

# Automated Fingerprint based ATM (linking Aadhar)

## **ABSTRACT:**

The growth in electronic transactions has resulted in a greater demand for fast and accurate user identification and authentication. Access codes for buildings, banks accounts and computer systems often use personal identification numbers (PIN's) for identification and security clearances. Conventional method of identification based on possession of ID cards or exclusive knowledge like a social security number or a password are not all together reliable. An embedded fingerprint biometric authentication scheme for automated teller machine (ATM) banking systems is proposed in this paper. In this scheme, a fingerprint biometric technique is fused with the ATM for person authentication to ameliorate the security level.

## REQUIREMENT ANALYSIS

List of tables:

- BANK
- AADHAR
- VERIFICATION DATA
- ATM
- TRANSACTIONS

List of attributes with their domain types:

BANK:

Bank Name: bname –Varchar2(20)

Name: username-varchar2(20)

Amount: amount-number(20)

Account Pin: accpin-number()

Account Id: accid- number()

AADHAR:

Aadhar number: anum-number()

Name: name-varchar2(20)

Gender: gender-varchar(10)

Address: address-varchar2(20)

Father name: fname-varchar2(20)

Verification Data:

FingerPrints: fingerprints-varchar()

Name: name-varchar2(20)

Fingertype: fingertype-varchar2(20)

**Title: Automated Fingerprint based ATM (linking Aadhar)**

ATM:

Bank Name:aname-varchar2(20)

Atm Card Number-acnum-number()

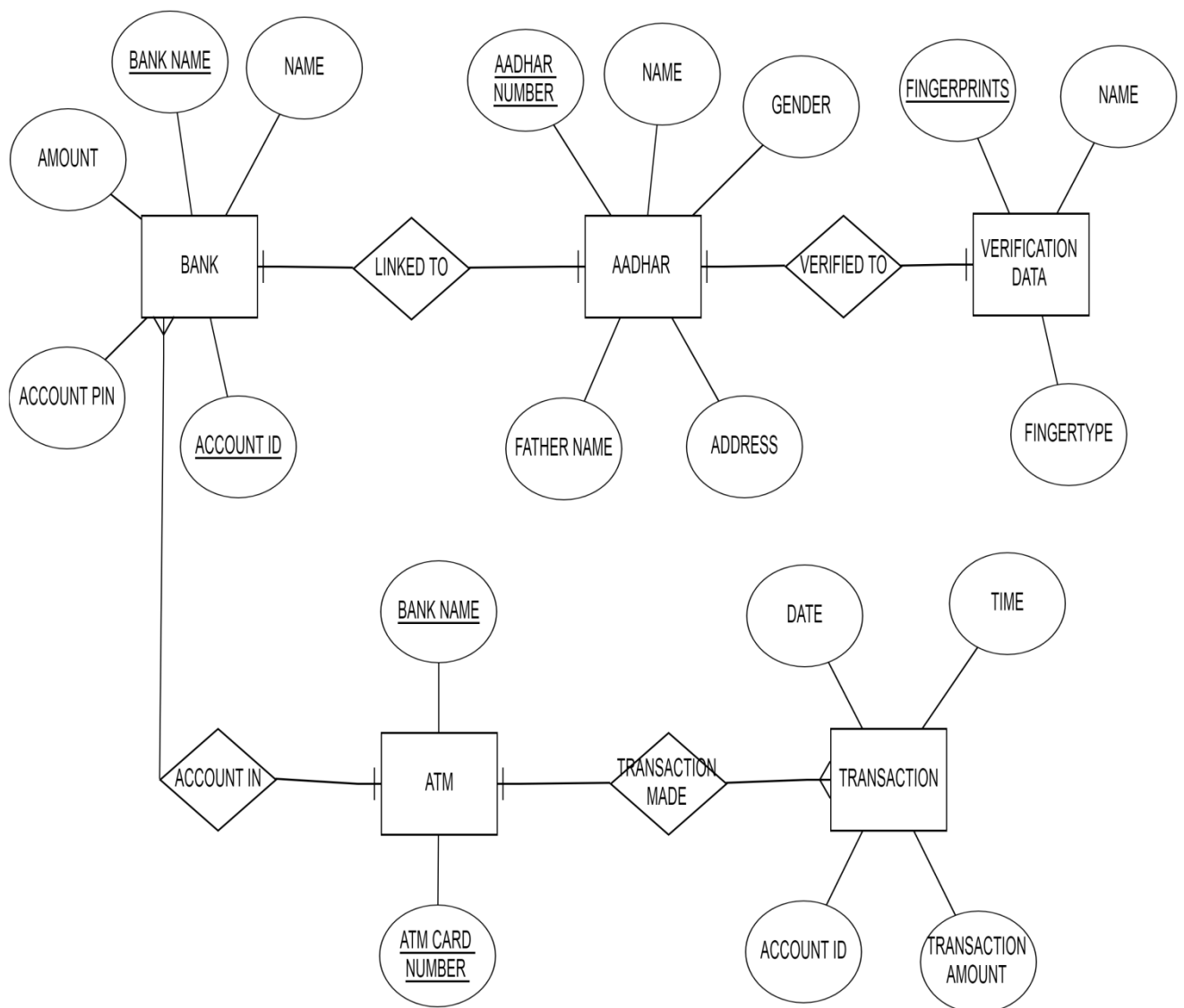
TRANSACTIONS:

Date: tdate-number()

Transaction Amount: transamount-number()

Time: time-number()

Account id: acid-number()

**ER DIAGRAM:**

## Mapping Cardinalities and Participation Constraints:

A account holder can have only one aadhar card so there is one one relation between bank account and adhar card.

Each person is having different fingerprints so it is having a one to one relation between aadhar and verification data.

Different person can use different atm so there is a many to one relation between bank and atm.

One atm card holder can make different transaction at different data and time so there is a one to many relation between atm and transaction.

## DDL AND DML COMMANDS :

```
SQL> CREATE TABLE BANK(BNAME NUMBER, USERNAME VARCHAR2(20),ACCID
NUMBER,ACCPIN NUMBER,AMOUNT NUMBER);
```

Table created.

```
SQL> DESC BANK
```

Name	Null?	Type
BNAME		NUMBER
USERNAME		VARCHAR2(20)
ACCID		NUMBER
ACCPIN		NUMBER
AMOUNT		NUMBER

```
SQL> ALTER TABLE BANK ADD(PRIMARY KEY(BNAME));
```

Table altered.

```
SQL> DESC BANK
```

Name	Null?	Type
BNAME	NOT NULL	NUMBER
USERNAME		VARCHAR2(20)
ACCID		NUMBER
ACCPIN		NUMBER
AMOUNT		NUMBER

```
SQL> ALTER TABLE BANK MODIFY(BNAME VARCHAR2(20));
```

Table altered.

```
SQL> DESC BANK
```

Name	Null?	Type
BNAME	NOT NULL	VARCHAR2(20)

**Title: Automated Fingerprint based ATM (linking Aadhar)**

```

USERNAME          VARCHAR2(20)
ACCID              NUMBER
ACCPIN             NUMBER
AMOUNT             NUMBER

```

```
SQL> DESC BANK
```

Name	Null?	Type
-----		
BNAME	NOT NULL	VARCHAR2(20)
USERNAME		VARCHAR2(20)
ACCID	NUMBER	
ACCPIN	NUMBER	
AMOUNT	NUMBER	

```
SQL> INSERT INTO BANK
```

```
VALUES('&BNAME','&USERNAME',&ACCID,&ACCPIN,&AMOUNT);
```

```
Enter value for bname: SBI
```

```
Enter value for username: PRANAV
```

```
Enter value for accid: 1602116
```

```
Enter value for accpin: 116
```

```
Enter value for amount: 10000
```

```
old 1: INSERT INTO BANK
```

```
VALUES('&BNAME','&USERNAME',&ACCID,&ACCPIN,&AMOUNT)
```

```
new 1: INSERT INTO BANK VALUES('SBI','PRANAV',1602116,116,10000)
```

```
SQL> INSERT INTO BANK
```

```
VALUES('&BNAME','&USERNAME',&ACCID,&ACCPIN,&AMOUNT);
```

```
Enter value for bname: HDFC
```

```
Enter value for username: ABHI
```

```
Enter value for accid: 1602061
```

```
Enter value for accpin: 061
```

```
Enter value for amount: 20000
```

```
old 1: INSERT INTO BANK
```

```
VALUES('&BNAME','&USERNAME',&ACCID,&ACCPIN,&AMOUNT)
```

```
new 1: INSERT INTO BANK VALUES('HDFC','ABHI',1602061,061,20000)
```

```
1 row created.
```



**Title: Automated Fingerprint based ATM (linking Aadhar)**

SQL> /

Enter value for bname: ICIC

Enter value for username: BADRINATH

Enter value for accid: 1602066

Enter value for accpin: 066

Enter value for amount: 30000

old 1: INSERT INTO BANK

VALUES('&BNAME','&USERNAME',&ACCID,&ACCPIN,&AMOUNT)

new 1: INSERT INTO BANK VALUES('ICIC','BADRINATH',1602066,066,30000)

1 row created.

SQL> /

Enter value for bname: PNB

Enter value for username: YASHO

Enter value for accid: 1602120

Enter value for accpin: 120

Enter value for amount: 40000

old 1: INSERT INTO BANK

VALUES('&BNAME','&USERNAME',&ACCID,&ACCPIN,&AMOUNT)

new 1: INSERT INTO BANK VALUES('PNB','YASHO',1602120,120,40000)

1 row created.

SQL> INSERT INTO BANK

VALUES('&BNAME','&USERNAME',&ACCID,&ACCPIN,&AMOUNT);

Enter value for bname: SBI

Enter value for username: VARUN

Enter value for accid: 1602115

Enter value for accpin: 115

Enter value for amount: 12000

old 1: INSERT INTO BANK

VALUES('&BNAME','&USERNAME',&ACCID,&ACCPIN,&AMOUNT)

new 1: INSERT INTO BANK VALUES('SBI','VARUN',1602115,115,12000)

1 row created.

SQL> SELECT \* FROM BANK;

**Title: Automated Fingerprint based ATM (linking Aadhar)**

BNAME	USERNAME	ACCID	ACCPIN	AMOUNT
SBI	PRANAV	1602116	116	10000
HDFC	ABHI	1602061	61	20000
ICIC	BADRINATH	1602066	66	30000
PNB	YASHO	1602120	120	40000
SBI	VARUN	1602115	115	12000

1 row created.

```
SQL> CREATE TABLE AADHARCARD(ANUM NUMBER PRIMARY KEY,NAME
VARCHAR2(20),GENDER VARCHAR(10),ADDRESS VARCHAR2(50),FNAME
VARCHAR2(20));
```

Table created.

```
SQL> INSERT INTO AADHARCARD
VALUES(&ANUM,&NAME,&GENDER,&ADDRESS,&FNAME');
Enter value for anum: 1861
Enter value for name: ABHI
Enter value for gender: M
Enter value for address: SUNCITY
Enter value for fname: SRINU
old 1: INSERT INTO AADHARCARD
VALUES(&ANUM,&NAME,&GENDER,&ADDRESS,&FNAME')
new 1: INSERT INTO AADHARCARD VALUES(1861,'ABHI','M','SUNCITY','SRINU')
```

1 row created.

```
SQL> /
Enter value for anum: 1866
Enter value for name: BADRINATH
Enter value for gender: M
Enter value for address: GAJWEL
Enter value for fname: VENU
```

**Title: Automated Fingerprint based ATM (linking Aadhar)**

```
old  1: INSERT INTO AADHARCARD
VALUES(&ANUM,&NAME,&GENDER,&ADDRESS,&FNAME')
new  1: INSERT INTO AADHARCARD
VALUES(1866,'BADRINATH','M','GAJWEL','VENU')
```

1 row created.

SQL> /

Enter value for anum: 18115

Enter value for name: VARUN

Enter value for gender: M

Enter value for address: JANGON

Enter value for fname: RAMU

```
old  1: INSERT INTO AADHARCARD
VALUES(&ANUM,&NAME,&GENDER,&ADDRESS,&FNAME')
new  1: INSERT INTO AADHARCARD
VALUES(18115,'VARUN','M','JANGON','RAMU')
```

1 row created.

SQL> /

Enter value for anum: 18116

Enter value for name: PRANAV

Enter value for gender: M

Enter value for address: AMEERPET

Enter value for fname: SRINIVAS

```
old  1: INSERT INTO AADHARCARD
VALUES(&ANUM,&NAME,&GENDER,&ADDRESS,&FNAME')
new  1: INSERT INTO AADHARCARD
VALUES(18116,'PRANAV','M','AMEERPET','SRINIVAS')
```

1 row created.

SQL> /

Enter value for anum: 118120

Enter value for name: YASHO

Enter value for gender: M

**Title: Automated Fingerprint based ATM (linking Aadhar)**

Enter value for address: NAMPALLY

Enter value for fname: RAMU

old 1: INSERT INTO AADHARCARD

VALUES(&ANUM,&NAME,&GENDER,&ADDRESS,&FNAME')

new 1: INSERT INTO AADHARCARD

VALUES(118120,'YASHO','M','NAMPALLY','RAMU')

1 row created.

SQL> SELECT \* FROM AADHARCARD;

ANUM NAME	GENDER	ADDRESS	FNAME
1861 ABHI	M	SUNCITY	SRINU
1866 BADRINATH	M	GAJWEL	VENU
18115 VARUN	M	JANGON	RAMU

ANUM NAME	GENDER	ADDRESS	FNAME
18116 PRANAV	M	AMEERPET	SRINIVAS
118120 YASHO	M	NAMPALLY	RAMU

SQL> DESC VERIFICATIONDATA

**Title: Automated Fingerprint based ATM (linking Aadhar)**

Name	Null?	Type
-----		
FINGERPRINT	NOT NULL	VARCHAR2(20)
NAME		VARCHAR2(20)
FINGERTYPE		VARCHAR2(20)

```
SQL> INSERT INTO VERIFICATIONDATA
VALUES('&FINGERPRINT','&NAME','&FINGERTYPE');
Enter value for fingerprint: =
Enter value for name: PRANAV
Enter value for fingertype: INDEX
old 1: INSERT INTO VERIFICATIONDATA
VALUES('&FINGERPRINT','&NAME','&FINGERTYPE')
new 1: INSERT INTO VERIFICATIONDATA VALUES('=', 'PRANAV', 'INDEX')
```

1 row created.

```
SQL> /
Enter value for fingerprint: )
Enter value for name: ABHI
Enter value for fingertype: INDEX
old 1: INSERT INTO VERIFICATIONDATA
VALUES('&FINGERPRINT','&NAME','&FINGERTYPE')
new 1: INSERT INTO VERIFICATIONDATA VALUES(')', 'ABHI', 'INDEX')
```

1 row created.

```
SQL> /
Enter value for fingerprint: @
Enter value for name: BADRINATH
Enter value for fingertype: THUMB
old 1: INSERT INTO VERIFICATIONDATA
VALUES('&FINGERPRINT','&NAME','&FINGERTYPE')
new 1: INSERT INTO VERIFICATIONDATA VALUES('@', 'BADRINATH', 'THUMB')
```

1 row created.

**Title: Automated Fingerprint based ATM (linking Aadhar)**

SQL&gt; /

Enter value for fingerprint: ?

Enter value for name: YASHO

Enter value for fingertype: RING FINGER

old 1: INSERT INTO VERIFICATIONDATA

VALUES('&amp;FINGERPRINT','&amp;NAME','&amp;FINGERTYPE')

new 1: INSERT INTO VERIFICATIONDATA VALUES('?', 'YASHO', 'RING FINGER')

1 row created.

SQL&gt; /

Enter value for fingerprint: &gt;

Enter value for name: YASHO

Enter value for fingertype: THUMB

old 1: INSERT INTO VERIFICATIONDATA

VALUES('&amp;FINGERPRINT','&amp;NAME','&amp;FINGERTYPE')

new 1: INSERT INTO VERIFICATIONDATA VALUES('&gt;', 'YASHO', 'THUMB')

1 row created.

SQL&gt; SELECT \* FROM VERIFICATIONDATA;

FINGERPRINT	NAME	FINGERTYPE
=	PRANAV	INDEX
)	ABHI	INDEX
@	BADRINATH	THUMB
?	YASHO	RING FINGER
>	YASHO	THUMB

SQL&gt; ALTER TABLE ATM DROP(AMOUNT);

Table altered.

SQL&gt; INSERT INTO ATM VALUES('&amp;ANAME', &amp;ACNUM);

Enter value for aname: SBI

**Title: Automated Fingerprint based ATM (linking Aadhar)**

Enter value for acnum: 116

old 1: INSERT INTO ATM VALUES('&ANAME',&ACNUM)

new 1: INSERT INTO ATM VALUES('SBI',116)

1 row created.

SQL> /

Enter value for aname: HDFC

Enter value for acnum: 61

old 1: INSERT INTO ATM VALUES('&ANAME',&ACNUM)

new 1: INSERT INTO ATM VALUES('HDFC',61)

1 row created.

SQL> /

Enter value for aname: ICIC

Enter value for acnum: 66

old 1: INSERT INTO ATM VALUES('&ANAME',&ACNUM)

new 1: INSERT INTO ATM VALUES('ICIC',66)

1 row created.

SQL> /

Enter value for aname: PNB

Enter value for acnum: 120

old 1: INSERT INTO ATM VALUES('&ANAME',&ACNUM)

new 1: INSERT INTO ATM VALUES('PNB',120)

1 row created.

SQL> /

Enter value for aname: SBH

Enter value for acnum: 115

old 1: INSERT INTO ATM VALUES('&ANAME',&ACNUM)

new 1: INSERT INTO ATM VALUES('SBH',115)

1 row created.

**Title: Automated Fingerprint based ATM (linking Aadhar)**

```
SQL> SELECT * FROM ATM;
```

ANAME	ACNUM
SBI	116
HDFC	61
ICIC	66
PNB	120
SBH	115

```
SQL> UPDATE TRANSACTION SET ACCID=&ACCID WHERE TIME=12;
```

```
Enter value for accid: 1602116
```

```
old 1: UPDATE TRANSACTION SET ACCID=&ACCID WHERE TIME=12
```

```
new 1: UPDATE TRANSACTION SET ACCID=1602116 WHERE TIME=12
```

```
1 row updated.
```

```
SQL> /
```

```
Enter value for accid:
```

```
old 1: UPDATE TRANSACTION SET ACCID=&ACCID WHERE TIME=12
```

```
new 1: UPDATE TRANSACTION SET ACCID= WHERE TIME=12
```

```
UPDATE TRANSACTION SET ACCID= WHERE TIME=12
```

```
*
```

```
ERROR at line 1:
```

```
ORA-00936: missing expression
```

```
SQL> UPDATE TRANSACTION SET ACCID=&ACCID WHERE TIME=13;
```

```
Enter value for accid: 1602115
```

```
old 1: UPDATE TRANSACTION SET ACCID=&ACCID WHERE TIME=13
```

```
new 1: UPDATE TRANSACTION SET ACCID=1602115 WHERE TIME=13
```

```
1 row updated.
```

```
SQL> UPDATE TRANSACTION SET ACCID=&ACCID WHERE TIME=14;
```

```
Enter value for accid: 1602061
```

```
old 1: UPDATE TRANSACTION SET ACCID=&ACCID WHERE TIME=14
```



## DBMS Assignment -I

### Title: Automated Fingerprint based ATM (linking Aadhar)

new 1: UPDATE TRANSACTION SET ACCID=1602061 WHERE TIME=14

1 row updated.

SQL> SELECT \* FROM TRANSACTION;

TDATE	TIME	TRANSAMONUT	ACCID
23012000	12	10000	1602116
24012000	13	10000	1602115
25012000	14	200000	1602061