

# **ATM Based bank system**

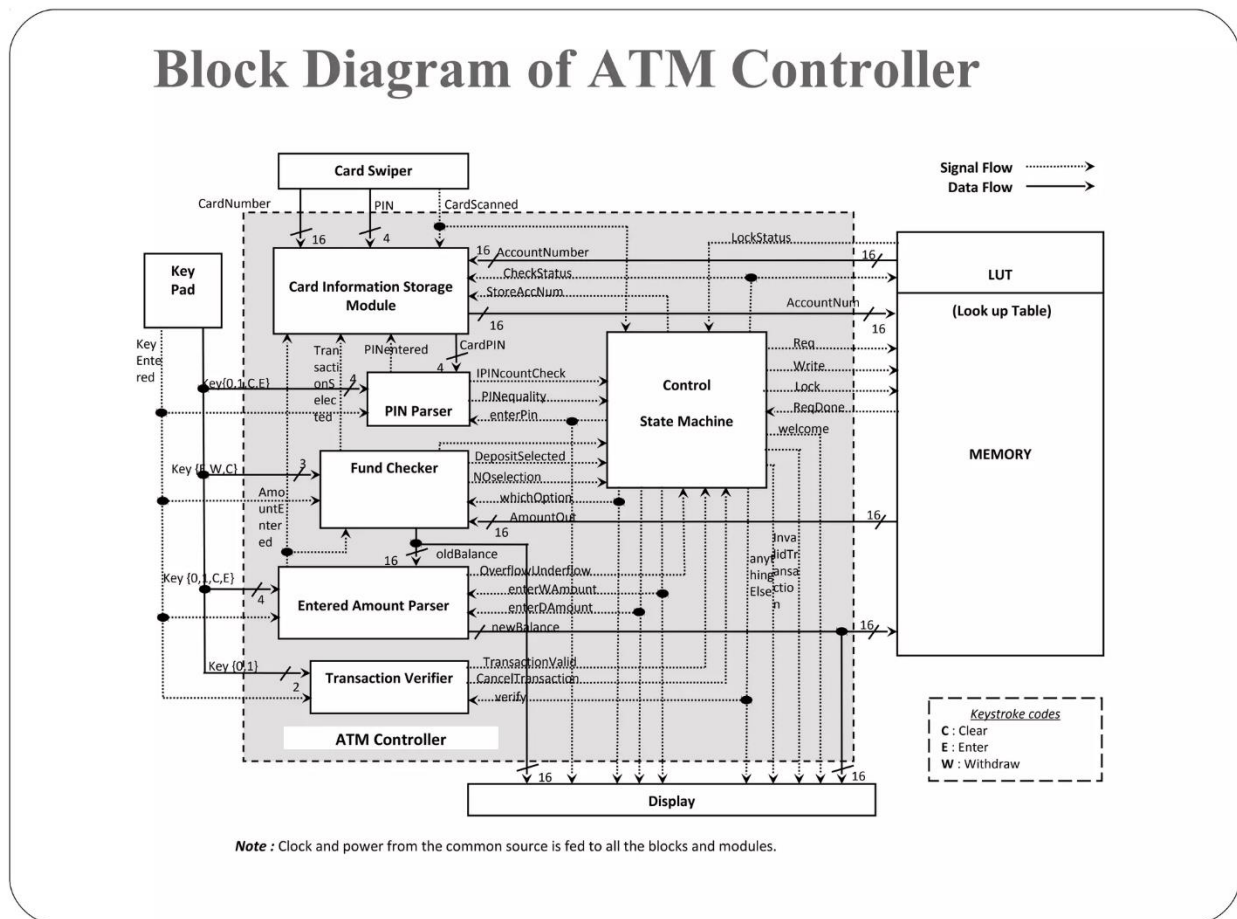
## **1. Introduction :**

- a. In our current age, there are a lot of ATM machines everywhere you go you can see at least one ATM, so they becomes widely used as it make any process related to payments more easier .**
- b. ATMs machines support deposits, withdrawals and transfer money to others in addition to you can deal with different Banks as each bank has its own ATM but there is a feature implemented in it so as user you can deal with any ATM it's not related to which bank.**

## **2. Description:**

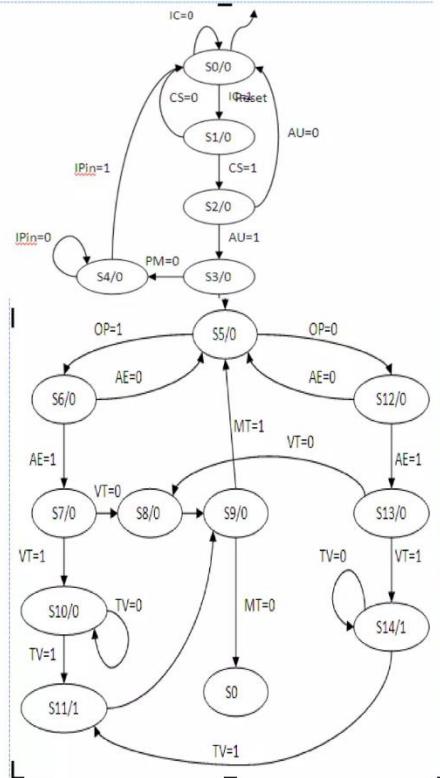
- a. Our main target here to complete ASIC flow by implementing the core of the bank ATM design .**
- b. I assume all auxiliary devices like card swiper , amount parser , PIN parser , bank server as memory based system , control unit ,...etc.**

### 3. Block diagram of ATM controller :



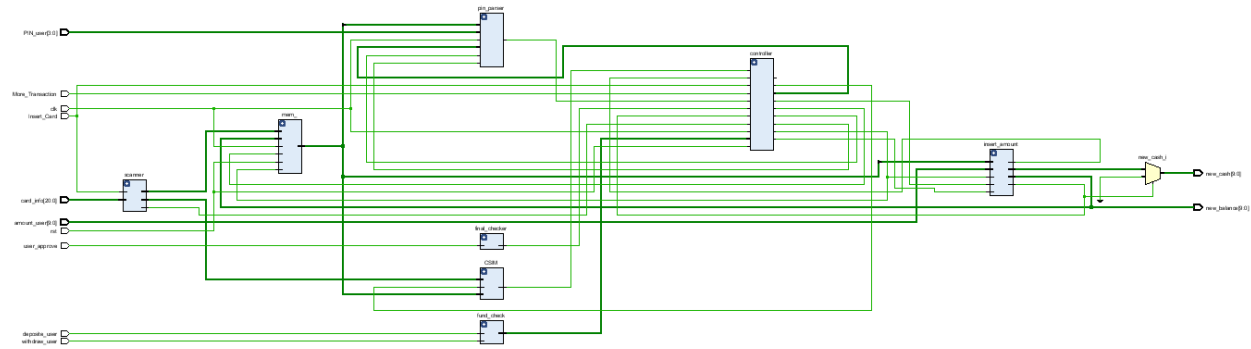
#### 4. Finite State Machine (FSM) :

### STATE DIAGRAM

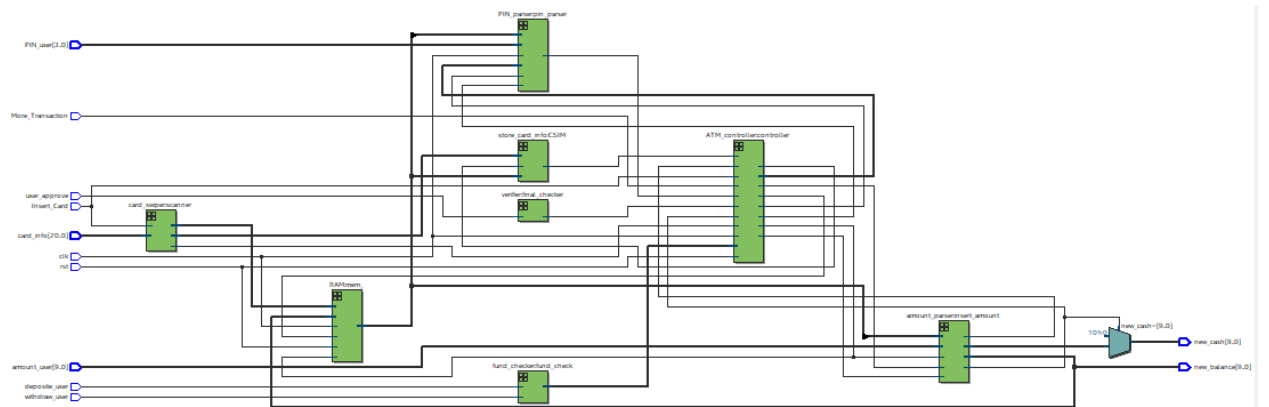


#### 5. RTL netlist :

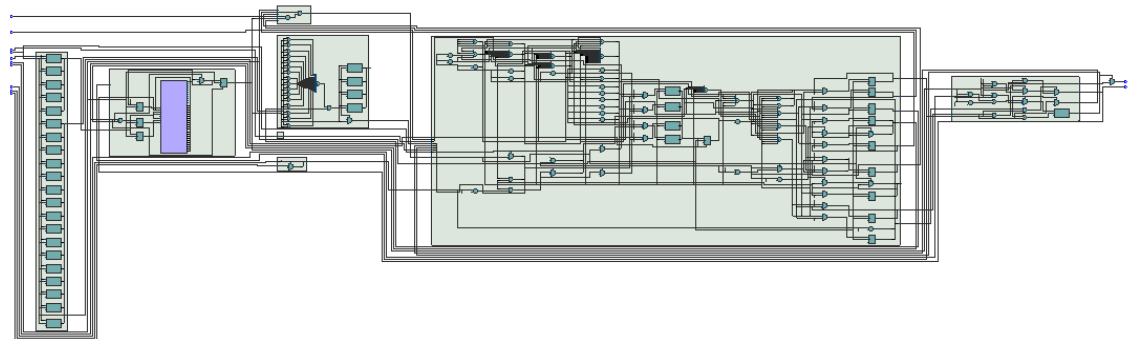
**a.**



**b.**



**c.**



## 6. Stimulation Snippets :

**a. Initially I don't insert any card so all are in default mode , on the other side I have to different accounts in my bank one with 10\$ balance and another with zero balance as shown in the following figure**

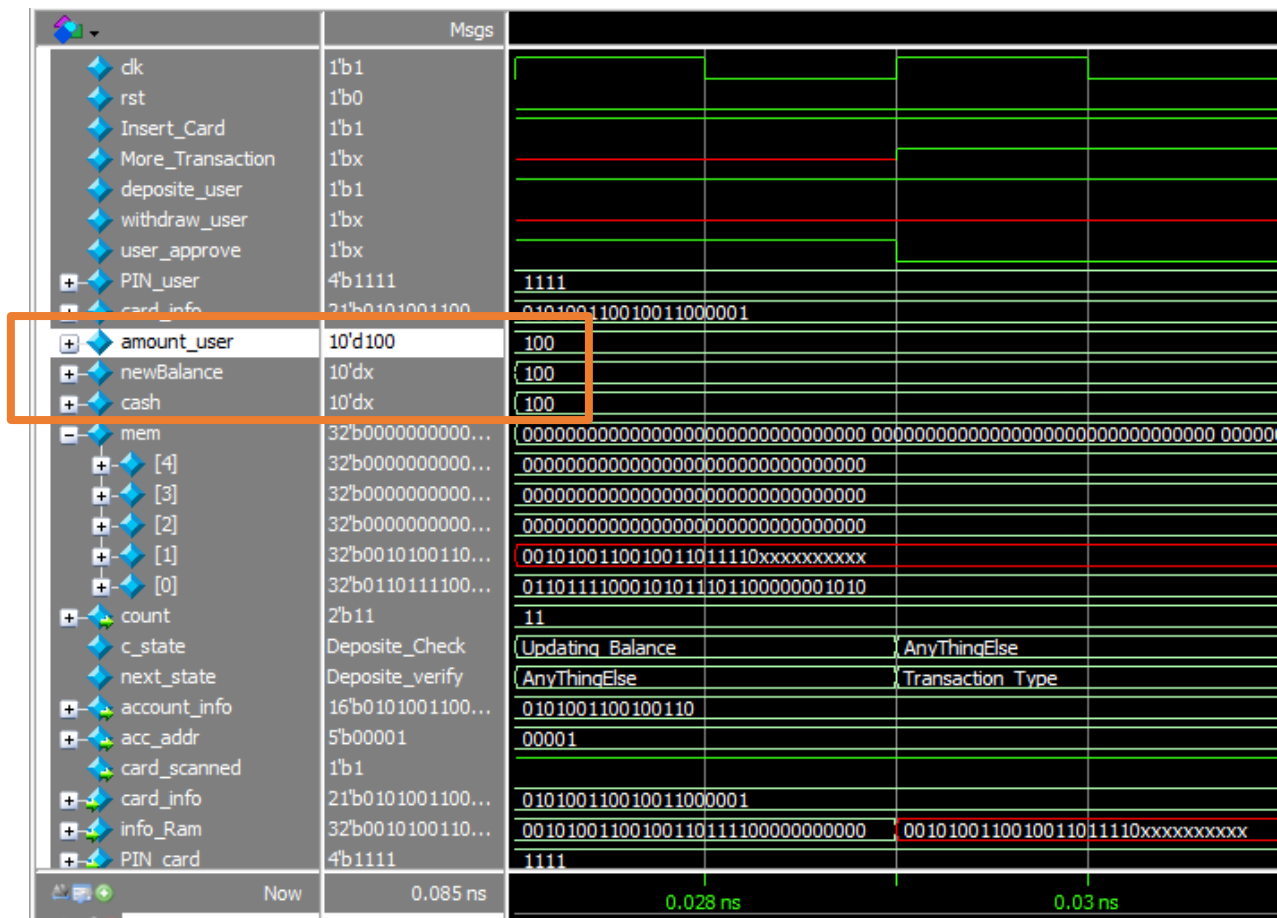
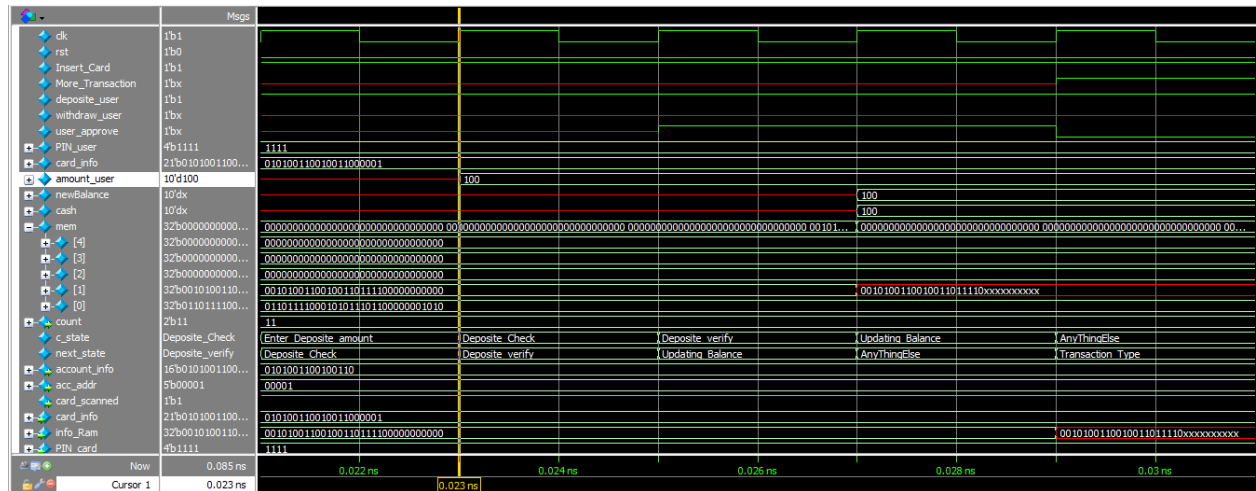
Variable	Value	Hex	Dec	Bin
newbalance	10'bxxxxxxxxxxxx			
cash	10'b0000000000			
mem	32'b000000000000...	00000000000000000000000000000000	00000000000000000000000000000000	
[4]	32'b000000000000...	00000000000000000000000000000000	00000000000000000000000000000000	
[3]	32'b000000000000...	00000000000000000000000000000000	00000000000000000000000000000000	
[2]	32'b000000000000...	00000000000000000000000000000000	00000000000000000000000000000000	
[1]	32'b00101001100...	00101001100100110111100000000000	1111000000000000	
[0]	32'b0110111100...	01101111000101011101100000001010		
count	2bxx			
c_state	Scan_Card	Scan Card		
next_state	Scan_Line	Scan Card		
account_info	16'b0101001100...			





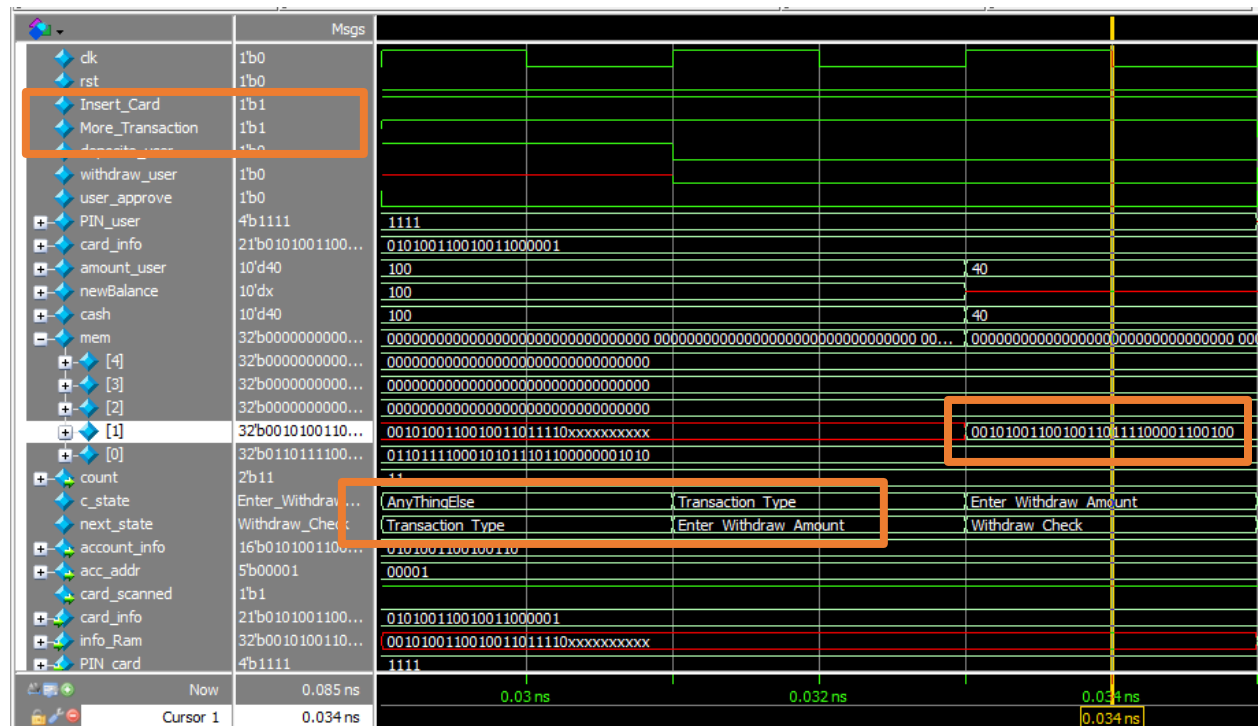




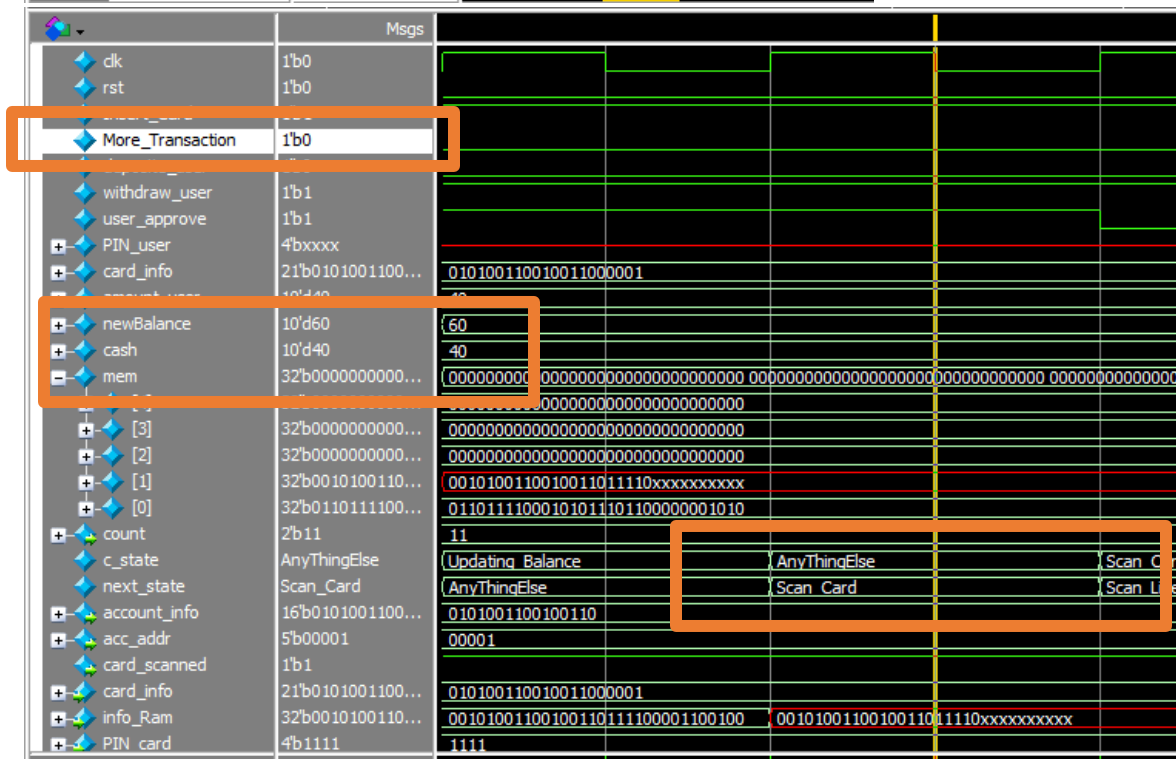
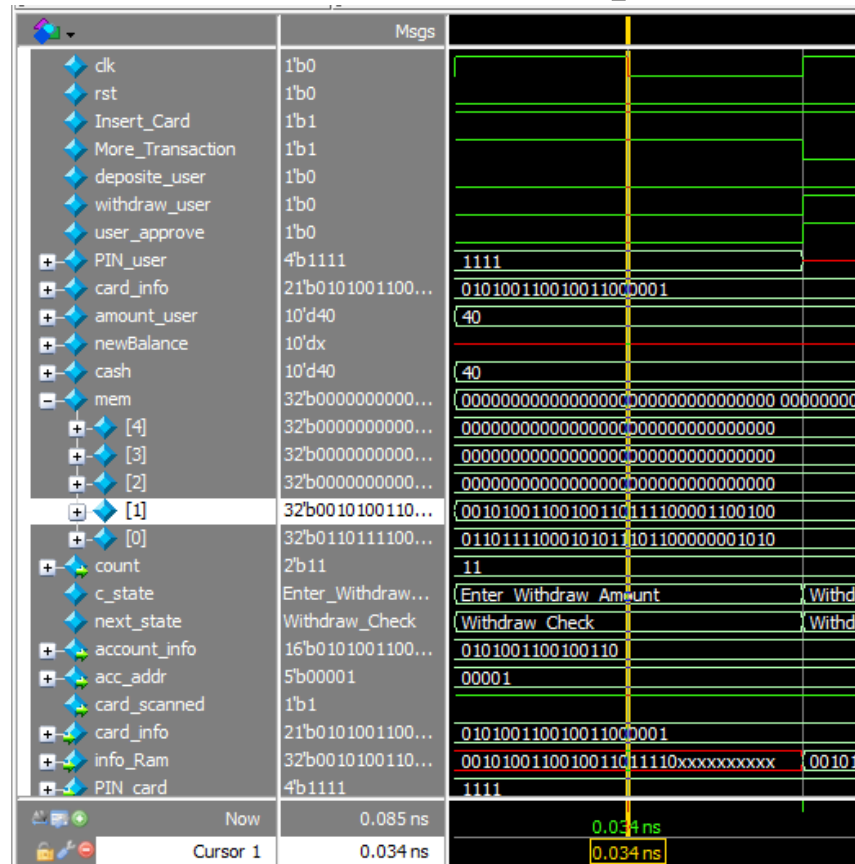


e. Now our bank will be notified by the latest update then update the amount but as user I choose to do more transaction so I'm in transaction selection state

i.



## ii. Now let's check withdraw process



i.

[illegible][illegible]

**g. Let's get the card out and insert another one to check if there is no enough balance to withdrawal so the cash to user is equal to zero and go to invalid state**

[illegible]

# Thanks