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| American University of SharjahSchool of Engineering Department of Computer Engineering  P. O. Box 26666  Sharjah, UAE  **Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**  **ID : \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_** |  | **Instructor:** Omar Arif **Office**: ESB-2178  **Phone**: 971-6-515 4821  **e-mail**: oarif@aus.edu  **Semester**: |

COE312 –

Time: 30 minutes

Total Points: 10

**The quiz open book and notes and you can use the Internet. You are not allowed to consult other individuals or your classmates.**

PLEASE UPLOAD YOUR ANSWER USING THIS **WORD** FILE. DO NOT UPLOAD ANY ZIPPED OR PDF FILE. ONE WORD FILE ONLY.

The question(s) have been written in a manner such that it is not possible for two students to have the same solution. Therefore, please refrain from the temptation of copying code and changing order of and names of variables, etc. AUS code of conduct will be strictly enforced, and no violation will be tolerated as per AUS policy. Please note that the AUS code does not discriminate between who copied from whom so it is not advisable to share your solution.

**Q1.** (10 points) You work at a bank, and your manager has asked you to create a program that reads in a list of customer transactions from a file and performs some calculations and displays the result on the output console.

There are two types of transactions, Deposit and Withdrawal. Deposit transactions were written to the file using the following code (dout is a DataOutputStream object),

dout.writeChar('D');

dout.writeUTF(customerName);

dout.writeFloat(depositAmount);

while the withdrawal transactions were written using the following code:

dout.writeChar('W');

dout.writeUTF(customerName);

dout.writeFloat(withdrawalAmount);

Read in all the transactions from the input file (transactions.txt). Calculate the total deposits and total withdrawals. Also find the customer with the max deposit and max withdrawal. The expected output of your program is as follows (The exact values of customer names and amount may be different in your case):

**Expected Output:**

[Deposit -> Name: Sara, Amount: 300.5

[Deposit -> Name: Ali, Amount: 100.1

[Deposit -> Name: John, Amount: 500.2

[Withdrawal -> Name: Sara, Amount: 200.5

[Deposit -> Name: Omar, Amount: 200.0

[Withdrawal -> Name: Omar, Amount: 100.0

[Withdrawal -> Name: Ali, Amount: 50.1

[Withdrawal -> Name: John, Amount: 100.2

Total Deposits: 1100.8

Total Withdrawals: 450.8

Max Deposit: John, Amount: 500.20

Max Withdrawals: Sara, Amount: 200.50

**Your program should also use BufferedInputStream**.

You must run and provide output on the following program (without any changes to the program). You are not allowed to make any changes to this program.

import java.io.IOException;

import java.io.FileInputStream;

public class Main {

public static void main(String[] args) {

// **TODO** Auto-generated method stub

try {

FileInputStream fin = new FileInputStream("Transactions.txt");

TransactionsRead tread = new TransactionsRead(fin);

tread.doRead();

}catch(IOException e) {

}

}

}

Please provide 1) formatted code, and 2) screenshots of your running program. Not providing a screenshot (with or without errors) will limit your score to below 3/10.

**Grading Rubric (out of 10 points)**

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| **0-3** | **4-6** | **7-8** | **9-10** |
| Program does not compile or run. OR  Program is not related to the problem at hand. OR  No screenshot is provided. | * Class hierarchy is correct. AND * Most functions and interfaces are implemented somewhat correctly. AND * Some obvious attributes are missing. | * Class hierarchy is correct. AND * Most functions and interfaces are implemented correctly. AND * Some obvious attributes are missing. | * Class hierarchy is correct. AND * All the functions and interfaces are implemented correctly. AND * All the attributes are mentioned. |

**Solution: (Paste formatted code here).**

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**Solution: (Paste the screenshots here).**

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