VIT®

Vellore Institute of Technology

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CSE2004 : DATABASE MANAGEMENT SYSTEMS

J-COMPONENT Project Report

Review

ATM Database management system

Team Members :

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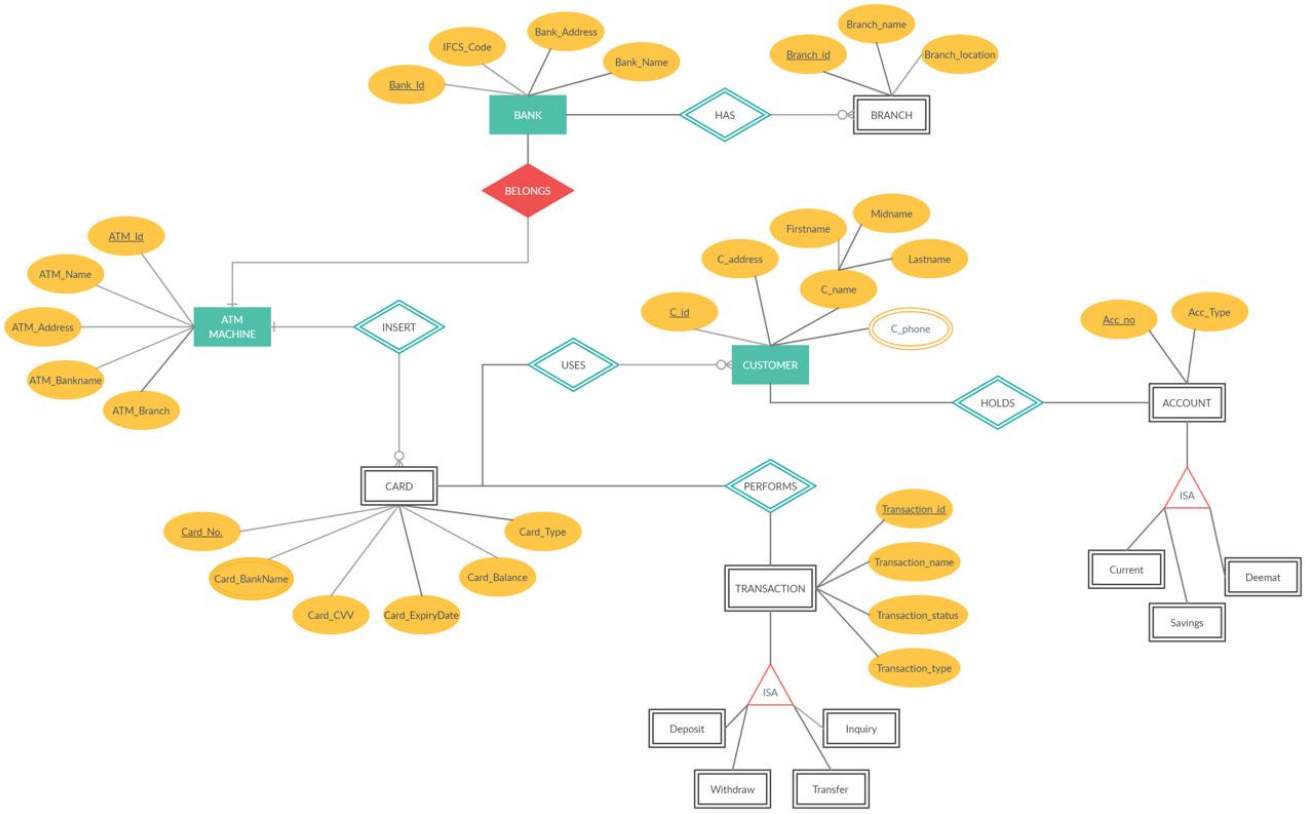
ABSTRACT:

This project is basically creating a database management system for the transaction that are being taken place in the ATM of any bank. Aim of the project is to creating a backend program of the processes taking place using SQL. This model deals with the relationship between the customer, ATM machine & Bank. The other entities play a supportive weak role. So basically this helps the banks to debit or credit the amount of the customer from his respective account and also keep the record of his/her transaction made.

ER DIAGRAM:



TABLES :

ATM Machine

Attribute	Data type	Constraint
ATM_Id	Varchar2	Primary key
ATM_Name	Varchar2	None
ATM_Add	Varchar2	None
ATM_Bankname	Varchar2	None
ATM_Branch	Varchar2	None

Bank

Attribute	Data type	Constraint
Bank_Id	Varchar2	Primary key
IFSC_Code	Varchar2	None
Bank_Add	Varchar2	None
Bank_Name	Varchar2	None
B_ATM_Id	Varchar2	Foreign key

Card

Attribute	Data type	Constraint
Card_No	Number	Primary key
Card_Bankname	Varchar2	None
Card_CVV	Number	None
Card_ExpiryDate	Date	None
Card_Balance	Number	None
Card_Type	Varchar2	None

Transaction

Attribute	Data Type	Constraint
Transaction_Id	Varchar2	Primary key
Transaction_Name	Varchar2	None
Transaction_status	Varchar2	None
Transaction_type	Varchar2	None

Customer

Attribute	Data type	Constraint
C_Id	Varchar2	Primary key
C_add	Varchar2	None
F_name	Varchar2	None
M_Name	Varchar2	None
L_Name	Varchar2	None
C_Card_No	Number	Foreign Key

Branch

Attribute	Data type	Constraint
Branch_Id	Varchar2	Primary key
Branch_Name	Varchar2	None
Branch_loc	Varchar2	None
B_Bank_Id	Varchar2	Foreign key

Account

Attribute	Data type	Constraint
Acc_No	Number	Primary key
Acc_type	Varchar2	None
A_C_Id	Varchar2	Foreign Key

Current

Attribute	Data type	Constraint
Acc_No	Number	Primary & Foreign Key

Savings

Attribute	Data type	Constraint
Acc_No	Number	Primary & Foreign Key

Deemat

Attribute	Data type	Constraint
Acc_No	Number	Primary & Foreign Key

Deposit

Attribute	Data type	Constraint
Transaction_Id	Varchar2	Primary & Foreign key

Withdraw

Attribute	Data type	Constraint
Transaction_Id	Varchar2	Primary & Foreign key

Transfer

Attribute	Data type	Constraint
Transaction_Id	Varchar2	Primary & Foreign key

Inquiry

Attribute	Data type	Constraint
Transaction_Id	Varchar2	Primary & Foreign key

Customer Phone

Attribute	Data type	Constraint
P_C_Id	Varchar2	Primary & Foreign key
C_phone	Number	None

Temp

Attribute	Data type	Constraint
Card_No	Number	Primary key
C_Trans_Id	Varchar2	Primary key

Code:

```
create table Transaction(
Transaction_Id varchar2(10) primary key,
Transaction_Name varchar2(10),
Transaction_status varchar2(10),
Transaction_type varchar2(10)
)
create table Card(
Card_No number(16) primary key,
Card_Bankname varchar2(10),
Card_CVV number(3),
```

```
Card_ExpiryDate date,
Card_Balance number(16),
Card_Type varchar2(10)
)
create table ATM_Machine(
ATM_Id varchar2(10) primary key,
ATM_Name varchar2(10),
ATM_Add varchar2(80),
ATM_Bankname varchar2(10),
ATM_Branch varchar2(10)
)
create table Bank(
Bank_Id varchar2(10) primary key,
IFSC_Code varchar2(15),
Bank_Add varchar2(80),
Bank_Name varchar2(10),
B_ATM_Id  varchar2(10) references ATM_Machine(ATM_Id)
)
create table Customer(
C_Id varchar2(10) primary key,
C_add varchar2(80),
F_name varchar2(20),
M_name varchar2(20),
L_name varchar2(20),
C_Card_No number(16) references Card(Card_No)
)
create table Branch(
Branch_Id varchar2(15) primary key,
Branch_Name varchar2(15),
Branch_loc varchar2(15),
```

```
B_Bank_Id varchar2(10) references Bank(Bank_Id)
)
create table Account(
Acc_no number(16) primary key,
Acc_type varchar2(10),
A_C_Id varchar2(10) references Customer(C_Id)
)
create table CurrentA(
Acc_no number(16) primary key
)
create table Savings(
Acc_no number(16) primary key
)
create table Demat(
Acc_no number(16) primary key
)
create table CustomerPhone(
P_C_Id varchar2(10) primary key,
C_phone number(10)
)
alter table CurrentA
add foreign key (Acc_no) references Account(Acc_no);
alter table Savings
add foreign key (Acc_no) references Account(Acc_no);
alter table Demat
add foreign key (Acc_no) references Account(Acc_no);
```

NORMALIZATION:

ATM machine table

Attributes : ATM_Id, ATM_Name, ATM_Add, ATM_BankName, ATM_Branch

Functional dependencies :-

ATM_Id --> ATM_Name

ATM_Id --> ATM_Bankname

ATM_Id --> ATM_Branch

ATM_Bankname, ATM_Branch --> ATM_Add

Primary key : ATM_Id

2NF :

The table is already in 2NF form because there are no partial dependencies.

3NF :

Step I:

The table is not in 3NF because on checking the functional dependencies, we find we find transitive dependencies where RHS has non-key attributes, so splitting it into two more tables :

Table I : (ATM_BankName,ATM_Branch,ATM_Add)

Table II : (ATM_Id,ATM_Name,ATM_BankName,ATM_Branch)

Step II : Checking the new tables for 3NF form

Now Table I and II are in 3NF form.

BCNF:

Table I and II are in BCNF form too.

Bank table

Attributes : Bank_Id, IFSC_Code, Bank_Add, Bank_Name

Functional dependencies :

Bank_Id --> IFSC_Code

IFSC_Code --> Bank_Name

IFSC_Code --> Bank_Add

Primary key : Bank_Id

2NF:

The table is already in 2NF form because there are no partial dependencies.

3NF:

Step I:

The table is not in 3NF because on checking the functional dependencies, we find we find transitive dependencies where RHS has non-key attributes, so splitting it into two more tables :

Table I : (IFSC_Code,Bank_Name,Bank_Add)

Table II : (Bank_Id,IFSC_Code)

Step II : Checking the new tables for 3NF form

Now Table I and II are in 3NF form.

BCNF :

Table I and II are in BCNF form too.

Card table

Attributes : Card_No, Card_BankName, Card_CVV, Card_ExpiryDate, Card_Balance, Card_Type

Functional dependencies :

Card_No --> Card_BankName

Card_No --> Card_CVV

Card_No --> Card_ExpiryDate

Card_No --> Card_Balance

Card_No --> Card_Type

Primary key : Card_No

2NF:

The table is already in 2NF form because there are no partial dependencies

3NF:

The table is already in 3NF form because there are no transitive dependencies among the attributes

BCNF:

The table is in BCNF form too

Customer table

Attributes : C_Id, C_add, F_name, M_name, L_name

Functional dependencies :

C_Id --> F_name

C_Id --> M_Name

C_Id --> L_Name

C_Id --> C_add

Primary key : C_Id

2NF:

The table is already in 2NF form because there are no partial dependencies

3NF:

The table is already in 3NF form because there are no transitive dependencies among the attributes

BCNF:

The table is in BCNF form too

Branch table

Attributes : Branch_Id, Branch_Name, Branch_loc

Functional dependencies :

Branch_Id --> Branch_Name

Branch_Id --> Branch_loc

Primary key : Branch_Id

2NF:

The table is already in 2NF form because there are no partial dependencies

3NF:

The table is already in 3NF form because there are no transitive dependencies among the attributes

BCNF:

The table is in BCNF form too

Account table

Attributes : Acc_no, Acc_type

Functional dependencies:

Acc_No --> Acc_type

Primary key : Acc_no

2NF:

The table is already in 2NF form because there are no partial dependencies

3NF:

The table is already in 3NF form because there are no transitive dependencies among the attributes

BCNF:

The table is in BCNF form too

//*/

		Varachha, Surat, Gujarat 395003		
T208361	OTATM_805	G-1/A ITC Building, Majura Gate Crossing, Katargam, Surat, Gujarat 395002	T JSM Bank	Katargam
H088295	OHATM_037	G/3, Sai Avenue Apartment Dindoli, opposite Rukmani Park, Bhagal, Gujarat 394210	HDFC Bank	Bhagal
I095840	OIATM_734	Shop No.12 to 15, Ring Rd, Reshamwala Market, Adajan, Surat, Gujarat 395002	Indian Bank	Adajan
A098206	OAATM_501	ShopNo.49 Atlanta Shopping Mall,New, Udhana, Surat, Gujarat 395001	Andhra Bank	Udhana

Bank

Bank_Id	IFSC_Code	Bank_Add	Bank_Name	B_Atm_Id
ICB00276	ICBK0000672	Silver Palm 1, Opposite Snehmilan Garden, Kadampally Society, Timaliawad, Nanpura, Surat, Gujarat 395001	ICICI Bank	I095752
IB03728	IBBK0000836	Meridian Tower, Ground Floor, UG2, Ring Rd, Udhana Darwaja, Bhatena, Surat, Gujarat 395001	Indian Bank	I036842
ICB00277	ICBK0000259	Station Road, Begampura Rd, Zampa Bazaar,	ICICI Bank	I028296

		Surat, Gujarat 395003		
TB02654	TBBK0000847	Shoping center, Mahavir Surat, Mahavir Nagar Society, Katargam, Surat, Gujarat 395004	T JSM Bank	T208361
HB04302	HBBK0000328	Prime Arcade, 1st Floor, Tower A, Adajan, Surat, Gujarat 395009	HDFC Bank	H088295
IB06824	IBBK0000949	Trade House, SHOP NO. 4,GROUND, Ring Rd, Salabatpura, Surat, Gujarat 395002	Indian Bank	I095840
AB02950	ABBK0000471	Plot No.57/A, Ug Shop No.10 To 12, Survey No.513,Sarela Shopping Centre, Athwa, Surat, Gujarat 395007	Andhra Bank	A098206

Card

Card_No	Card_BankName	Card_ CVV	Card_Expiry Date	Card_Balance	Card_Type
6682 1123 0900 8811	ICICI Bank	234	01-04-2024	44625	Debit
8721 3457 7632 6783	Indian Bank	934	12-05-2023	22334	Debit
3823 5983 9245 4028	ICICI Bank	446	23-07-2024	4450	Credit
9372 8990 8266 0254	T JSM Bank	268	30-09-2021	23454	Pre-paid
4983 8383 9366 0553	HDFC Bank	751	26-03-2022	11890	Credit
1727 4507 0457 0482	Indian Bank	693	10-10-2023	9764	Pre-paid
8783 9394 0035 9240	Andhra Bank	591	18-01-2025	27950	Debit

Customer

C_Id	C_add	F_name	M_name	L_name	C_Card_No
CU001ER	6 th Floor, Gandhi Palace, Nr Jain Derasar, B/h On-Off Showroom, Timaliyawad,	Arvind	Devdutt	Sinha	6682 1123 0900 8811

	Nanpura, Surat				
CU838ER	Shop 238, Adarsh Market 2, Ring Rd, Surat, Gujarat	Gaurav	Anish	Patil	8721 3457 7632 6783
CU933ER	46 , Old Qtr No , Kem Hospital, Parel, Surat, 400012	Bhavesh	Nandan	Garg	3823 5983 9245 4028
CU023ER	95 / Lujwanti Apartments, Nal Stop,near Sonal Hall,karve Road, Erandwane, Pune, 411004	Jenish	Anand	Patel	9372 8990 8266 0254
CU766ER	Wz 325, Jail Road, Near Ibp Petrol Pump, Hari Nagar, 110064	Pratham	Ramesh	Shinde	4983 8383 9366 0553
CU038ER	140 , So Lucky Corner, Sir M.v. Road, Opp Holy Family Church	Chinmay	Ishant	Tripathi	1727 4507 0457 0482
CU503ER	Daya Niwas, 137 S K Bole Road, Agar Bazar, Surat	Rahul	Arjun	Arora	8783 9394 0035 9240

Branch

Branch_Id	**Branch_Name**	**Branch_loc**	**B_Bank_Id**
BR0092	NP Savani Branch	LP Savani	ICB00276
BR8822	KP Branch	Kalupur	IB03728
BT7529	Varachha Branch	Varachha	ICB00277
BR6280	KG Branch	Katargam	TB02654
BR5282	Bhagal Branch	Bhagal	HB04302
BR1721	AJ Branch	Adajan	IB06824
BR3277	UA Branch	Udhana	AB02950

Account

Acc_no	Acc_type	A_C_Id
0092000186549364	Savings	CU001ER
8822000167543288	Savings	CU838ER
7529000385439864	Demat	CU933ER
6280000265678969	Current	CU023ER
5282000178755432	Savings	CU766ER
1721000245432199	Current	CU038ER
3277000385467942	Demat	CU503ER

Current

Acc_no
6280000265678969
1721000245432199

Savings

Acc_no
0092000186549364
8822000167543288
5282000178755432

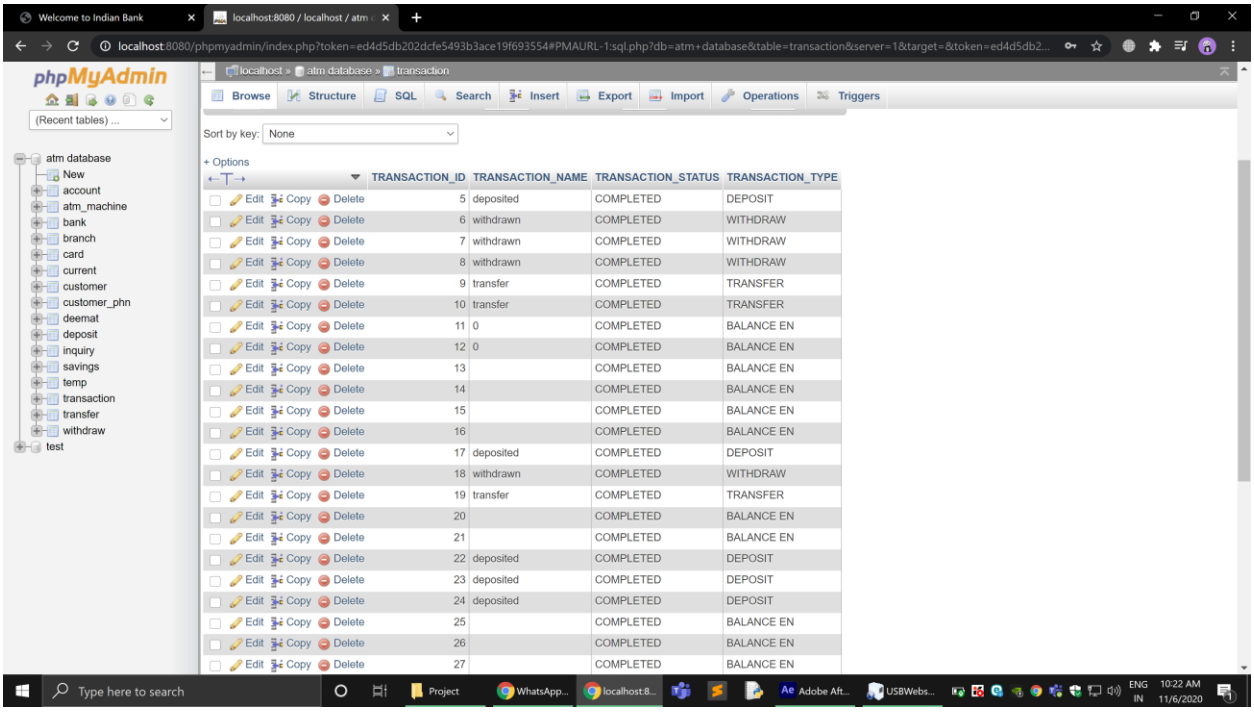
Demat

Acc_no
7529000385439864
3277000385467942

Customer Phone

P_C_Id	C_phone
CU001ER	9949996227
CU838ER	9229737388
CU933ER	8140727253
CU023ER	9182936825
CU766ER	9898772625
CU038ER	9079484037
CU503ER	7288928276

Database:


Welcome to Indian Bank
localhost:8080 / localhost / atm
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phpMyAdmin
(Recent tables) ...
atm database
New
account
atm_machine
bank
branch
card
current
customer
customer_phn
deemat
deposit
inquiry
savings
temp
transaction
transfer
withdraw
test
localhost » atm database » transaction
Browse
Structure
SQL
Search
Insert
Export
Import
Operations
Triggers
Sort by key: None
+ Options
TRANSACTION_ID TRANSACTION_NAME TRANSACTION_STATUS TRANSACTION_TYPE
5 deposited COMPLETED DEPOSIT
6 withdrawn COMPLETED WITHDRAW
7 withdrawn COMPLETED WITHDRAW
8 withdrawn COMPLETED WITHDRAW
9 transfer COMPLETED TRANSFER
10 transfer COMPLETED TRANSFER
11 0 COMPLETED BALANCE EN
12 0 COMPLETED BALANCE EN
13 COMPLETED BALANCE EN
14 COMPLETED BALANCE EN
15 COMPLETED BALANCE EN
16 COMPLETED BALANCE EN
17 deposited COMPLETED DEPOSIT
18 withdrawn COMPLETED WITHDRAW
19 transfer COMPLETED TRANSFER
20 COMPLETED BALANCE EN
21 COMPLETED BALANCE EN
22 deposited COMPLETED DEPOSIT
23 deposited COMPLETED DEPOSIT
24 deposited COMPLETED DEPOSIT
25 COMPLETED BALANCE EN
26 COMPLETED BALANCE EN
27 COMPLETED BALANCE EN
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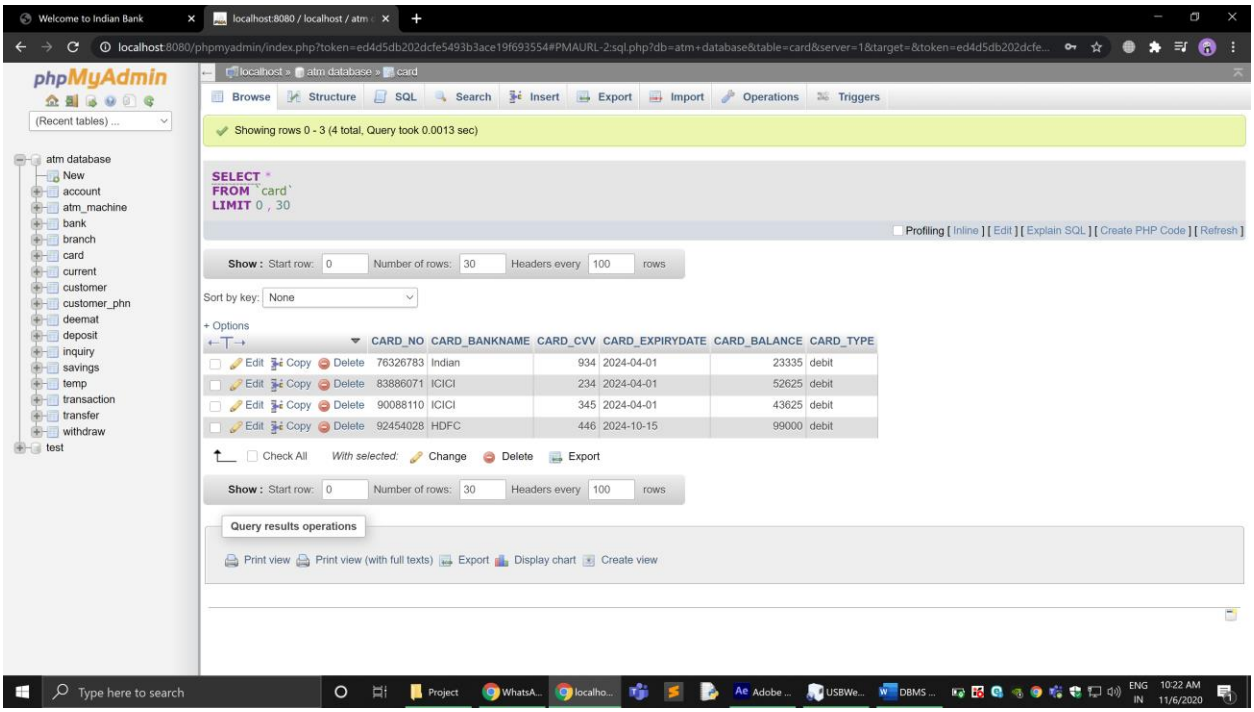
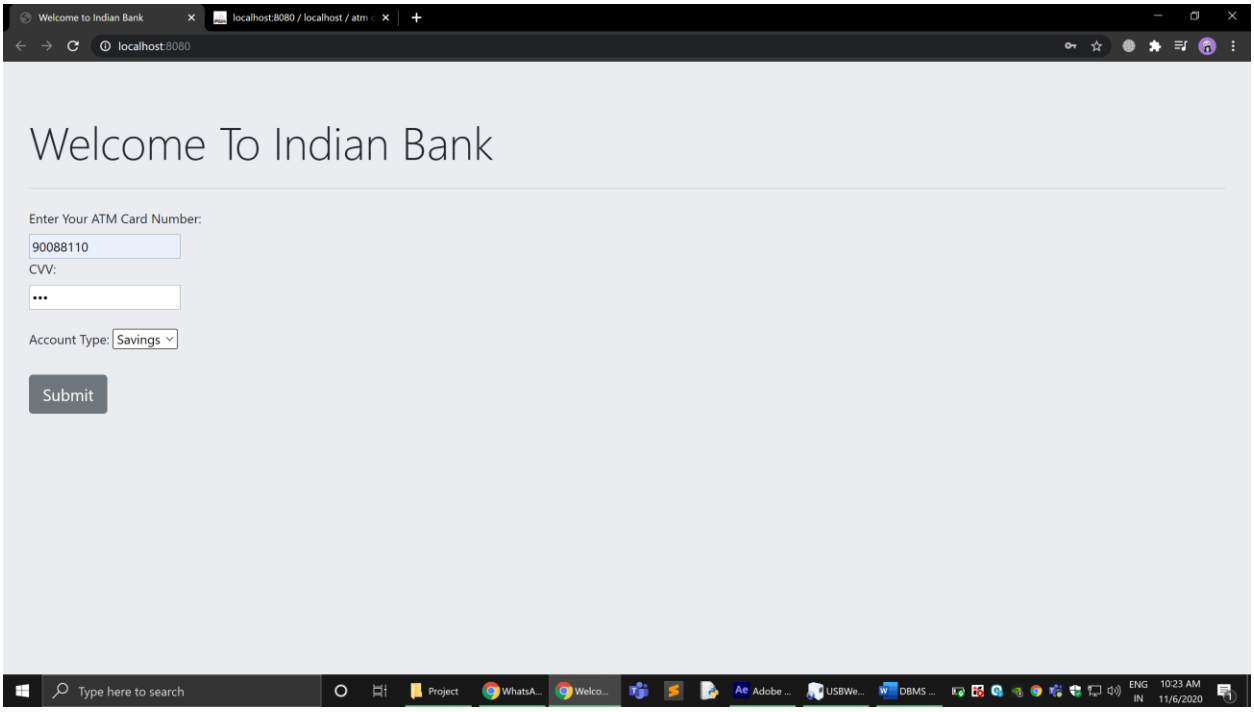
Type here to search
ENG IN 10:22 AM 11/6/2020


Welcome to Indian Bank
localhost:8080 / localhost / atm
localhost:8080/phpmyadmin/index.php?token=ed4d5db202dcfe5493b3ace19f693554#PMAURL-2:sql.php?db=atm+database&table=card&server=1&target=&token=ed4d5db202dcfe...
phpMyAdmin
(Recent tables) ...
atm database
New
account
atm_machine
bank
branch
card
current
customer
customer_phn
deemat
deposit
inquiry
savings
temp
transaction
transfer
withdraw
test
localhost » atm database » card
Browse
Structure
SQL
Search
Insert
Export
Import
Operations
Triggers
Showing rows 0 - 3 (4 total, Query took 0.0013 sec)
SELECT *
FROM `card`
LIMIT 0 , 30
Profiling [Inline] [Edit] [Explain SQL] [Create PHP Code] [Refresh]
Show : Start row: 0 Number of rows: 30 Headers every 100 rows
Sort by key: None
+ Options
CARD_NO CARD_BANKNAME CARD_CVV CARD_EXPIRYDATE CARD_BALANCE CARD_TYPE
76326783 Indian 934 2024-04-01 23335 debit
83886071 ICICI 234 2024-04-01 52625 debit
90088110 ICICI 345 2024-04-01 43625 debit
92454028 HDFC 446 2024-10-15 99000 debit
Edit Copy Delete
Check All With selected: Change Delete Export
Show : Start row: 0 Number of rows: 30 Headers every 100 rows
Query results operations
Print view Print view (with full texts) Export Display chart Create view
Type here to search
ENG IN 10:22 AM 11/6/2020

Welcome Page:



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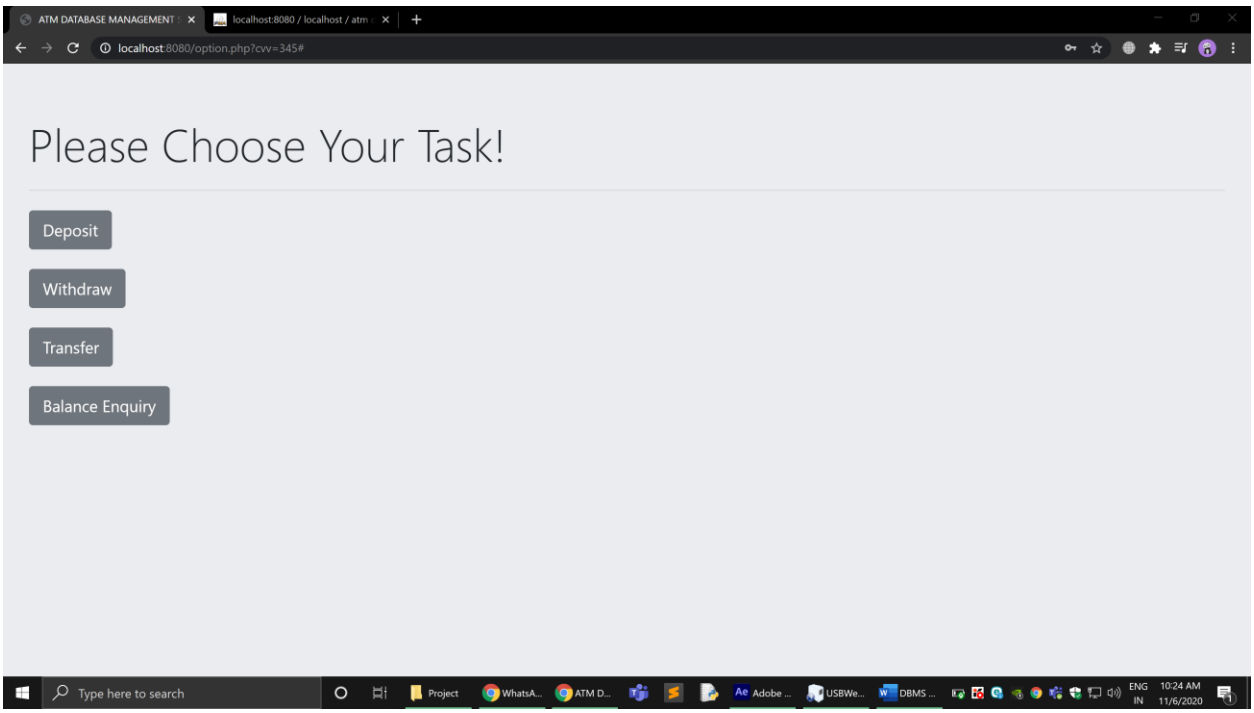

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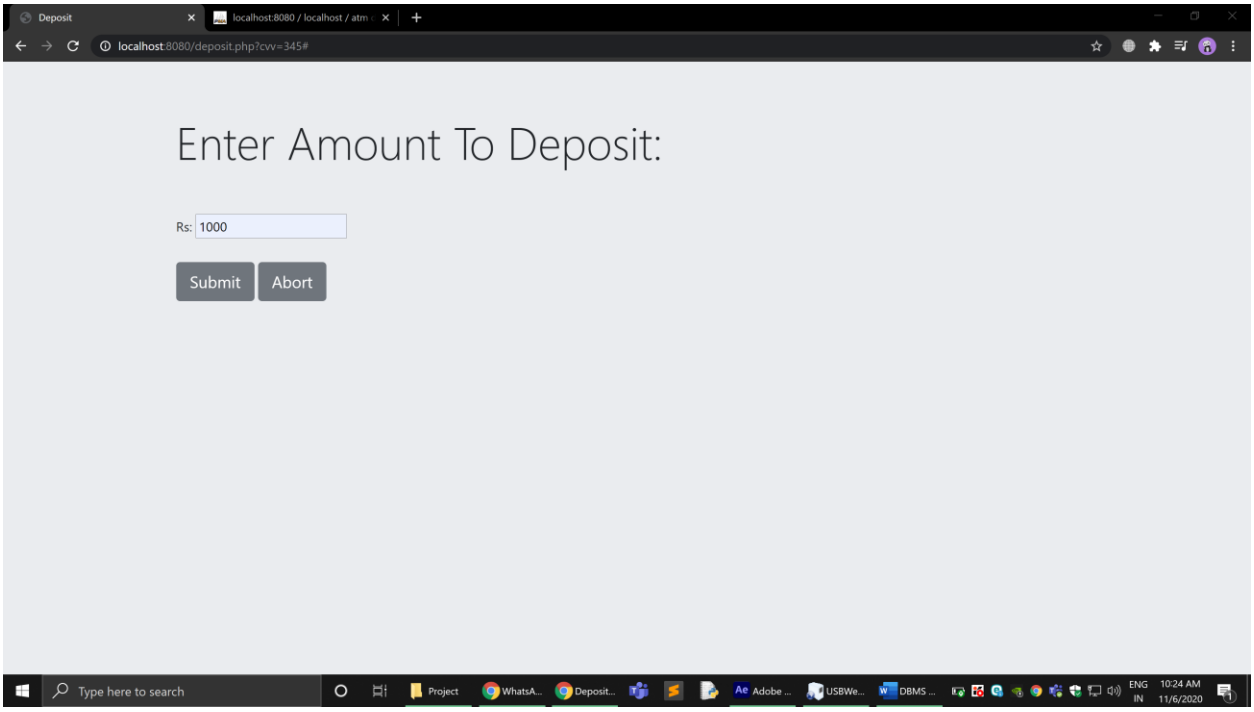

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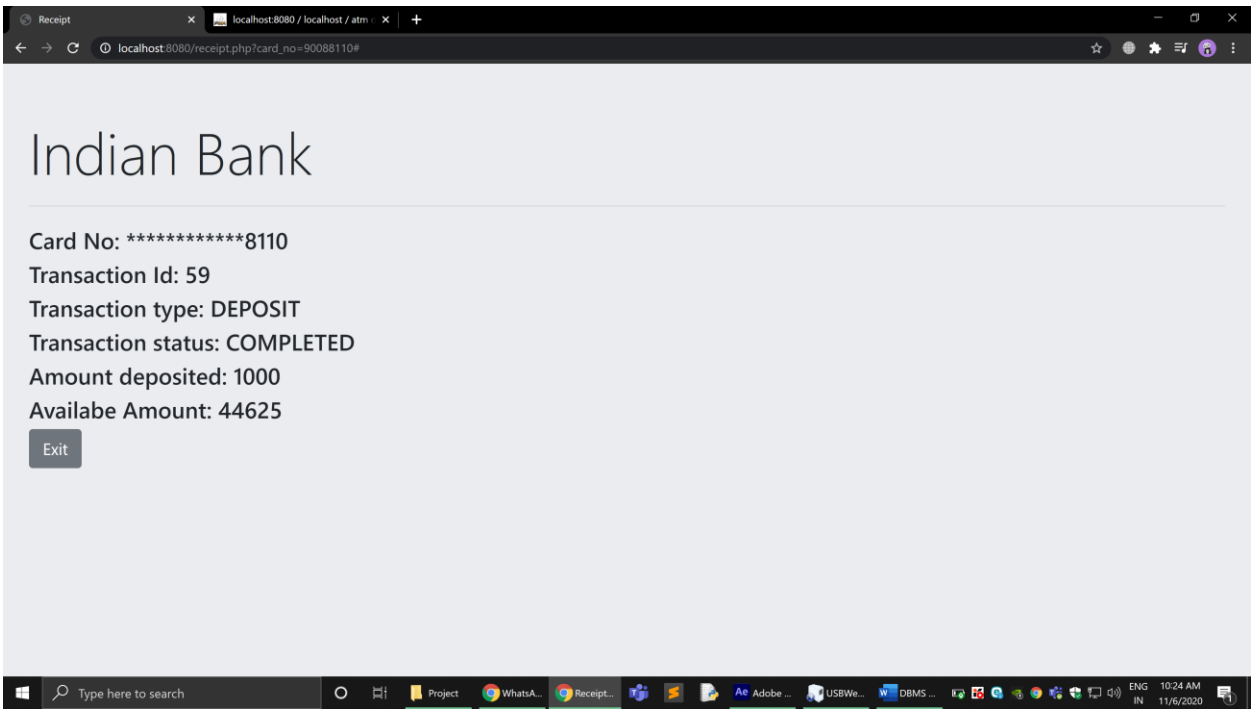

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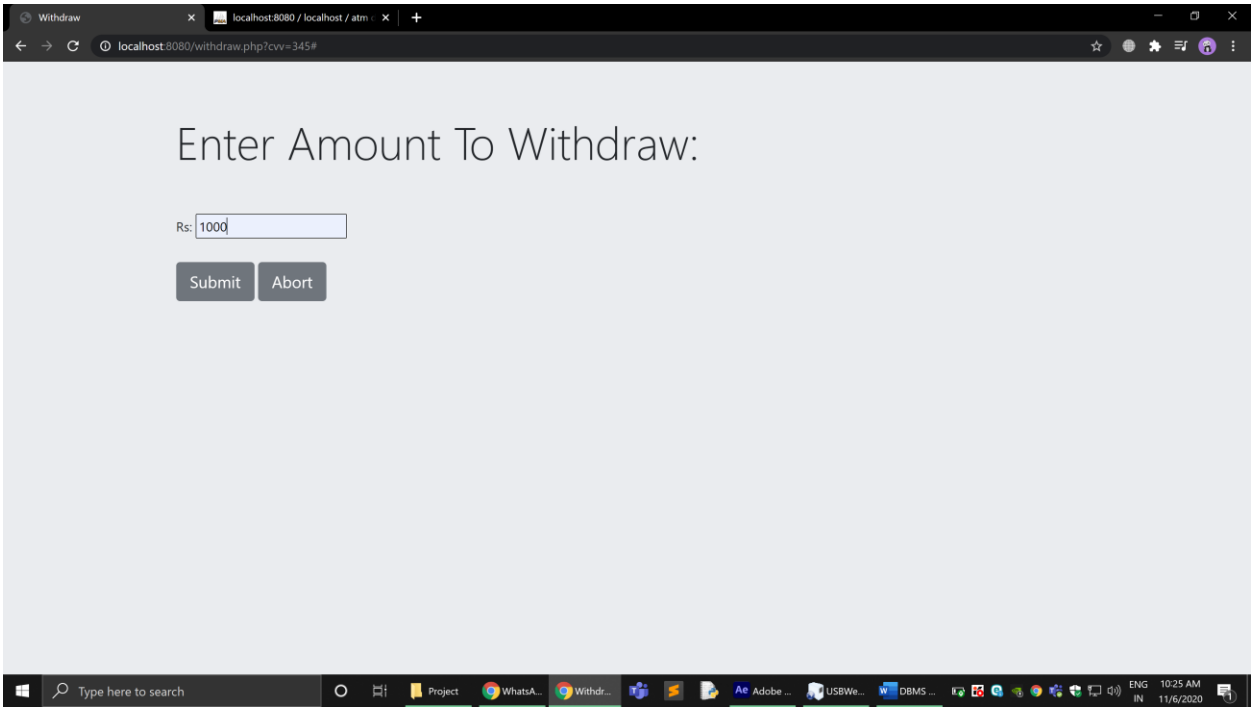

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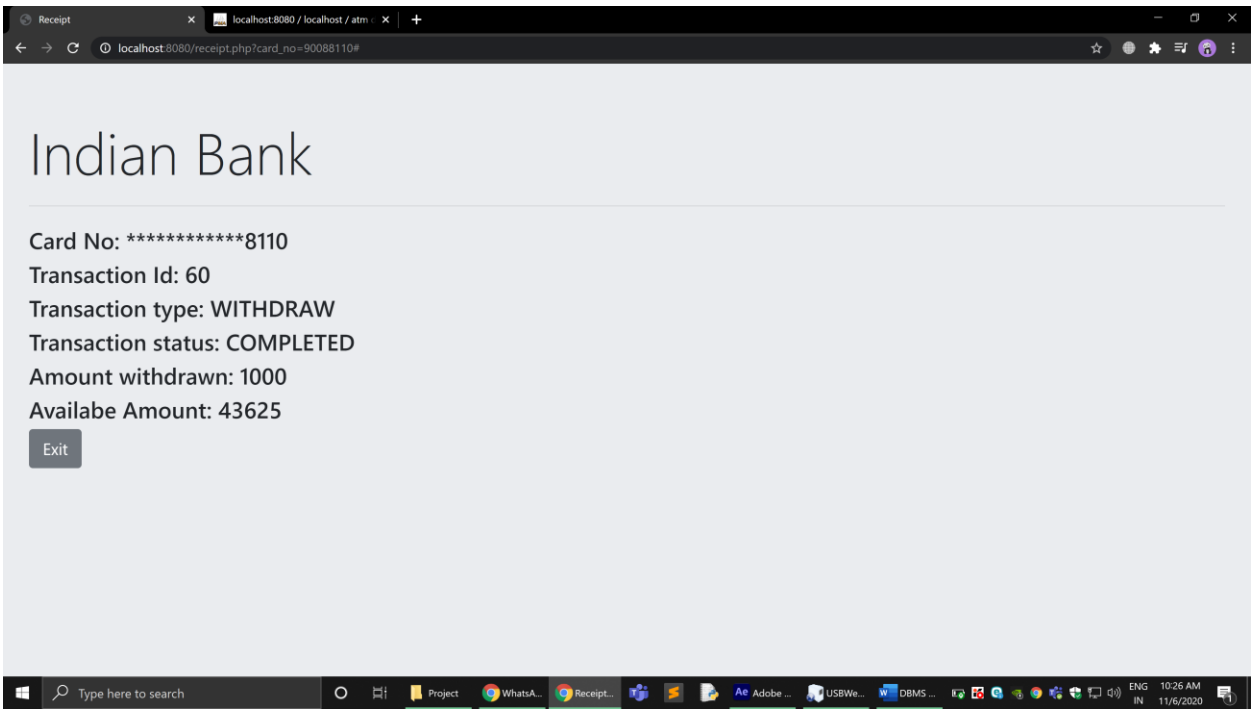

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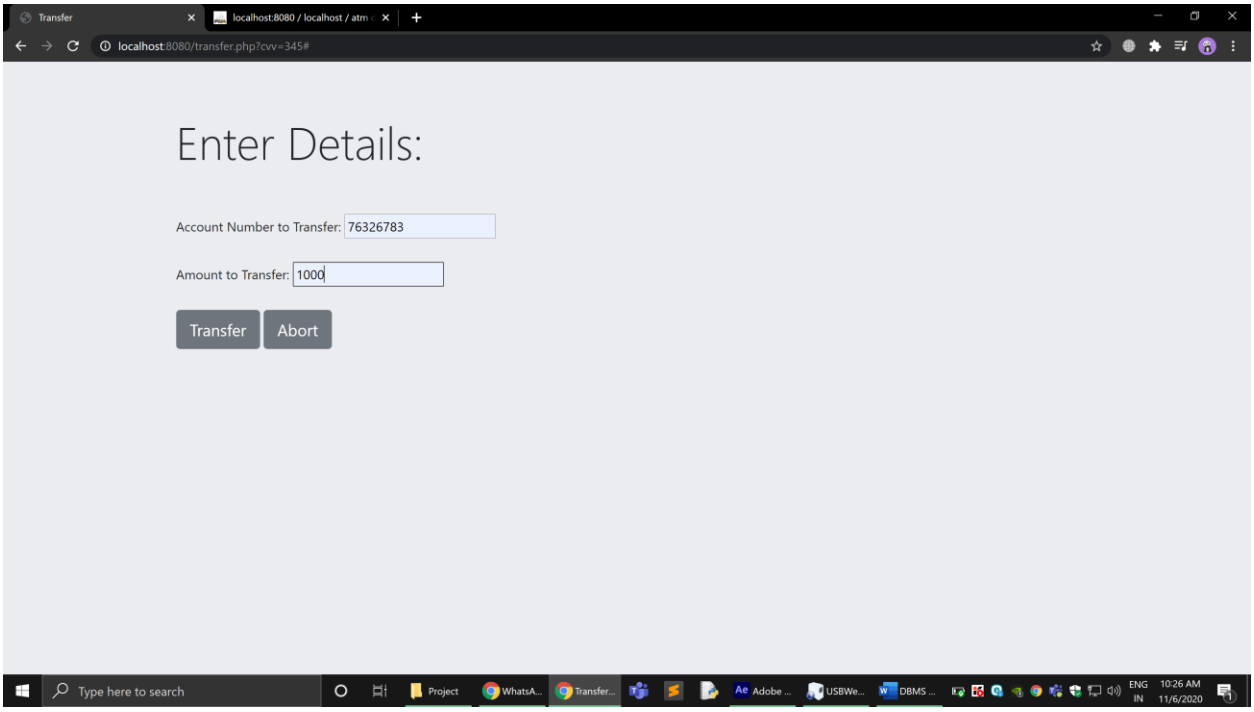

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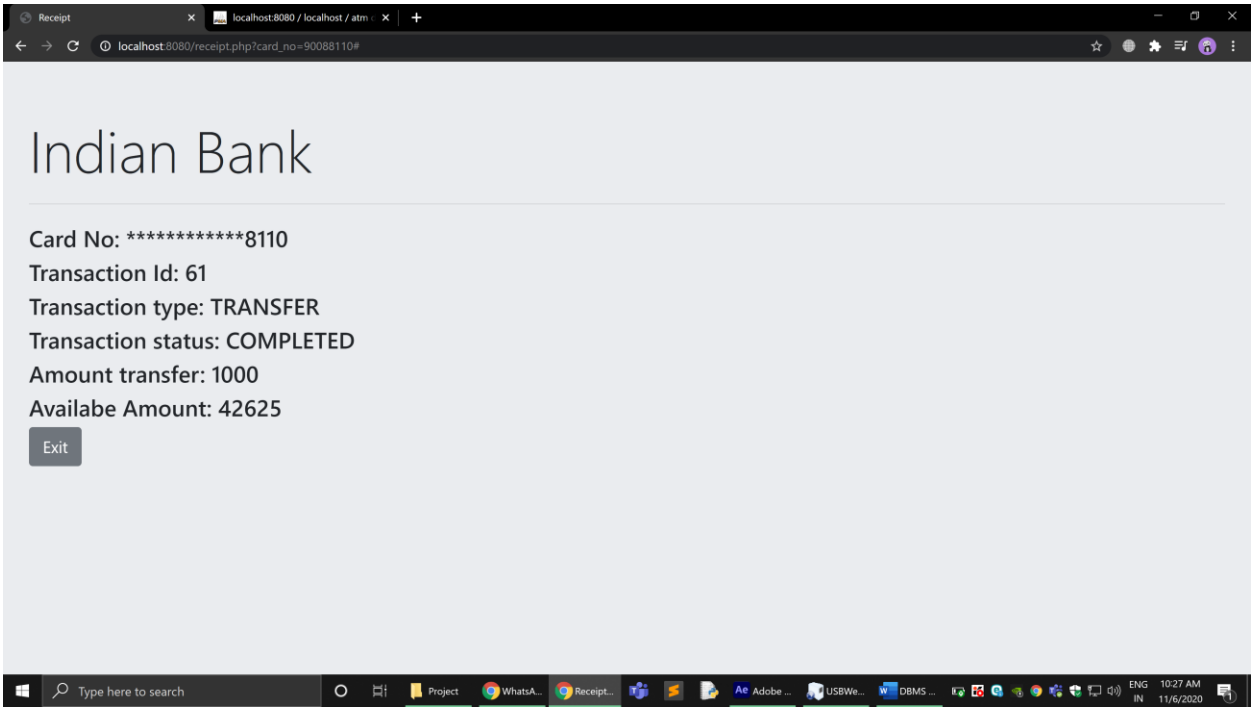
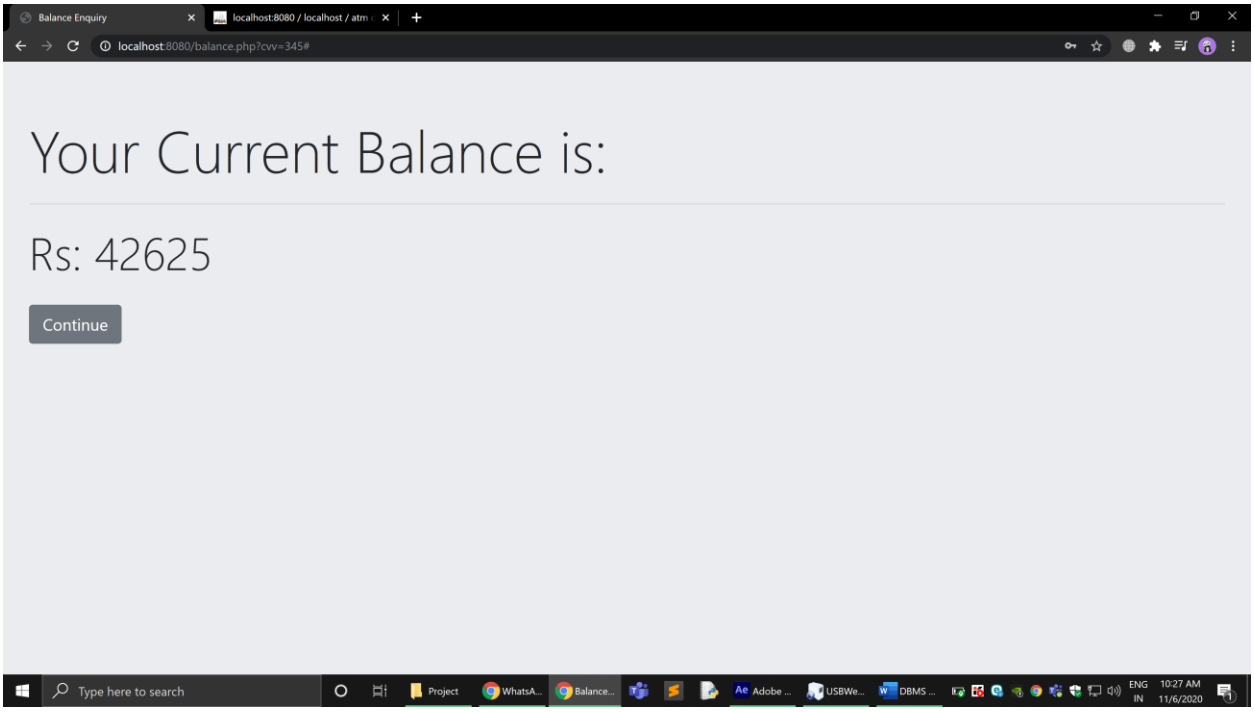
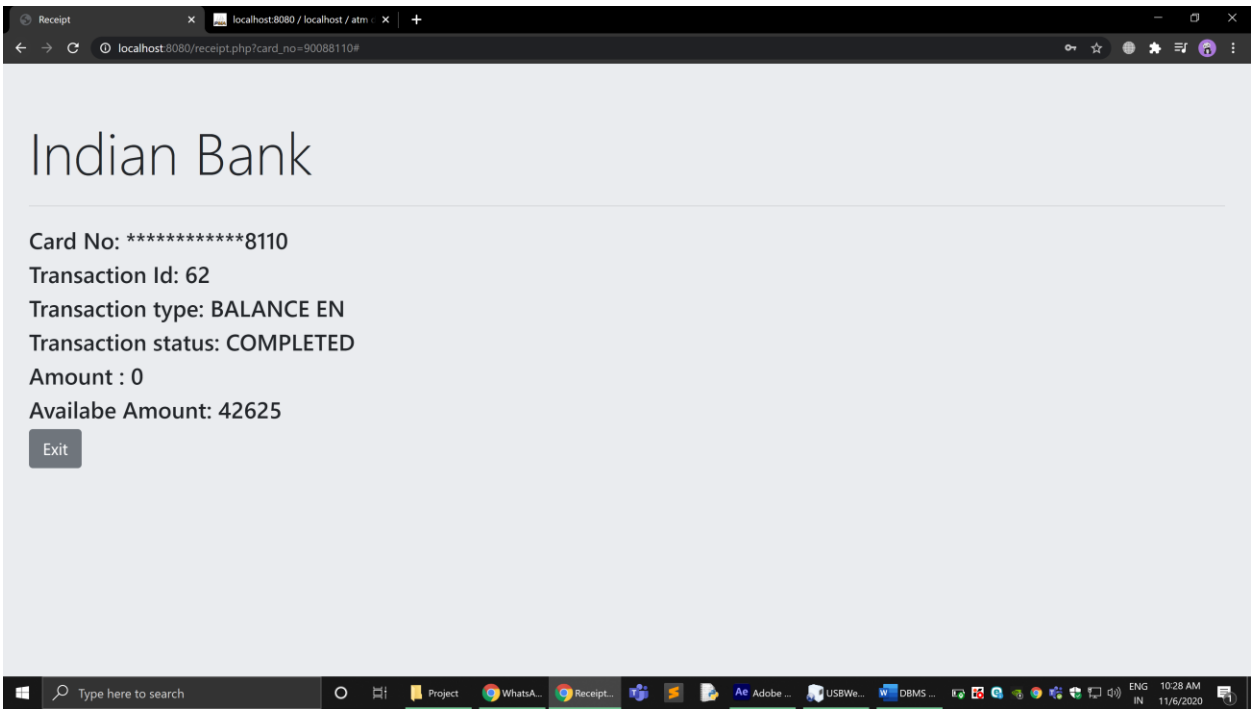


Balance Enquiry Page: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