

CHAPTER 1

INTRODUCTION

Post office application will help in automating functions of the administration department it help in reducing the time spent in record keeping and work can be carried out easily. The old records can be easily accessed in future.

The project is a web based application for post office management and their customers. It handles all types of transaction details of the post office and their project will reduce the work and most of the work done by computers. It maintains all the old record for later reference and it have provision for automatic update as per the status are the main objectives of this project , post office also help in saving money of customer and do perform the withdraw and e_bill operations through their saving account so that transfer of money is digitalized even we also provided the insurance account and claimed money is passed to the saving accounts

1.1 PRODUCT PERSPECTIVE AND OBJECTIVE

This designed product in a follow-on member of an existing database that helps to enhance the existing database and provide wider scope for the database to be used by all the post offices. The burden on the human effort is reduced due to the implementation of this database.

1.2 Product Function:

- Store and retrieve the data easily and efficiently.
- Complete details of the customer.
- Securing the data present in the database.
- Handling the data efficiently and accurately
- Retrieving the entire entry using a keyword.

1.3 AIM AND PERSPECTIVE

To maintains all the old record for later reference and it can be updated or deleted at any point of time by only through the admins.

CHAPTER 2

SYSTEM REQUIREMENTS SPECIFICATION

System requirements are the configuration that a system must have in order for a hardware or software application to run smoothly and efficiently. Failure to meet these requirements can result in installation problems or performance problems. The former may prevent a device or application from getting installed, whereas the latter may cause a product to malfunction or perform below expectation or even to hang or crash.

2.1 HARDWARE REQUIREMENTS

PROCESSOR	:	intel® Core(TM) i5
RAM	:	2GB minimum
ROM	:	300MB minimum

2.2 SOFTWARE REQUIREMENTS

Operating system	:	WINDOWS 10
Programming language	:	JAVA
Frontend	:	JAVA frames
Back end	:	mysql MariaDB

PRIMARY KEY

Such type of candidate key which is chosen as a primary key for table is known as primary key. Primary keys are used to identify table there is only one primary key per table.

FOREIGN KEY

Foreign key are those keys which is used to define relationship between two tables. When we want to implement relationship between two tables then we use concept of foreign key.

MariaDB

MariaDB is developed as open source software and as a relational database it provides an SQL interface for accessing data. It is based on the structure query language (SQL), which is used for adding, removing, and modifying information in the database. Standard SQL commands, such as ADD, DROP, INSERT, UPDATE used in MariaDB.

In addition to web usage, MariaDB can be used for stand-alone applications ranging from enterprise transactional and analytics systems down to mobile devices, embedded with other software. MariaDB works in the cloud or on premise.

Many features contribute to MariaDB's standing as a database system. Its speed is one of its most prominent features. MariaDB is remarkably scalable, and is able to handle tens of thousands of tables and billions of rows of data. It can also manage small amounts of data quickly and smoothly, making it convenient for small business or personal projects.

JAVA AND JFRAME

Java is a high-level programming language developed by Sun Microsystems. It was originally designed for developing programs for set-top boxes and handled devices, but later became a popular choice for creating web applications.

The Java syntax is similar to C++, but is strictly an object-oriented programming language. For example, most Java programs contain classes, which are used to define objects, and methods, which are assigned to individual classes. Java is also known for being more strict than C++, meaning variables and functions must be explicitly defined. This means Java source code may produce errors or "exceptions" more easily than other languages, but it also limits other types of errors that may be caused by undefined variables or unassigned types.

JFrame is a class in Java and has its own methods and constructors. Methods are functions that impact the JFrame, such as setting the size or visibility. Constructors are run when the instance is created: One constructor can create a blank JFrame, while another can create it with a default title.

CHAPTER 3

DESIGN AND IMPLEMENTATION

Database design is the process of producing a detailed data model of database. This data model contains all the needed logical and physical design choices and physical storage parameters needed to generate a design in a data definition language, which can then be used to create a database. A fully attributed data model contains detailed attributes for each entity. The database implementation or deployment is the process of installation of database software, configuration and customization, running, testing, integrating with applications, and training the users.

3.1 ER DIAGRAM

An entity -relationship model is a systematic way of describing and defining a business process. An ER model is typically implemented as a database. The main component of E-R model are: entity set and relationship set. The ER diagram is shown in **fig 3.1**

3.2 RELATION SCHEMA

It formulates all the constraints that are to be applied on the data. A database schema defines its entities and the relationship among them. It contains a descriptive detail of the database. It shows how data will be stored in a secondary storage. The RELATION SCHEMA is shown in **fig 3.2**

ADMIN

USERNAME	<u>PASSWORD</u>	<u>POST BOX NUMBER</u>
----------	-----------------	------------------------

MONEY ORDER

PBNO	SNAME	S_ADD	S_PIN	S_STATE	S_PHNO	S_CITY	RNAME	R_ADD	R_PIN	R_STATE	R_CITY
			R_PHNO	T_AMOUNT	AMOUNT	<u>M_ID</u>					

LETTER OR PARCEL

PBNO	CATEGORY	S_NAME	S_PIN	S_ADD	S_PHNO	S_STATE	S_CITY	AMOUNT	WEIGHT	R_NAME
		R_ADDRESS	R_PIN	R_PHNO	R_CITY	R_STATE	<u>ID</u>			

STATUS

<u>ID</u>	STATUS
-----------	--------

ADD ACCOUNT

PBNO	NAME	ADD	PINCODE	CITY	STATE	PHNO	DOB	RATION	PANCARD	ADHAR_NO	IFSC_CODE
						<u>ACCOUNT_NUMBER</u>	NOMINEE_ACC_NO				

ADD MONEY

ACCOUNT_NUMBER	NAME	AMOUNT
----------------	------	--------

WITHDRAW

ACCOUNT_NUMBER	NAME	DATE	AMOUNT
----------------	------	------	--------

CREATE INURANCE

ACCOUNT_NUMBER	<u>INSURANCE_ID</u>	NAME	GENDER	AMOUNT	PANCARD	AGE
----------------	---------------------	------	--------	--------	---------	-----

CLAIM

INSURANCE_ID	TIME	DATE	AMOUNT
--------------	------	------	--------

E BILL

ACCOUNT_NUMBER	B_ID	B_NAME	B_ADDRESS	L_USEDUNIT	C_UNIT	AMOUNT	C_DATE	<u>RECIPT NO</u>
----------------	------	--------	-----------	------------	--------	--------	--------	------------------

fig 3.2

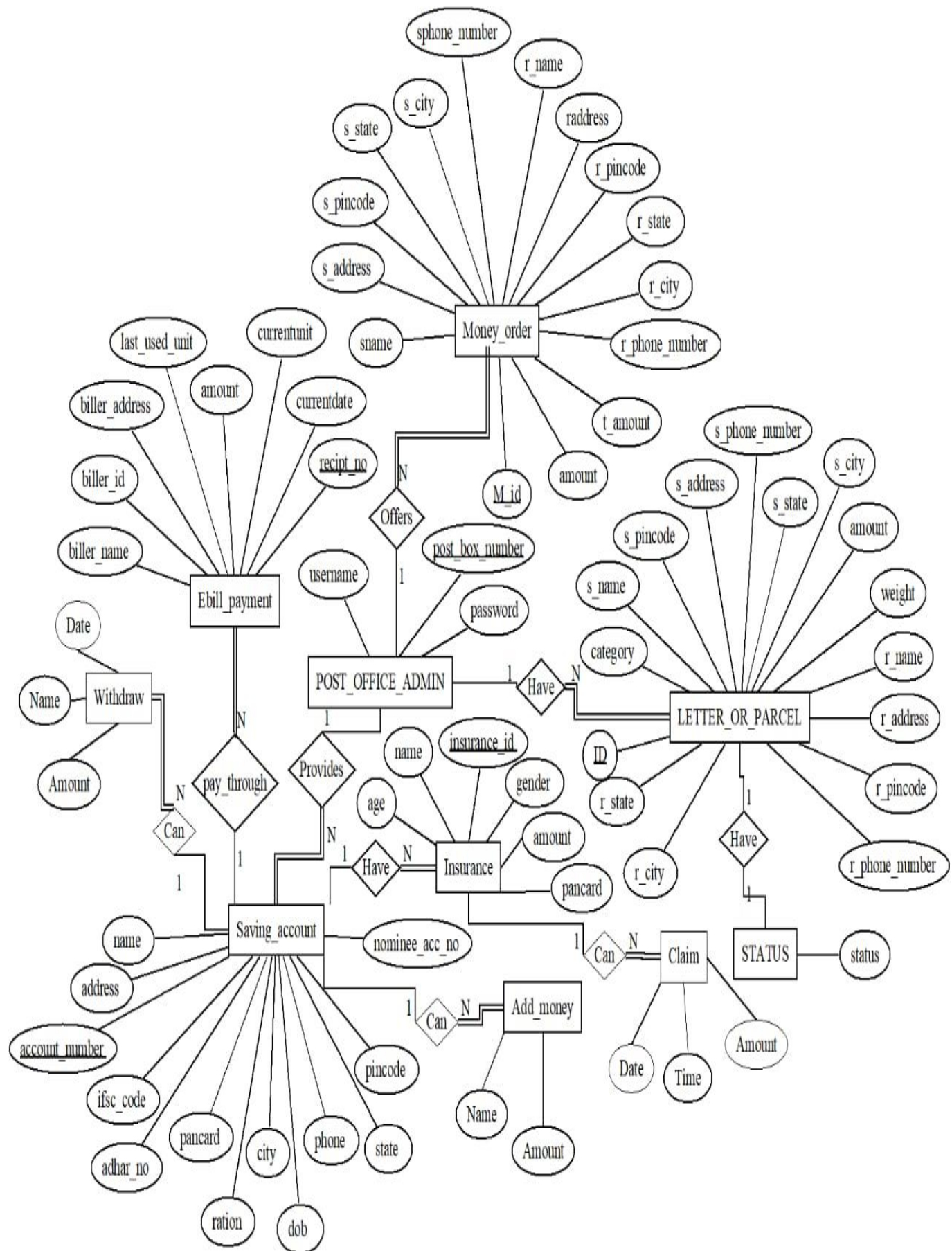


fig 3.1

3.3 Table 1: Relationships in the relational schema

Entity 1	Entity 2	Relationships	Description	Cardinality ratio
Post_office	Letter_or_Parcel	Have	1 postoffice maintain N letter or parcel	1:N
Post_office	Money_order	offers	1 postoffice offere N money_order	1:N
Post_office	Saving_account	provide	1 postoffice provide N Saving account	1:N
Letter_or_Parcel	Status	Have	1 letter or parcel have 1 status	1:1
Saving_account	Insurance	Have	1 saving_account have N Insurance	1:N
Saving_account	ebill_payment	Pay_through	1 saving_account pays N ebill_payment	1:N
Saving_account	Withdraw	Can	1 saving_account Can have N Withdraw	1:N
Saving_account	Add_money	Can	1 saving_account Can have N Add_money	1:N
Insurance	Claim	Can	1 Insurance Can have N Claim	1:N

3.4 IMPLEMENTATION

Here we used MariaDB (MySQL) at the front end to store the data and information and Java for designing front end

3.5 TABLE CREATED

```
create table addaccount(account_number varchar(20) primary key,name varchar(20),address
varchar(20),ifsc_code varchar(20),adhar_no varchar(20),pancard varchar(20),ration
varchar(20),DOB varchar(20),phone varchar(20),state varchar(20),city varchar(20),pincode
varchar(20),nominee_acc_no varchar(30));
```

```
create table addmoney(name varchar(20), account_number references addaccount
(account_number) on delete set null,amount varchar(20));
```

```
create table withdrawmoney(name varchar(20),account_number references on delete set null,
date varchar(20),amount varchar(20));
```

```
create table createinsurance(account_number varchar(20),insurance_id varchar(20) primary
key,name varchar(20),age varchar(20),gender varchar(20), amount varchar(20),pancard
varchar(20),foreign key(account_number) references addaccount(account_number) on delete
cascade);
```

```
create table insuranceclaim(insurance_id references createinsurance(insurance_id) on delete
set null,time varchar(10),date varchar(20),amount varchar(20));
```

```
create table e_bill(biller_name varchar(20),biller_id varchar(20) ,biller_address
varchar(40),last_used_unit varchar(20),currentunit varchar(20),amount
varchar(20),current_date varchar(20),recipt_no varchar(20),primary key(recipt_no));
```

```
create table moneyorder( mid varchar(20),sname varchar(20),address varchar(20),pincode
varchar(20),state varchar(20),city varchar(20),s_phone_number varchar(20),amount
int,t_amount int,rname varchar(20),raddress varchar(20),rpincode varchar(20),rstate
varchar(20),rcity varchar(20),rphone_number varchar(20));
```

```
create table lorp(category varchar(20),id varchar(20) primary key,s_name
varchar(20),s_address varchar(20),s_pincode varchar(20),s_state varchar(20),s_city
varchar(20),s_phone_number varchar(20),weight varchar(20),amount varchar(20),r_name
varchar(20),r_address varchar(20),r_pincode varchar(20),r_state varchar(20),r_city
varchar(20),r_phone_number varchar(20));
```

```
create table status(id varchar(20),status varchar(20),foreign key(id) references lorp(id) on
delete cascade);
```


3.6 CODE FOR TRIGGER

```
delimiter //

create trigger amount
before insert on lorp
for each row
begin
if(new.weight>0&&new.weight<=10) then
set new.amount='10';
else if(new.weight>11&&new.weight<=20) then
set new.amount='15';
else if(new.weight>=21&&new.weight<=30) then
set new.amount='25';
else if(new.weight>=31&&new.weight<=40) then
set new.amount='35';
else if(new.weight>=41&&new.weight<=50) then
set new.amount='45';
else if(new.weight>=51&&new.weight<=60) then
set new.amount='60';
else if(new.weight>=61&&new.weight<=70) then
set new.amount='75';
else set new.amount='100';
end if;
end if;
end if;
end if;
end if;
end if;
end if;
end; //

delimiter ;

.....
```

3.7 STORED PROCEDURE CODE

```
DELIMITER $$  
CREATE PROCEDURE getdeatils()  
BEGIN  
SELECT l.category, s.id, l.s_name, l.s_pincode, l.s_phone_number, l.r_name, l.r_address,  
l.r_pincode, s.status FROM status S, lorp L where S.id=L.id;  
END $$  
DELIMITER ;
```

3.6 JAVA CODE

```
//:Open a connection  
  
Class.forName("com.mysql.jdbc.Driver");  
  
Connection conn = DriverManager.getConnection("jdbc:mysql://localhost:7777/postoffice",  
"root", "root");  
  
System.out.println("Connected database successfully...");
```

CHAPTER 4

TESTING AND ANALYSIS

The purpose of testing is to discover errors. Testing is the process of trying to discover every conceivable fault or weakness in a work product. It provides a way to check the functionality of components, sub assemblies, assemblies and/or a finished product. It is the process of exercising software with the intent of ensuring that the Software system meets its requirements and user expectations and does not fail in an unacceptable manner. There are various types of test. Each test type addresses a specific testing requirement.

System testing ensures that the entire integrated software system meets requirements. It tests a configuration to ensure known and predictable results. An example of system testing is the configuration oriented system integration test. System testing is based on process descriptions and flows, emphasizing pre-driven process links and integration points.

4.1 UNIT TESTING

Unit testing is undertaken when a module has been created and successfully reviewed. In order to test a single module, we need to provide a complete environment besides the module we would require

- The procedures belonging to other modules that the module under test calls. Non-local data structures that module accesses
 - A procedure to call the functions of the module under test with appropriate parameters
- Unit testing was done on each and every module
- Testing admin login form-This form is used for log in of administrator of the system. In this we enter the username and password if both are correct administration page will open otherwise if any of data is wrong it will get redirected back to the login page and again ask for username and password.
 - Admin- Admin can enter the additional soil detail that he encounters with.

4.2 INTEGRATION TESTING

In this type of testing we test various integration of the project module by providing the input. The primary objective is to test the module interfaces in order to ensure that no errors are occurring when one module invokes the other module.

We have checked all the modules by giving various type of inputs, when input does not match with stored data, it will be rejected by showing the error.

CHAPTER 5

SCREENSHOTS

DATABASE

```

C:\MySQL Client (MariaDB 10.4 (x64)) - "C:\Program Files\MariaDB 10.4\bin\mysql.exe" "--defaults-file=C:\Program Files\MariaDB 10.4\data\my.ini" -uroot -p
Enter password: ****
Welcome to the MariaDB monitor.  Commands end with ; or \g.
Your MariaDB connection id is 485
Server version: 10.4.8-MariaDB mariadb.org binary distribution

Copyright (c) 2000, 2018, Oracle, MariaDB Corporation Ab and others.

Type 'help;' or '\h' for help. Type '\c' to clear the current input statement.

MariaDB [(none)]> use LG;
Database changed
MariaDB [LG]> show tables;
+-----+
| Tables_in_lg |
+-----+
| addaccount   |
| addaccounts  |
| addmoney     |
| createinsurance |
| createlifeinsurance |
| e_bill       |
| getdetails   |
| insuranceclaim |
| lorp         |
| moneyorder   |
| register     |
| status       |
| view         |
| withdrawmoney |
+-----+
14 rows in set (0.001 sec)

```

```

C:\MySQL Client (MariaDB 10.4 (x64)) - "C:\Program Files\MariaDB 10.4\bin\mysql.exe" "--defaults-file=C:\Program Files\MariaDB 10.4\data\my.ini" -uroot -p
MariaDB [LG]>
MariaDB [LG]> desc addaccounts;
+-----+-----+-----+-----+-----+-----+
| Field      | Type      | Null | Key | Default | Extra |
+-----+-----+-----+-----+-----+-----+
| account_number | varchar(20) | NO   | PRI | NULL    |       |
| name          | varchar(20) | YES  |     | NULL    |       |
| address       | varchar(20) | YES  |     | NULL    |       |
| ifsc_code     | varchar(20) | YES  |     | NULL    |       |
| adhar_no      | varchar(20) | YES  |     | NULL    |       |
| pancard       | varchar(20) | YES  |     | NULL    |       |
| ration        | varchar(20) | YES  |     | NULL    |       |
| dob           | varchar(20) | YES  |     | NULL    |       |
| phone         | varchar(20) | YES  |     | NULL    |       |
| state         | varchar(20) | YES  |     | NULL    |       |
| city          | varchar(20) | YES  |     | NULL    |       |
| pincode       | varchar(20) | YES  |     | NULL    |       |
| nominee_acc_no | varchar(20) | YES  |     | NULL    |       |
+-----+-----+-----+-----+-----+-----+
13 rows in set (0.028 sec)

```

MySQL Client (MariaDB 10.4 (x64)) - "C:\Program Files\MariaDB 10.4\bin\mysql.exe" "--defaults-file=C:\Program Files\MariaDB 10.4\data\my.ini" -uroot -p

MariaDB [LG]>

MariaDB [LG]> desc createlifeinsurance;

Field	Type	Null	Key	Default	Extra
account_number	varchar(20)	NO	MUL	NULL	
insurance_id	varchar(20)	NO	PRI	NULL	
name	varchar(20)	YES		NULL	
age	varchar(20)	YES		NULL	
gender	varchar(20)	YES		NULL	
amount	varchar(20)	YES		NULL	
pancard	varchar(20)	YES		NULL	

7 rows in set (0.028 sec)

MySQL Client (MariaDB 10.4 (x64)) - "C:\Program Files\MariaDB 10.4\bin\mysql.exe" "--defaults-file=C:\Program Files\MariaDB 10.4\data\my.ini" -uroot -p

MariaDB [LG]> desc e_bill;

Field	Type	Null	Key	Default	Extra
account_number	varchar(20)	YES		NULL	
biller_name	varchar(20)	YES		NULL	
biller_id	varchar(20)	YES		NULL	
biller_address	varchar(20)	YES		NULL	
last_used_unit	varchar(20)	YES		NULL	
currentunit	varchar(20)	YES		NULL	
amount	varchar(20)	YES		NULL	
currentdate	varchar(20)	YES		NULL	
receipt_no	varchar(20)	NO	PRI	NULL	

9 rows in set (0.034 sec)

MySQL Client (MariaDB 10.4 (x64)) - "C:\Program Files\MariaDB 10.4\bin\mysql.exe" "--defaults-file=C:\Program Files\MariaDB 10.4\data\my.ini" -uroot -p

MariaDB [LG]> desc lorp;

Field	Type	Null	Key	Default	Extra
category	varchar(20)	YES		NULL	
id	varchar(20)	NO	PRI	NULL	
s_name	varchar(20)	YES		NULL	
s_address	varchar(20)	YES		NULL	
s_pincode	varchar(20)	YES		NULL	
s_state	varchar(20)	YES		NULL	
s_city	varchar(20)	YES		NULL	
s_phone_number	varchar(20)	YES		NULL	
weight	varchar(20)	YES		NULL	
amount	varchar(20)	YES		NULL	
r_name	varchar(20)	YES		NULL	
r_address	varchar(20)	YES		NULL	
r_pincode	varchar(20)	YES		NULL	
r_state	varchar(20)	YES		NULL	
r_city	varchar(20)	YES		NULL	
r_phone_number	varchar(20)	YES		NULL	

16 rows in set (0.131 sec)

MySQL Client (MariaDB 10.4 (x64)) - "C:\Program Files\MariaDB 10.4\bin\mysql.exe" "--defaults-file=C:\Program Files\MariaDB 10.4\data\my.ini" -uroot -p

```
MariaDB [LG]>
MariaDB [LG]>
MariaDB [LG]> desc moneyorder;
```

Field	Type	Null	Key	Default	Extra
sname	varchar(20)	YES		NULL	
address	varchar(20)	YES		NULL	
pincode	varchar(20)	YES		NULL	
state	varchar(20)	YES		NULL	
city	varchar(20)	YES		NULL	
sphone_number	varchar(20)	YES		NULL	
amount	int(11)	YES		NULL	
t_amount	int(11)	YES		NULL	
rname	varchar(20)	YES		NULL	
raddress	varchar(20)	YES		NULL	
rpincod	varchar(20)	YES		NULL	
rstate	varchar(20)	YES		NULL	
rcity	varchar(20)	YES		NULL	
rphone_number	varchar(20)	YES		NULL	

14 rows in set (0.032 sec)

MySQL Client (MariaDB 10.4 (x64)) - "C:\Program Files\MariaDB 10.4\bin\mysql.exe" "--defaults-file=C:\Program Files\MariaDB 10.4\data\my.ini" -uroot -p

```
MariaDB [LG]>
MariaDB [LG]>
MariaDB [LG]>
MariaDB [LG]>
MariaDB [LG]> desc status;
```

Field	Type	Null	Key	Default	Extra
id	varchar(20)	YES	MUL	NULL	
status	varchar(20)	NO		NULL	

2 rows in set (0.030 sec)

MariaDB [LG]>

```
MariaDB [LG]> desc e_bill;
```

Field	Type	Null	Key	Default	Extra
account_number	varchar(20)	YES		NULL	
biller_name	varchar(20)	YES		NULL	
biller_id	varchar(20)	YES		NULL	
biller_address	varchar(20)	YES		NULL	
last_used_unit	varchar(20)	YES		NULL	
currentunit	varchar(20)	YES		NULL	
amount	varchar(20)	YES		NULL	
currentdate	varchar(20)	YES		NULL	
recipt_no	varchar(20)	NO	PRI	NULL	

9 rows in set (0.034 sec)

Fig 5.1:DATABASE

LOGIN PAGE FOR ADMIN

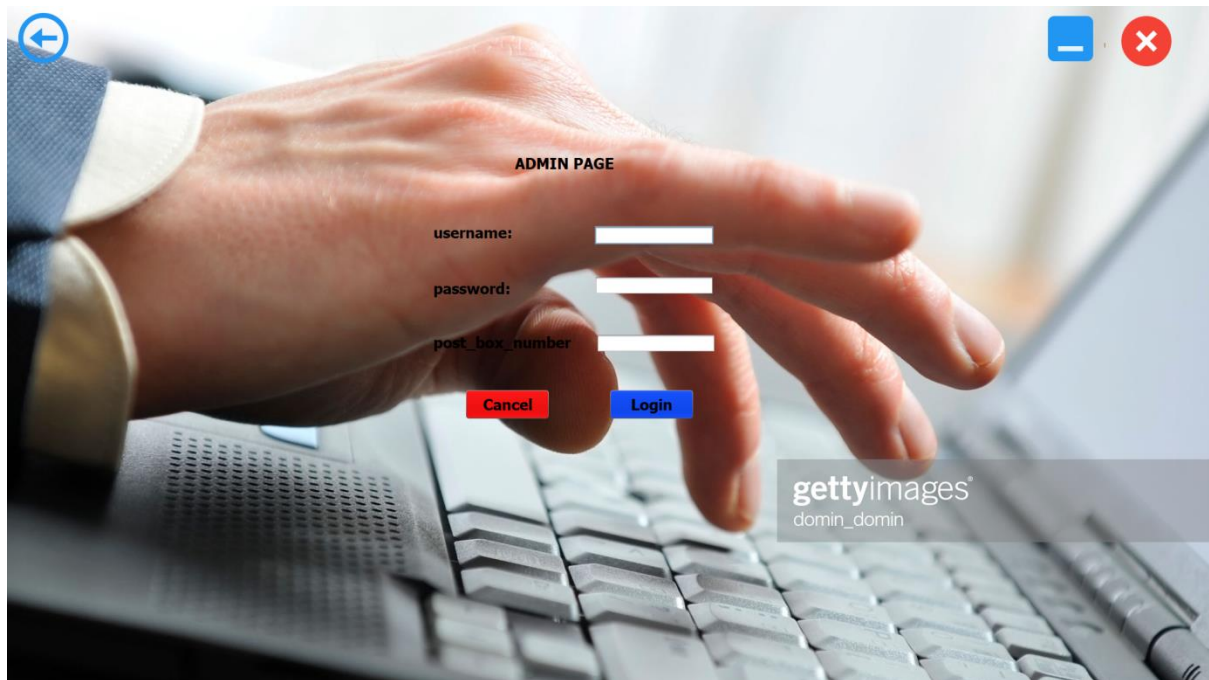


Fig 5.2: LOGIN PAGE

FRONTPAGE

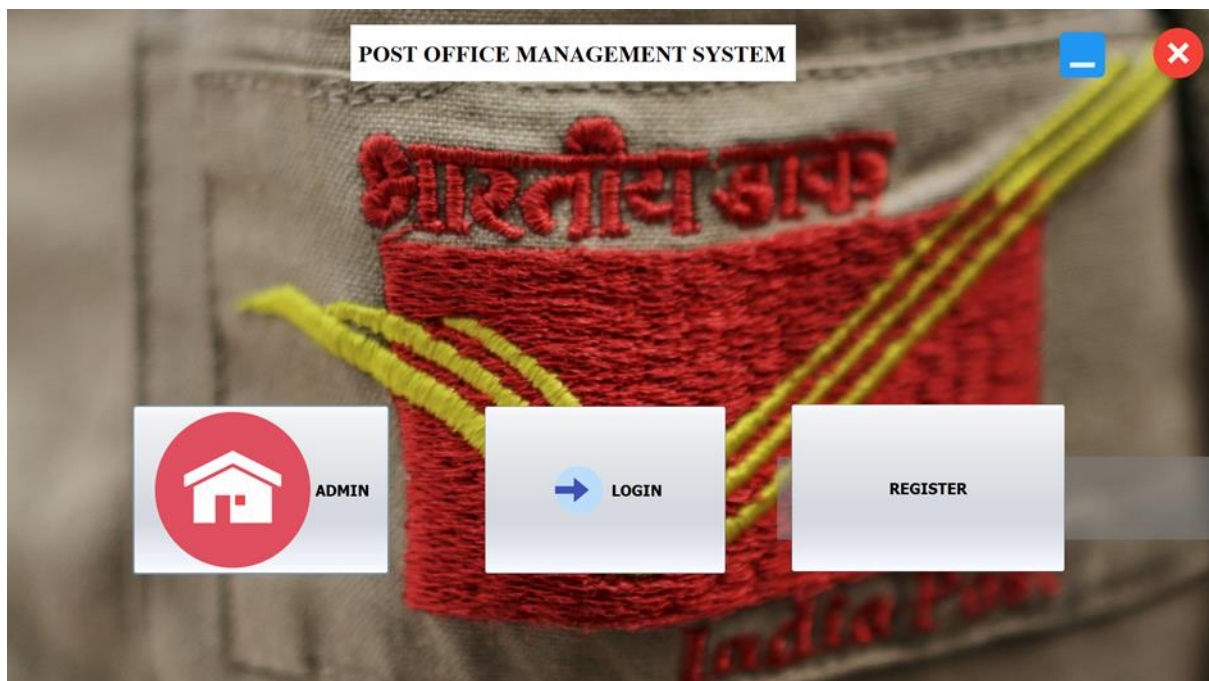


Fig 5.3: FRONT PAGE

MENU

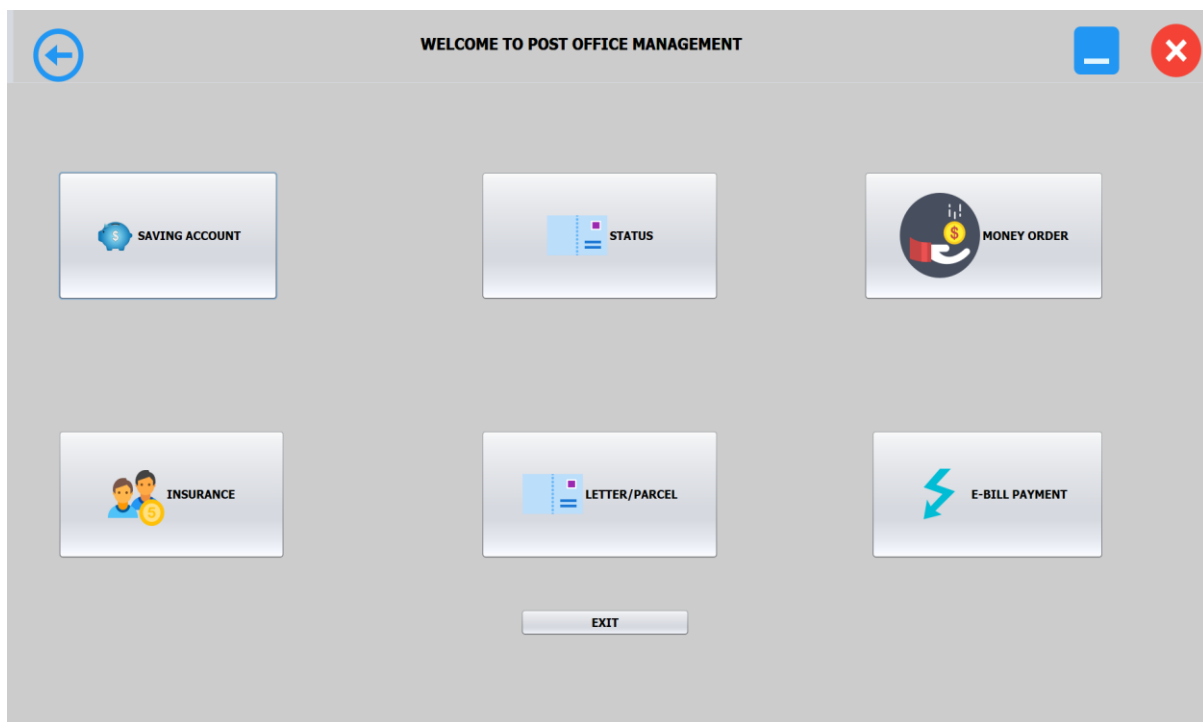


Fig 5.4 MENU PAGE

CREATE ACCOUNT

The screenshot shows a window titled "WELCOME TO NEW SAVING ACCOUNT". It contains a form with the following fields: "POST_BOX_NUMBER", "ACCOUNT NUMBER", "NAME", "DATE OF BIRTH", "ADDRESS" (a text area), "PHONE NUMBER", "IFSC", "STATE", "PAN CARD", "CITY", "AADHAR", "PINCODE", "RATION CARD", and "NOMINEES ACCOUNT NO". At the bottom, there are three buttons: "RESET", "CREATE", and "CANCEL". The window has standard OS controls in the top right corner.

Fig 5.5:CREATE ACCOUNT

MONEY ORDER

WELCOME TO MONEY ORDER

POST_BOX_NUMBER

SENDER INFORMATION

NAME

ADDRESS

PINCODE

STATE

CITY

PHONE NUMBER

AMOUNT

TOTAL AMOUNT

RECIVER INFORMATION

NAME

ADDRESS

PINCODE

STATE

CITY

PHONE NUMBER

RESET SUBMIT CANCEL

Fig 5.6: MONEY ORDER

LIFE INSURANCE

WELCOME TO LIFE INSURANCE

ACCOUNT NUMBER

INSURANCE ID

NAME

AGE

GENDER

AMOUNT

PAN CARD

CANCEL SUBMIT

Fig 5.7: LIFE INSURANCE

E_BILL

The screenshot shows a web application window titled "WELCOME TO E-BILL-PAYMENT". The window has a blue back arrow icon on the top left and standard window control buttons (minimize, maximize, close) on the top right. The main content area is light gray and contains a form with the following fields: ACCOUNT NUMBER, Biller Name, Biller ID, Biller Address, Last Used Units, Current units, Amount, Current Date, and Receipt number. Each field has a corresponding text input box. At the bottom of the form, there are three buttons: CANCEL, RESET, and SUBMIT.

Fig 5.8: E_BILL

LETTER OR PARCEL

The screenshot shows a web application window titled "WELCOME TO LETTER/PARCEL". The window has a blue back arrow icon on the top left and standard window control buttons (minimize, maximize, close) on the top right. The main content area is light gray and contains a form with the following fields: CATEGORY (a dropdown menu with "Letter or Parcel" selected), ID, POST_BOX_NUMBER, SENDER INFORMATION (NAME, ADDRESS, PINCODE, STATE, CITY, PHONE NUMBER, WEIGHT, AMOUNT), and RECIVER INFORMATION (NAME, ADDRESS, PINCODE, STATE, CITY, PHONE NUMBER). Each field has a corresponding text input box. At the bottom of the form, there are three buttons: RESET, SUBMIT, and CANCEL. A small red text label "It is automatically updated" is visible below the AMOUNT field.

Fig 5.9 LETTER OR PARCEL

VIEW OF TABLES

CHOOSE YOUR OPTION

REGEISTER INFORMATION

LETTER OR PARCEL INFORMATION

LETTER OR PARCEL STATUS

CLICK HERE TO VISIT MAIN PAGE OF POST OFFICE

Fig 5.10 VIEW

VIEW LETTER/PARCEL

Letter_or_Parcel_table															
category	id	s_name	s_address	s_pincode	s_state	s_city	s_phone_number	weight	amount	r_name	r_address	r_pincode	r_state	r_city	r_phone_number
letter	1000	sujith	thingalady	574210	ka	dk	9876543210	50	45	vinith	kuthyala	574218	ka	dk	8798543210
Letter or Parcel	6000	xxx	dd	5666666	ka	dk	9865742130	10	10	awk	wqk	985483	kl	pl	865482310

Fig 5.11 VIEW LETTER/ PARCEL

REGISTER TABLE

Register_table						
FirstName	LastName	username	password	Retype_Password	BirthDate	Address
sujith	rai	4kv17cs062	8197740871	8197740871	21/01/1999	puttur
vineeth	kuthyala	4kv17cs064	9448851464	9448851464	30/12/1998	chrikallu
kvg	kvg	kvg	cse	cse	12/03/1986	sullia

Fig 5.12 REGISTER TABLE

STATUS OF LETTER/PARCEL

Status of Letter & Parcel								
category	id	s_name	s_pincode	s_phone_number	r_name	r_address	r_pincode	status
letter	1000	sujith	574210	9876543210	vinith	kuthyala	574218	delivered
Letter or Parcel	6000	kkk	5856665	9865742130	awh	wjk	985483	not_delivered

Fig 5.13 DELIVERY STATUS(letter/parcel)

CHAPTER 6

CONCLUSION

The system was mainly designed to reduce the manual work of updating and also make it easier for the employees. All the data's of the accounts, money order, insurance details of letter or parcels are stored more efficiently and it is retrieved whenever it is required from database.

In this project we are mainly targeted on post office for the storing the data and we are given all the basic operations that that performs in the post office. Futher requirements and improvement can be easily done by designing codes. Improvement can be appended by changing the existing modules.

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