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Section:01

Assignment:03

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Summary Of Changes:

1: Changes made on basis of feedback mentioned in assignment 01

1.1: We are change the invalid fuction void Transection(double Amount) as you say in Assignment 1 into Function void login(int pin).

Case Study Automated Machine ATM

Introduction:

The Automated machine (ATM) is an automatic banking machine (ABM) that allows the customer to complete basic transactions without any help from bank representatives. The basic one allows the customer to only draw cash and receive a report of the account balance.

Discription:

The software to be designed will control a simulated automated teller machine(ATM) having a magnetic stripe reader for reading an ATM card, a customer An account is accessible through a cash card.console (keyboard and display) for interaction with the customer, a slot for depositing envelopes, a dispenser for cash (in multiples of $20), a printer fo printing customer receipts, and a key-operated switch to allow an operator to start or stop the machine. The ATM will

communicate with the bank's computer over an appropriate communication link. The ATM will service one customer at a time. A customer will be required toinsert an ATM card and enter a personal identification number (PIN) - both ofwhich will be sent to the bank for validation as part of each transaction. Thecustomer will then be able to perform one or more transactions. The card willbe retained in the machine until the customer indicates that he/she desires nofurther transactions, at which point it will be returned.The ATM must be able to provide the following services to the customer: I A customer must be able to make a cash withdrawal from any suitable account linked to the card, in multiples of $20.00. Approval must be obtained from the bank before cash is dispensed.I A customer must be able to make a deposit to any account linked to the card, consisting of cash and/or checks in an envelope. The customer will enter the amount of the deposit into the ATM, subject to manualverification when the envelope is removed from the machine by an operator. Approval must be obtained from the bank before physically

accepting the envelope. I A customer must be able to make a transfer of money between any two accounts linked to the card. I A customer must be able to make a balance inquiry of any account linked to the card.A customer must be able to abort a transaction in progress by pressing the Cancel key instead of responding to a request from the machine. The ATM will communicate each transaction to the bank and obtain verification that it was allowed by the bank. Ordinarily, a transaction will be considered complete by the bank once it has been approved. In the case of a deposit, a second message will be sent to the bank indicating that the customer has deposited the envelope. (If the customer fails to deposit the envelope within the timeout period, or presses cancel instead, no second message will be sent to the bank and the deposit will not be credited to the customer.

Functions:

1.Void deposit(double ammount,int range,int num_deposit);

2.Void login(int pin);

3.Void withdraw(double amount);

Equilence Class patitioning:

Equilence Class partitioning (ECP) is a software testing technique that divides the input data of a software unit into partitions of equivalent data from which test cases can be derived.

Strong robust equivalence class partitioning:

. In which we are testing all combination of inside the boundary as well as outside the boundary of input value.

Test Cases:

1. **Function 1: Void Withdraw (double amount):**

   Input Values=1>=amount<=10

   So the min<0 , min+1=1 , normalValue=5 , max=10 , max>11

TestCase	Amount	Output
1	0	Invalid
2	1	Valid
3	5	Valid
4	9	Valid
5	11	InValid

2. **Function 2: Void login(**int pin**):**

   Input values: 1>=pin<=10

   So the min<0, min+1=2, normal Value=5, max=10, max>11

TestCase	Amount	Outputs
1	0	Invalid
2	1	Valid
3	5	Valid
4	10	Valid
5	11	InValid

3. **Function 3: Void Deposit(**double ammount,int range,int num_deposit**);**

   Input Values=**1>=amount<=30;**

   1>=rang<=30;

   1>=num_deposit<=30;

   Input Values: min<0 , min +1=1 , Normal Value=15, max=30 , max>31

TestCase	amount	rang	Num_deposit	Output
1	0	0	0	invalid
2	0	0	1	invalid
3	0	0	2	invalid
4	0	0	3	invalid
5	0	0	4	invalid
6	0	0	5	invalid
7	0	0	6	invalid
8	0	0	7	invalid
9	0	0	8	invalid
10	0	0	9	invalid
11	0	0	10	invalid
12	0	1	1	valid
13	0	1	2	valid
14	0	1	3	valid
15	0	1	4	valid
16	0	1	5	valid
17	0	1	6	valid
18	0	1	7	valid
19	0	1	8	valid
20	0	1	9	valid
21	1	1	0	valid
22	1	1	1	valid
23	1	2	2	invalid
24	1	3	3	valid
25	1	4	4	invalid
26	1	5	5	valid
27	1	6	6	valid
28	1	7	7	valid
29	1	8	8	valid
30	1	9	9	valid
31	1	10	10	valid
32	1	11	11	valid
33	1	12	12	valid
34	1	13	13	valid
35	1	14	14	valid
36	1	15	15	valid
37	1	16	16	valid
38	1	17	17	valid
39	1	18	18	invalid
40	15	0	0	valid
41	15	1	0	valid
42	15	2	2	invalid

43	15	3	2	valid
44		4	3	valid
45	15	5	4	valid
46	15	6	5	valid
47	15	7	6	valid
48	15	8	7	valid
49	15	9	8	valid
50	15	10	9	invalid
51	15	11	10	invalid
52	15	12	12	valid
53	15	13	12	invalid
54	15	13	13	valid
55	15	14	14	valid
56	15	15	15	valid
57	15	16	16	valid
58	15	17	17	valid
59	15	18	18	valid
60	15	19	19	valid
61	15	20	20	valid
62	15	21	21	valid
63	15	22	22	valid
64	15	23	23	valid
65	31	0	0	valid
66	31	31	36	valid
67	31	30	31	valid
68	31	0	0	invalid

69	31	1	1	invalid
67	31	2	2	invalid
68	31	3	3	valid
69	31	4	4	valid
70	31	6	6	valid
71	31	7	7	valid
72	31	8	8	valid
73	31	9	9	valid
74	31	10	10	valid
75	31	11	11	valid
76	31	12	12	invalid
77	31	13	13	invalid
78	31	14	14	invalid
79	31	31	31	valid
80	31	30	35	valid
81	31	20	20	valid
82	31	19	19	valid
83	31	25	35	valid
84	31	26	26	valid
85	31	27	27	valid
86	31	28	28	valid
87	31	29	29	valid

Cause Effect Graph:

Causes:

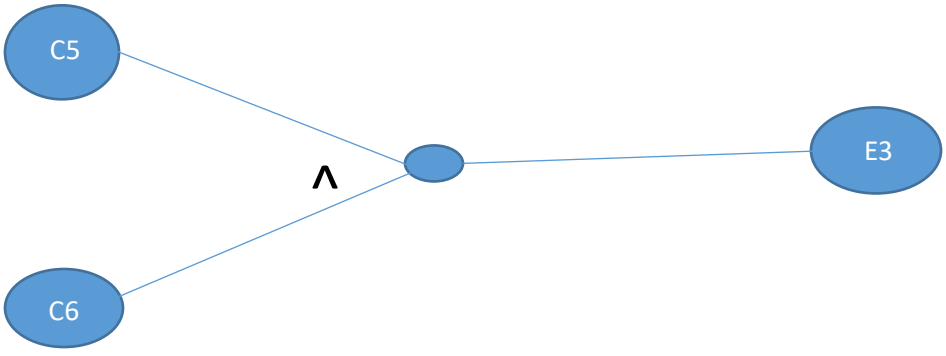
C1: Amount=>500
C2: Multiple of 500
C3:Amount <50000
C4: Amount < user Account Balance
C5:valid card
C6:valid pin

Effects:

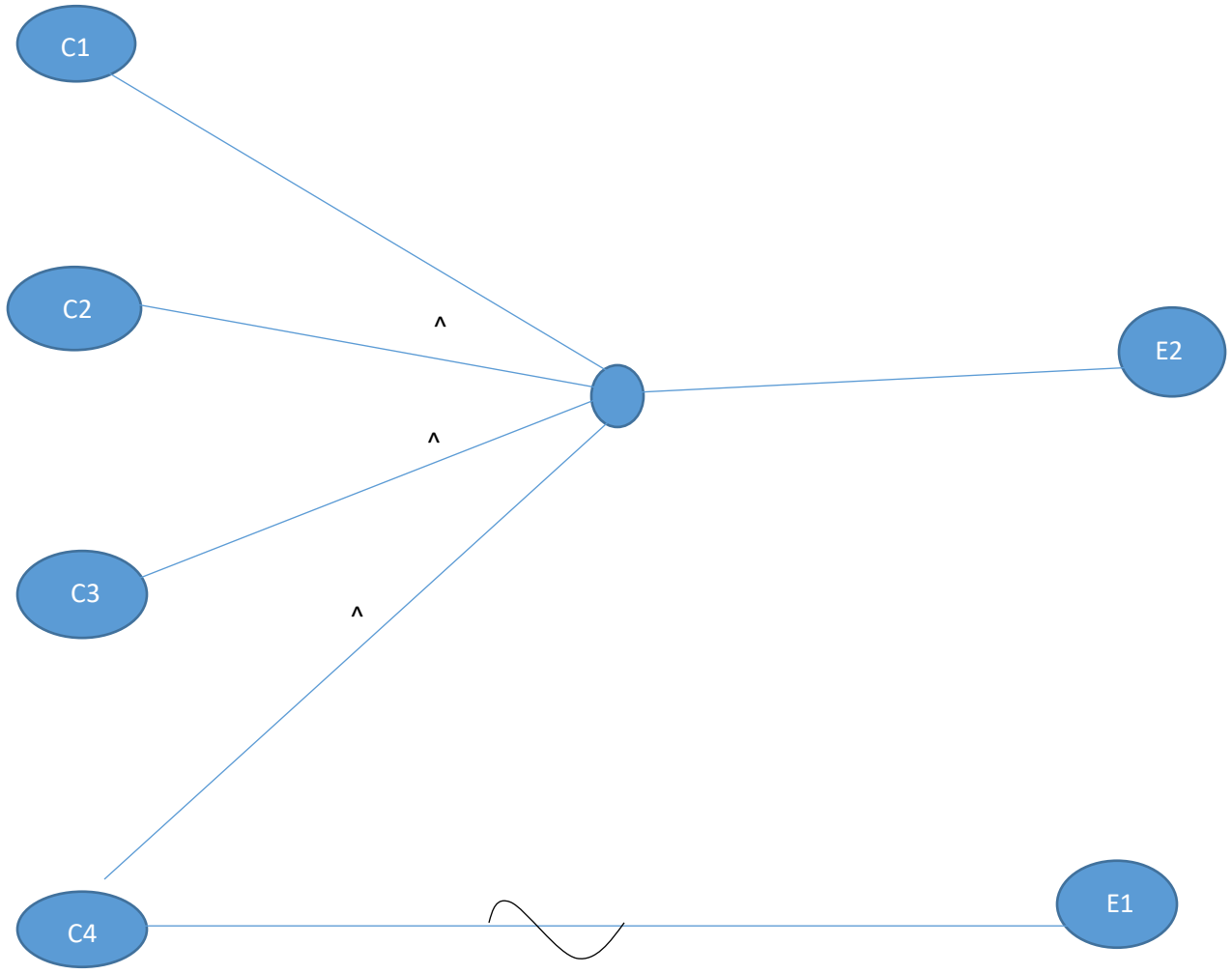
E1: invalid amount entered
E2: Successful transection
E3:Successful login

Graphs:

Graph 1:



Graph 2:



Decision Table:

Causes	1	2
C1	0	1
C2	0	1
C3	0	1
C4	0	1
C5	1	0
C6	1	0
Effects		
E1	0	1
E2	0	1
E3	1	0

Test Cases:

We are choosing BVA:

Identifying Test Cases:

1.Void deposit(int amount)

Min= 500

Min+1= 1000

Normal= 25,000

Max= 50,000

Max-1= 49,000

Test Cases Table

Test Cases	Test data	Expected Outputs
1	5000	valid
2	1000	valid
3	25000	valid
4	50000	valid
5	49000	valid

2.Void login(int pin)

Min= 1

Min+1= 2

Normal= 5

Max= 10

Max-1= 9

Test Cases Table

Test Cases	Test data	Expected Outputs
1	1	valid
2	11	valid
3	45615	valid
4	1236789322	valid
5	21389321	valid