

Name (Arabic): _____

Class: _____

Ain Shams University
 Faculty of Computer and Information Sciences
 First Year – Sections 12:16 – Midterm Exam
 Prof. Zaki Taha
 Dr. Sally Saad

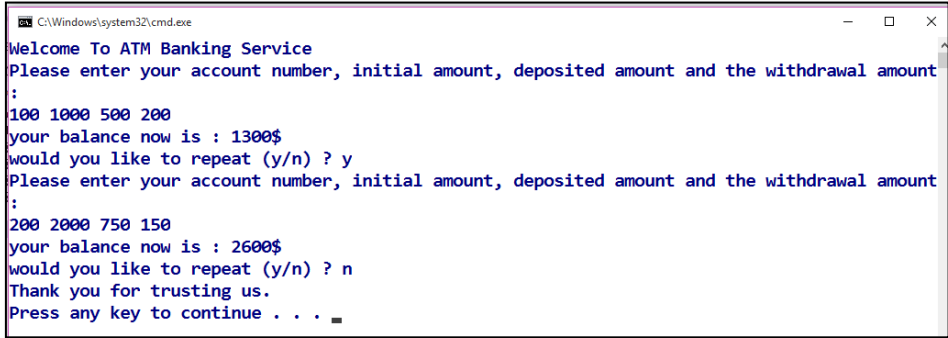


Version 1 (9 am-9:45am)
 Date: March 21st, 2018
 Time: 45 minutes
 Course: CSW150

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Fundamental of Structured Programming Using C++
 Please attempt ALL questions, and **think before you write.**

QUESTION (1) True/False. An <u>explanation</u> is required for false answers.	(3 points)	5-mints	Grade
(a) The statement <pre>struct my_struct { int num1, num2; char signs[3]; double result; };</pre> allocates 20 bytes in memory.			0.5
Answer: Struct definition allocates <u>ZERO bytes</u> in memory			0.5
(b) It is the compiler's task to create the executable file for your program.		(F)	0.5
Answer: → It is the compiler's task to create the <u>object code</u> for your program. or → It is the compiler's task to <u>detect syntax errors</u> for your program.			0.5
(c) The output of the following code scrap is 3. <pre>int my2Darr[][3]= {{1,2,3},{4,5,6}};</pre> <pre>cout<<my2Darr[0][2];</pre>		(T)	1
Answer: NO EXPLANATION IS REQUIRED HERE			
QUESTION (2) Code Design	(2 points)	10-mints	
What is the output from the following Pseudocode fragment?			
<pre> REPEAT (numOfElements - 1) times SET the first unsorted element as the m FOR each of the unsorted elements IF element > currentM THEN set element as new m ENDIF ENDFOR </pre>	Input: 4 2 1 5 7 9 Output: 9 7 5 4 2 1 Partial sorting descendingly → (1) Ascending sorting → (1)		2

QUESTION (3) Code Development	(5 points)	20-mints	
<p>Develop an "Automatic Teller Machine (ATM) Service" program that reads from the user bank account information (account number, initial amount, deposit and withdrawal) and displays the final amount of money in the balance. Your Program should define a struct for the client information and should repeat the process for many clients until the user asks it to quit using sentinel value 'n'.</p>			
<p>Sample Run:</p> 			
<p>Answer:</p> <p>Main source file</p> <pre>#include <iostream> using namespace std; struct ATM { int AccNumber; double Initamount; double withdrawal; double deposit; double amount; }client; void main () { char choice; cout<<"Welcome To ATM Banking Service"<<endl; do { cout<<"Please enter your account number, initial amount, deposited amount and the withdrawal amount:"<<endl; cin>>client.AccNumber>>client.Initamount >>client.deposit>>client.withdrawal; client.amount=client.Initamount+client.deposit- client.withdrawal; cout<<"your balance now is : "<<client.amount<<"\$"<<endl; cout<<"would you like to repeat (y/n) ? "; cin>>choice; }while(choice=='y'); cout<<"Thank you for trusting us."<<endl; }</pre>	<ul style="list-style-type: none"> • Program outline (#,main..etc) →(0.5) • User Friendly output msgs (at least one)→ (0.5) • Struct definition→(1) • Variable declaration + professional names → (0.5) • Sentinel value loop →(1) • Input client info →(0.5) • Balance equation →(0.5) • Output →(0.5) 		5

Best Wishes ☺

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