GLOBAL ATM RECONCILIATION ERROR CODES MAPPING FOR ALL OEM MANUFACTURERS WITH COMMON CODES FOR RECTIFICATION AND RECONCILIATION

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ABSTRACT

The Automated Teller Machine has transformed into an imperative bit of our general public. Utilizing the ATM anyway can frequently be a baffling encounter because of inclined glitches that happens in the machine. ATM makers have exhibited a few diverse mistake codes which starting at yet have not increased standard acknowledgment. This paper examines the different error codes thrown by various ATM machines produced by different manufacturers can be given a common code for very similar malfunctions made by the machine. Thereby to justify these common codes could gain world wide acceptance with the usage of the machines.

Keywords: ATM, OEM, Automated Teller Machine

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1. INTRODUCTION

ATM speaks to; Automated Teller Machine. It is furthermore implied as a coins device, a cash allocator and 'the outlet inside the divider' amongst diverse names. The ATM is an digital automatic media interchanges contraption that grants coins associated foundations (as an example bank or constructing society) customers to honestly use a secured gadget for correspondence to get to their budgetary adjusts. The ATM is a self-organisation banking terminal that recognizes stores and allots cash. Most ATM's moreover allowed customers to complete other budgetary trades (for example check balance). ATM's are incited by means of embeddings a financial institution card (cash or MasterCard) into the cardboard in line with purchaser establishing. The card will include the consumer's report quantity and PIN (Personal Identification Number) at the playing cards attractive stripe. Right whilst a customer is endeavouring to drag lower back coins for example, the ATM calls up the banks PCs to check the equality, allots the cash and after that transmits a completed exchange examine.

2. EXISTING SYSTEM

2.1. ATM Reconciliation

ATM Reconciliation is the way toward distinguishing, exploring, and settling contrasts between ATM Journals, ATM Switch exchanges; Physical money balance in the ATM, these information's gets populated from interior frameworks and outer frameworks or sources. Controls include consistency checks or variety checks either inside a framework or between frameworks. Compromise and Controls consistently lead to an examination procedure, investigation of recognized contrasts, remedial activities and issue acceleration and together comprise center parts of every single budgetary activity.

2.2. Need for Reconciliation

Each time two frameworks (inner or outer) record the equivalent money related exchange in an alternate manner, a compromise procedure must be executed as a last check to guarantee worldwide consistency.

Compromise in this way shapes a key segment of an organization's inner control framework.

For a Bank/MSP/CRA compromise can be a perplexing, repetitive and incredibly tedious procedures as it includes numerous instruments over various business applications. Furthermore, the various information sources and information positions utilized both remotely and inside, are not generally standardized, bringing about the reception of a few compromise apparatuses.

Compromise strategy, by its very nature, prompts an absence of solidified perspectives and thusly a higher introduction to hazard. This makes a requirement for a forward-looking venture wide compromise framework that lessens operational hazard and encourages money liquidity the board.

The requirement for a proficient and compelling ATM compromise procedure to adapt to the developing interest for ATM systems and self-overhauled exchanges is a key to a hazard controlled activity.

Just undertaking wide compromise arrangements can cover the full extent of compromise at every ATM Level and over the different frameworks of the association.

2.3. Performance Requirements

Error message have to be shown in any occasion 6 seconds.

- If there may be no reaction from the Treasury PC following a solicitation inside mins, the card must dismiss with a mistake message.
- The ATM allots cash if and simply if the withdrawal from the file is looked after.
- Each Treasury need to system exchanges from some ATMs simultaneously.
- Cash collection time from the distributor need to be modified according with 30 seconds.
- The ATM device will complete the purchaser sign-on approach in below five seconds.
- The ATM gadget will understand the development kind preference in under 2 seconds.
- The ATM machine will apprehend the record decision in underneath 2 seconds

2.4. Functional Requirements

- The ATM framework should give get admission to to an authorized purchaser.
- The ATM framework need to well known consumer asks for and supply complaint.
- The ATM framework have to determine ATM reactions to inputs were given.
- The ATM framework ought to talk with the Treasury PC.
- The ATM framework have to have a Language dedication alternative.
- The framework ought to request account type.
- The framework need to check for printing receipt.
- The framework need to request upload up to be pulled lower back at the off chance that it's far withdrawal.
- Dispense money and fee the sum if there may be sufficient report stability.
- If there is not enough parity blunder message should be shown.
- If it's miles stability enquiry, a printed receipt have to take delivery of.
- If it's miles small scale clarification call for, a printed receipt need to accept.
- If ATM is out of request or inadequate cash in the tapes a blunder message need to take delivery of.
- The ATM shape will offer functions to re-supply and backing.

2.5. Reconciliation Overall Process

Figure 1 Single Ticket Generation

Figure 2 Bulk Ticket Generation – Process Flow

Figure 3 Process Flow

Figure 4 Base 24 - Payment Switch

An ATM switch is like a network switch which associates gadgets and procedures and passes data back and forth from the associated gadgets. ATMs were initially independent devices since information on monetary adjusts themselves were circled across over branches. Later when all record information got united records could be revived steady. In the mid-90s some open part banks got the splendid idea that they could share their framework. This necessary a central change to pass information between frameworks. In coming about quite a while there was a couple of such shut frameworks. Around 2004, the RBI's assistant IDRBT made a National Finance Switch to relate all ATMs. The action of the switch was passed on

the National Payments Corporation of India in 2007. The NPCI found that the NFS could be used for progressing resource move additionally and the IMPS were made riding on the NFS. The NPCI's latest movement the Unified Payments Network which licenses portions from any versatile financial application to some other application rides on the IMPS.

2.6. Benefits

- Experts in the business and offers their involvement in the representative
- Well known bank 374 branch workplaces.
- More than 2,800 ATM machines
- Correspondent budgetary relationship with 700 remote banks all through the world.
- Strong execution where it was recorded second greatest in Malaysia Stock Exchange and Bursa Malaysia

3. IMPLEMENTATION AND SECURITY ANALYSIS

3.1. Tranax Error Codes Diebold or Triton

ERROR CODE	ERROR DESCRIPTION	SOLUTION
0	Normal Status	Normal Status
400	Dim light sensor test error(CS11A, CS11B, CS4) during instating.	1. Check if every sensor is mounted. 2. In the event that blunder happens while checking CS11A link activity, supplant a sensor. 3. On the off chance that mistake happens while checking CS11B link activity, supplant a sensor. 4. In the event that blunder happens while checking CS4 link activity, supplant a sensor.
4000	Blunder of being evacuated second tape before independent dismissal	
4004	Mistake of being evacuated second tape before independent dismissal	1. Set tape #2 accurately 2. Check the catcher inside tape #2 control
5300	No Savings Account	
10301	DEV_PIN	
20001	Incapable to stack a tape.	Expelled and supplant tape Check the miniaturized scale switch situated within left mass of the gadget.
20002	Low cash.	Renew the money if utilizing under 75 bills, debilitate the ÒLow Cash Warningó in the Transaction Setup Menu.
20003	Reject Bin full.	Void the Reject Bin-If the container is unfilled, do a Day Total and afterward a Cassette Total-If than doesn't help, check AP, BIOS and CDU ROM adaptations.

3.2. Attacks in Automated Teller Machine

ATM dangers can be segmented into three sorts of ambushes: card and money misrepresentation, insightful assaults and physical assaults

Card and Cash Fraud

Card and money extortion includes both direct assaults to take money from the ATM and aberrant assaults to take a purchaser's character (as shopper card information and PIN burglary). The plan of roundabout assaults is to falsely utilize the buyer information to make fake cards and get cash from the shopper's record through fake reclamation.

Skimming Attack

Card and money extortion includes both direct assaults to take money from the ATM and roundabout assaults to take a customer's personality (as purchaser card information and PIN burglary). The purpose of circuitous assaults is to deceitfully utilize the buyer information to make fake cards and acquire cash from the shopper's record through fake reclamation.

Card Trapping and Fishing

Card getting is driven by setting a device over or inside the card per client opening to get the customer's card. These can be devices, for instance, plates over the card per client, pitiful metallic strips covered in a plastic clear film, wires, tests and catches. These gadgets are proposed to shield the card from being returned to the buyer toward the piece of the plan

Card and currency Logical/data Attacks

It remembers assault for ATM's product, working framework and correspondence system and frameworks. Principle target is to acquaint infections proposed with abuse an ATM's working framework for the most part employment of programmers who introduce malware to damage the secrecy, honesty or legitimacy of exchange related information.

Physical Attacks

It consolidates getting cash by physically hurting the ATM. It incorporates any section or part of the ATM.

3.3. OUTCOMES

Claim Type *	Sub Claim Type *	ATM ID *	Bank Code *	MSP Code *	Location *
Customer Claim	Customer Claim	3034	JB	DEBOLD	SARACAR
Branch *	Transaction Date *	Transaction Time *	Transaction No *	Card No *	Transaction Amount *
SARACAR	01-02-2016	23:42	5674	123456789012345	6000
Disputed Amount *	Dispute ID *	MSP Raised Date *	Mail Sent Date *	Subject Line *	Mail Received From *
5478	3034	01-02-2016	01-02-2016	PMB Bank MS-mallot C	XIZ
From Mail ID *	CC Mail ID *	Error Code *	Error Status *	Reference No *	Remarks *
XIZ@gmail.com	ABC@gmail.com	POWER FAIL-BATTERY	POWER FAIL-BATTERY	abc-456	XXX YYYY ZZZ

Upload File

Add Row Update Row

Figure 5 Reconciliation process

Global ATM Reconciliation Error Codes Mapping for all OEM Manufacturers with Common Codes for Rectification and Reconciliation

Ticket List View

Search Criteria

Select Criteria

Enter Keyword

Enter Keyword

Search

View: [All] [Active] [Error]

Search: Enter Keyword

S.No	Ticket ID	ATM ID	Bank	Ref	Location	Branch	Transaction Date	Debit Amount	Query Type	Sub Claim Type	Status	Action
1	PIS-ICED-180416-00001	23C2194	ICICI	PIS	BANGALORE	Bangalore	26-03-2018	1000	Customer Claim	Customer Claim	Open	
2	PIS-ICED-180416-00002	SP19426	ICICI	PIS	BANGALORE	Bangalore	26-03-2018	1000	Customer Claim	Customer Claim	Open	
3	PIS-ICED-180416-00003	SP19437	ICICI	PIS	BANGALORE	Bangalore	29-03-2018	10000	Customer Claim	Customer Claim	Open	
4	PIS-ICED-180416-00004	SP19438	ICICI	PIS	BANGALORE	Bangalore	29-03-2018	10000	Customer Claim	Customer Claim	Open	
5	PIS-1946-180416-00005	CABR462	PNB	PIS	GORAKHPUR	Gorakhpur	26-03-2018	10000	Customer Claim	Customer Claim	Open	
6	PIS-1946-180416-00006	0247420	PNB	PIS	VARANASI	Gorakhpur	26-03-2018	1000	Customer Claim	Customer Claim	Open	

Figure 6 Recon ticket

The example above is for illustrative purpose only and is not real data

There are four types of claimtype: Customerclaim, ReportingQuery, PhysicalShortage, Others, all these are interbank and MSP based with CRA and sans geography and we address them based on error codes and ticket generation.

Customer Claim	Error Code	Error Description
1	Application Started	Counter gone up, ATM Working Fine Application Started
2	Application Started	Counter gone up, ATM stopped working Application Started
3	Application Started	Counters not gone up, ATM working fine Application Started
4	Cash Retracted	ATM working fine Cash presented, Not Taken
5	Cash Retracted	ATM working fine CASH RETRACTED
6	Communication Error	ATM working fine Communication Error
7	Communication Error	Machine stop dispensing Communication Error
8	CPTe	Retraction Disabled ATM CPTe
9	Customer Timeout	ATM Working Fine Customer Timeout
10	Power Fail	ATM Working Fine Power fail
11	DR01:23:00:30/DR01:3F:00:40	Followed by DR01:23:00:30/DR01:3F:00:40 Successful
12	Successful Trxn	ATM Working Fine Successful
13	DI01:3F:39:34	Followed by DI01:3F:39:34 Successful
14	Decline Transaction	Followed by Declined Successful
15	E*2	Followed by E*2 Successful
16	Successful Trxn	Machine stop dispensing Successful
17	Successful Trxn	Followed by full reversal Successful
18	DI01:3B:33:33/DI01:3E:33:33	DI01:3B:33:33/DI01:3E:33:33 Machine stop Successful
19	DI01:3B:33:33/DI01:3E:33:33	DI01:3B:33:33/DI01:3E:33:33 ATM Working Successful
20	E*0	E*0 ATM Working Fine Successful

4. CONCLUSION

In this paper, we conclude that all the similar error codes that are generated by ATM machines can be categorized under some standard common codes that would be used widely. The Key benefits of this theory is to minimize the amount of duplicate codes that are produced by various ATM manufactures by sharing a unique common code so that it gains recognition equivalent to existing numerous duplicate codes. This tends to result in a better organization of codes providing simpler compilation that can even be interpreted by a common man.

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