If the given number is other than 1,2,3,4,5 and 6, then an error message should be prompted.

Sample input and output:

```
--Welcome to Amana Bank--
 1 - Create an account
 2 - Display your account
 3 - Deposit
 4 - Withdrawal
 5 - check your Interest
 6 - Exit the program
Select a number to operate
1
Account number:
0402001100
Customer name:
Neg4Eshwar
Select Account type: saving current fixed
saving
Balance:
24000
```

Figure 1:

[Hint: Interest = ((Balance * Interest rate) / 100)]

[45%]

2. You are requested to perform the following tasks to write a C++ program using Array in order to find a smallest and a largest element of a given matrix:

- (a) Declare a two-dimensional array.
- (b) Store the array values in a matrix and print it.
- (c) Finally, print the smallest and largest elements.

Sample input and output:

Enter no. of rows: 2

Enter no. of columns: 2

Enter the elements to matrix below:

Enter a [0][0] element: 1

Enter a [0][1] element: 2

Enter a [1][0] element: 3

Enter a [1][1] element: 4

The given matrix is:

1 2

3 4

Smallest element: 1

Largest element: 4

[35%]

3. Write a C++ program to count the number of odd and even elements in an array shown in Figure 2.

7	2	8	5	10	1	4	9	3	17
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Figure 2:

Sample output:

Number of odd elements: 6

Number of even elements: 4

[20%]