Capital University of Science and Technology

Department of Software Engineering

Name:Hafiz Naqash,Mohammad Khayyam

Reg-Num:Bse181057,Bse181055

Section:01

Submitted-To:Sir.Sameer Obaid

1. **Choose any problem statement of your choice and do following.**

PART A:

a. Explain the case study of the problem (minimum 400 words)

Case Study Automated Machine ATM

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.

PART B:

b. Identify the functions (at least 3) from the case study and there must me at least one function that takes 3 parameters

Three function:

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

Void transection(double amount);

Void withdraw(double amount);

PART C:

. Using worst case BVA, identify test cases of each function and list down all test cases.

Worst Case BVA testing:
In this we Test All combination of input Value.

Formula for test cases=5^.

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

   Formula in Worst Case=5^n=5^1 = 5 Test Cases

   Input Values=1>=a<=10

   So the min=0 , min+1=1 , normalValue=5 , max=10 , max-1=9

TestCase	a	Output
1	0	Invalid
2	1	Valid
3	5	Valid
4	9	Valid
5	10	Valid

2. **Function 2: Void Transection (**double amount**):**

Formula in Worst Case=5^n=5^1 = 5 Test Cases

Input values: 40>=a<=80

So the min=39, min+1=40, normal Value=60, max=80, max-1=79

TestCase	a	Outputs
1	39	Invalid
2	40	Valid
3	60	Valid
4	79	Valid
5	80	Valid

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

Formula in Worst Case=5^n=5^3 = 125 Test Cases

Input Values=**1>=a<=100;**

1>=r<=100;

1>=d<=100;

Input Values: min=0 , min +1=1 , Normal Value=50, max=100 , max-1=99

TestCase	a	r	d	Output
1	0	0	0	Equalent
2	0	0	1	Not a triangle
3	0	0	2	Not a triangle
4	0	0	3	Not a triangle
5	0	0	4	Not a triangle
6	0	0	5	Not a triangle
7	0	0	6	Not a triangle
8	0	0	7	Not a triangle
9	0	0	8	Not a triangle
10	0	0	9	Not a triangle
11	0	0	10	Not a triangle

12	0	1	1	isoscles
13	0	1	2	Scaline
14	0	1	3	Scaline
15	0	1	4	Scaline
16	0	1	5	Scaline
17	0	1	6	Scalinr
18	0	1	7	Scaline
19	0	1	8	IScaline
20	0	1	9	Scaline
21	1	0	0	Isoscles
22	1	1	1	Eqvalent
23	1	2	50	Scaline
24	1	50	50	Isoscles
25	1	50	55	scaline
26	1	40	40	isoscles
27	1	20	20	isosceles
28	1	30	50	scaline
29	1	30	30	isoscles
30	1	40	98	scaline
31	1	40	12	scaline
32	1	50	50	isosles
33	1	50	50	isoscles
34	1	50	78	scaline
35	1	50	98	scaline
36	1	50	12	scaline
37	1	70	30	scaline
38	1	70	70	isoscles
39	1	70	78	scaline
40	2	0	0	isoscles
41	2	1	0	scaline
42	2	2	2	eqvalent
43	2	3	2	isoscles
44	2	4	3	isoscles
45	2	5	4	saline
46	2	6	5	scaline
47	2	7	6	scaline
48	2	8	7	isosles
49	2	9	8	ioscles
50	2	10	9	scaline
51	2	11	10	scaline
52	2	12	12	isoscles

53	2	13	12	scaline
54	3	0	0	isoscles
55	3	1	1	isoscles
56	3	2	3	scaline
57	3	3	3	eqvalent
58	3	3	5	isoscles
59	3	5	6	scaline
60	3	6	7	scaline
61	3	7	7	isoscles
62	3	8	8	isoscles
63	3	9	10	scaline
64	3	10	10	isoscles