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Use of Machine Learning and Data Stream to overwhelm the security and Challenges of Data Mining

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Abstract -*In today's world lot of data is present which can be personal or public, but that data has to be managed. Lot of data which is present is actually the data warehouse where the mining of data is done using machine learning concepts and along with that the data streaming is also done and thus security is being overcome for data mining i.e. data safety is not much, integrity issues are present, lot of memory is being used and costing is also more. So considering the banking concept the debit card (pay right now concept) having a chip is more secure than normal cards available in banks. That chip is inserted inside the card which undergoes java program being installed and so it will overcome the challenges of data mining. As people these days are facing many issues carrying the credit /debit or cash and along with that multiple cards are being carried for multiple places so to overcome this and carry only single card is the benefit to overcome public or customers issues along with that data mining challenges.*

People opt for having one card as technology is there and everything is electronic these days then there is no use of carrying so many cash or multiple cards in your pocket therefore making use of the technology just a single card is more than enough for the rewards or points holding along with the debit card for payment. So, there is no use of carrying different-different membership cards of different shops.

Thus, this paper focusses on the banking concept as how can a single debit card be enough to integrate on all the features together i.e. having all brands data or membership cards in one card along with keeping the updated points, rewards redeemed etc. along with the general functioning of the debit card i.e. can used for payments, can be used in ATMs etc.It will also cope with few features of Data stream and have the algorithms i.e. supervised, unsupervised or reinforcement in machine learning and with the combined concept of data stream and machine learning we can easily concentrate on the data mining challenges to be overcome by the use of banking concept in debit cards.

Key Words: **Debit Card, Membership Card, Platinum Unifare Debit Card, MultiFare Card.**

1. INTRODUCTION

To overcome the challenges of the data mining as its security issues are it is getting more costly, memory is also used a lot and that too it basically concentrates on social security not on the individual. Taking the banking concept the debit card is nothing but the card which carries the money in hand means whenever we do some shopping etc. money is needed that time. Debit card it lot more than a ATM machine for user don't have to carry any cash and can be used anywhere. Along with that few more cards (membership cards) are present in the market which says that along with debit card if we have specific vendors cards(membership cards) then those rewards or cashback, or redeemed points are provided in that card itself for further discounted shopping. Thus this paper provides the survey on how can we convert a debit card and other cards (membership card) into one single card.

1.1 Debit Cards

A card which will help in carrying no cash and thus safer for an individual for security purpose so called as Debit card. This cards not even helps in payments of many things like bill payment, recharge , shopping etc. but also helps in overcoming frauds as if we are not carrying any cash there are less chances of money or cash being stolen and if by chance the card is misplaced we can easily get it blocked by called respective banks customer care the account belongs to and re-issue a new card to that same customer who got the card misplaced.

Debit cards are the cards carrying the money along with it so if the user wish to do shopping he will do it according to his pocket at that point and so don't have to think about paying it latter which happens in credit card.

1.2 Membership Cards

Cards which are provided by the shops/brands for their specific points or redeeming those gained points along

with some discount when doing shopping next time from that same brand, hence a type of card which is used to make a club with customer who is doing regular shopping from that brand only so that after doing certain limit or amount of shopping from their shop he/she should get some discount and be benefited.

Thus this card is called as membership card of that shop like for example we receive big bazaar membership card, pantaloons cards etc. and they provide specific amount of discounts, some leverages at other stores also.

These cards helps in getting benefitted for both customer and vendor as if the customer is the member of that brand and is tempted to again and again do shopping from that same brand in order to get more discount etc. whereas the vendor is also benefitted as he making more cash from that same customer under the cover of membership cards.

But we in order to register we need to login or create a new account with specific phone numbers and fill the form online and after that we reach out to this card. And this card has to be carried separately for updating with the points whenever the transaction has been done with the concerned store. Thus these membership cards are being integrated into the same debit card which is being provided by the bank for easy to carry the cards problem.

1.3. Unifare Platinum ICICI Card

Here in ICICI new card has been launched naming the Unifare Card this card is the card being provided to the ICICI customers only, it is a debit card along with the benefits of having the metro card in it. Means no need to carry any metro card or token for traveling in metro we just need to swipe that metro cum debit card only on the machine and amount will automatically deducted from our debit card it is having 200Rs balance in it the moment it is about to finish we can automatically tap on the machine while swiping on the machine of metro and those 200Rs amount will be transferred or credited to the metro database which has been debited from your ICICI bank account.

The picture below shows how that Platinum Unifare Debit card of ICICI looks like:

Fig 1: Unifare Debit Card

1.4 Multi Fare Card

Here we are trying to create a new card wherein it is not only specified for ICICI users i.e.it should be provided by every bank and also having the same features as of ICICI bank card is having. All Metro (i.e. not only for Delhi it should be valid for the all the states), pantaloons, big bazaar etc. almost all the vendors are being included in the same cards and when we swipe that single card and get the points or redeemed offers in that same card from which we are trying to debit the amount of the purchase. Sensor will be there to sense that where exactly the card has been swiped and what exact details or points have to updated.

This card can be named as MultiFare Card ,which is trying to overcome the data mining challenges i.e. Security, focusing on the social public, variety of information, shopping patterns.

Thus, the card MultiFare Card is nothing but the combination of above explained different cards. Here database is used as H2 as this the using the 3Level of security so the data mining challenge of data security is removed and also for the front we have used Oxy Eclipse wherein the data is inserted i.e. the card number etc. to get through the payment methods thus this software is only used because it is the very light software and will not hang even if the internet service provided is being slow.

2. EXPERIMENT AND IMPLEMENTATION:

2.1 H2 Database:

For backend we have used H2 database this database uses very less easy to learn and if provided with some guidance it will work hence not so the supervised learning is also present also the data is being extracted hence data stream is also present.

Moreover the data is secure as this database uses 3-level security method where previously banks used to have

mirroring concept but not they have synchronizing concept. Where the mirroring concept defines that if the data is updated at one place and query is committed but we have two accounts in same bank one is within India and other outside it will only update at one place but the Synchronizing concept updates at all places and thus data mining challenges are overcome using this banking concept.H2 is a relational database management system written in Java. It can be embedded in Java applications or run in the client-server mode. The disk footprint (size of the jar file) is about 1.5 MB. The software is available as open source software Mozilla Public License 2.0 or the original Eclipse Public License.

The development of the H2 database engine started in May 2004, and first published in December 2005. The database engine was written by Thomas Mueller. He also developed the Java database engine Hypersonic SQL.

In 2001, the Hypersonic SQL project was stopped, and the HSQLDB Group was formed to continue work on the Hypersonic SQL code. The name H2 stands for Hypersonic 2, however H2 does not share code with Hypersonic SQL or HSQLDB. H2 is built from scratch.

2.2 OXY Eclipse

An application or software used along the H2 database and generated a java program which is easy to use and run.

Eclipse is an integrated development environment(IDE) use in computer programming, and is the most widely used Java IDE. It contains a base workspace and an extensible plug-in system for customizing the environment.

Eclipse is written mostly in Java and its primary use is for developing Java applications, but it may also be used to develop applications in other programming languages through the use of plugins, including: C, C++, COBOL, D, Fortran, JavaScript and Prolog. The Eclipse software development kit (SDK), which includes the Java development tools, is meant for Java developers. Users can extend its abilities by installing plug-ins written for the Eclipse Platform, such as development toolkits for other programming languages, and can write and contribute their own plug-in modules.

Eclipse uses plug-ins to provide all the functionality within and on top of the runtime system. Its runtime system is based on Equinox, an implementation of the OSGI core framework specification. With the exception of a small run-time kernel, everything in Eclipse is a plug-in. This means that every plug-in developed integrates with Eclipse in exactly the same way as other plug-in in this respect, all features are "created equal". Eclipse provides plug-ins for a wide variety of features, some of which are through third parties using both free and commercial models. Examples of plug-ins include for UML, for Sequence and other UML diagrams, a plug-in for DB Explorer, and many others. Eclipse supports development for Tomcat, Glassfish and many other servers and is often capable of installing the required server (for development) directly from the IDE. It supports remote debugging, allowing the user to watch variables and step through the code of an application that is running on the attached server.

2.3 Table Creation

CREATE TABLE TaAccount(CoSNo INT PRIMARY KEY auto_increment ,CoCardNo BIGINT not null,CoVaildDate varchar(20) not null,CoExpDate varchar(4) not null,CoCvv int not null,CoFirstName Varchar(max) not null, CoMiddleName varchar(50) ,CoLastName Varchar(50)not null)

- Table with TaAcount is created which carries details all those which are present on the card.

2.4 Database Details

InsertintoTaAccount(CoCardNo,CoValidDate,CoExpDate,CoCvv,CoFirstName,CoMiddleName,CoLastName)Values(6645524855784440,'08-16','08-20',2883,'Manoj','kumar','Sinha')

- Database is created when a card gets swiped on the machine the details which will be extracted and those data will be sent to respective banks for crediting the amount from customer's bank and will be debited into the merchants bank.

Table below shows the details stored:

Table -1: Database Created while entering the data from above queries.

Select * from TAACCOUNT;

COSNO	COCARDNO	COVAILDDATE	COEXPDATE	COCVV	COFIRSTNAME	COMIDDLENAME	COLASTNAME
1	123456789101102	08-16	08-20	2883	Nishant		
33	6645524855784440	08-16	08-20	2883	Manoj	kumar	Sinha
34	6645524855784440	08-16	08-20	2883	Manoj	kumar	Sinha
35	6645524855784441	08-16	08-20	2883	Preeti		Singh
36	6645524855784442	08-16	08-20	288	Jansi	Rani	Thangeval
37	6645524345784442	08-16	08-20	288	Anamika		Yadava
38	6440524345784442	05-16	10-22	288	Anjali		Yadava
39	6645521235784440	08-16	08-20	2883	Manish		Sinha
40	6645524855784440	08-16	08-20	2883	Varsha	kumar	Nayak

(9 rows, 45 ms)

Edit

Here the table is containing the Account numbers along with the validation date present on the card and the CVV numbers for the security purpose and also the customer's name who is doing the transaction.

Thus this card provides those details and creates a database for the individual merchant like whosoever swipes card on his shop he is having the database for the

whole transaction for further details to be extracted or information gaining using data stream method.

3. CONCLUSIONS

Thus to over the challenges of data mining using the machine learning algorithms i.e. Supervised, unsupervised and Reinforcement methods and along with that trying to cope with data stream details wherein the data is being extracted which is of use for the current time along with drift concept theory all this together is being tried to complete and create a new debit card specifying the concept in only banking sector and thus came up the concept of debit card to overcome the challenges of data mining using the machine learning algorithms and data steam concepts and integrate all functions of the different cards into one single card and spread into the whole world for easy convenience of the customers and also helps in overcoming the fraud along with that the high level security is present and memory is saved and cost cutting is also there as less cost is included: instead of developing too many cards costing is done only for one card and all this is possible using the H2 database, oxy eclipse, sensors and a chip. Hence this concept is just to overcome the challenges and provide a better living.

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