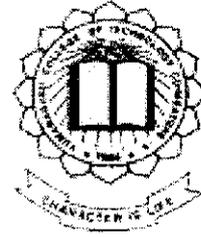# e – POST OFFICE

By

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of

KUMARAGURU COLLEGE OF TECHNOLOGY

COIMBATORE-6

A PROJECT REPORT

Submitted to the

FACULTY OF INFORMATION AND COMMUNICATION ENGINEERING

*In partial fulfillment of the requirements
for the award of the degree
of*

MASTER OF COMPUTER APPLICATIONS

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CHENNAI 600 025*

July 2009

BONAFIDE CERTIFICATE

Certified that this project report titled **e – Post Office** is the bonafide work of **Mariswari. V.** (Register Number: **71206621030**) who carried out the research under my supervision. Certified further, that to the best of my knowledge the work reported herein does not form part of any other project report or dissertation on the basis of which a degree or award was conferred on an earlier occasion on this or any other candidate.

Project Guide

Head of the Department

Submitted for the University Examination held on ___06 . 07 . 09___

Internal Examiner

External Examiner

DHT   Software Services

TO WHOMSOEVER IT MAY CONCERN

29/06/09

Certified that **Ms. Mariswari. V** student of final year M.C.A. (Master of Computer Applications) from **Kumaraguru College of Technology** has done the said project titled as "**e – Post Office**" in our organization from December 23, 2008 to May 29, 2009.

During this period of project her attendance was found to be regular and satisfactory.

(Sylvia. N)
Project Co-ordinator

ABSTRACT

The "e – Post Office" is the shopping portal of the postal service on the Internet and an additional distribution channel. It sells Stamps, Postcards, Packets, Greetings and magazines and has services such as tracking speed post and e – payment for media post, direct post and telephone bill. Under this website many products and services can be ordered. The product prices are identical with the prices of their normal branches.

Private customers and business customers can order the required products of the postal service online quickly and comfortably. Customers can register themselves and can be served individually. The system allows customers to track the speed post and also to maintain a speed post account. The status of the speed post will be sent through e-mail to the customers.

Customers can also use this system for their telephone bill payment, direct post and media post payment. They can use credit card to pay their bills online. The credit card number is stored and retrieved using RSA algorithm. If customers have any complaints, there is a section for sending their complaints through mail to the administrator. They can also download the forms available for post office related activities.

The administrator performs some back office operations. He will manage the customers, products, speed post and payment details. He will also receive the email order from their customers for sending speed posts. The goal of this system is to achieve a targeted level of customer service and ease of maintenance of the records. This project is fully developed using ASP.Net as the front end and SQL Server 2005 as the back end.

ACKNOWLEDGEMENT

TABLE OF CONTENT

LIST OF TABLES

LIST OF FIGURES

CHAPTER 1

INTRODUCTION

1.1 PROJECT OVERVIEW

The objective of the project "e - Post Office" is to sell the postal products such as stamps, post cards, magazines, greeting cards and novels. It also gives facility to make e – payment for telephone bill, media post and direct post. Customers can track the status of the speed posts sent by them. Email notification for the arrival of speed post can be made. Private and corporate customers can create their speed post account online. Credit card payment is accepted for e – payment. Administrator has the rights to update the database.

The project has the following modules:

- Administration
- Customer
- Purchasing
- Speed post
- e - Payment

a. Administration

This module is used to perform some back office operations such as customer management, product management, payment processing, etc. This module is especially designed for the system administrator who is part of the organization. The operations capable are:

- Add / Edit / Remove products, speed post, direct post, media post and payment details

- Contact customers directly via email
- Reports can be generated
- Update the speed post status
- Receive email order for sending speed post for customers who have speed post account in post office
- Receive complaints from the customers and take appropriate action.

b. Customer

This module provides the customers a user-friendly interface which is used to perform the services offered by the post office. It includes

- Online registration
- Search for a post office or pin code can be done easily
- Shopping cart for customers
- Online Telephone bill, media post and direct post payment
- Usage of Credit card for all payments
- View the speed post status of customers
- Downloading of forms. For example, Instant Money Order form, National Savings Scheme form, etc can be downloaded easily
- Information about the services offered in the post office
- Complaint section is offered where customers can mail their complaints to the administrator.

c. Purchasing

This module is used for purchasing the products sold in a post office. Products such as Stamps, post cards, book packets, greeting cards and magazines such as Aanandha Vikadan, The Times of India, etc can be purchased. Product price and the minimum quantity that should be ordered will be displayed. Also, the image of each product category will be displayed. On selecting the product, the user will have to enter

the needed details. After entering the quantity needed, the system displays the cost to be paid. Then the product will be queued to the shopping cart. Credit card payments are acceptable.

d. Speed post

This module is used to check whether the speed post has been delivered to its destination. By entering the speed post number the customer can find the status of the speed post. The customers can have email confirmation after the speed post has reached its destination. This process will be done automatically. Customers can also open their speed post account online. The balance details will be sent through email to the account holders. For corporate customers and to regular users, Speed Post provides 'Home collection' service.

e. E - Payment

This module is used to perform payment processing for direct post, media post and telephone bill payment. Customers have to enter their details first before they give the other payment details. Direct post can be used by customers who want to advertise new products, new companies, etc through brochures. In this case, the customers have to submit their hard copies directly to the post office. Media post can be used by customers who want to advertise their products on inland letters, post cards, aerogrammes, etc. In this case, the advertisement design can be sent through an email to the administrator. Telephone bill can also be paid through this module. The customers can get the payment receipt as a printed copy. Credit cards are acceptable for online payment.

Encryption and Credit Card Payment

RSA algorithm provides security to the credit card numbers used for e-payment. It is an algorithm for public-key cryptography and it involves three steps: key generation, encryption and decryption. Public key and private key are computed using

two random prime numbers. The credit card number is encrypted using the public key and it is decrypted with the use of private key.

The customer has to enter the credit card number and the bank name in the payment section. The system will check the type of credit card (such as Master card, Visa etc.) and then it will validate the credit card. Credit card validation is done using the Luhn Algorithm. Luhn Algorithm is a simple checksum formula used to validate a variety of identification numbers. If the credit card number is valid the system will ask the name of the credit card. The payment will be done when the customer clicks the 'Pay' button.

1.2 COMPANY PROFILE

DHT Software Services is a software Development, Training and Consultancy firm based in Chennai, India, providing efficient and high quality software solutions to a diverse client base. We work with our clients in all phases of a software development lifecycle - Gathering Requirements, Analysis & Estimation, Design & Prototyping, Development & Testing, and Deployment & Maintenance.

Set up in 2003, **DHT Software Services** has evolved into a training powerhouse with 36 staffs. Now the company is fully equipped with software professionals for development of high quality software and web designing. Our infrastructure and processes are concentrated at designing and implementing solutions for mid-sized companies. DHT software services is committed to deliver the standardized business applications towards a global approach on revolutionizing implementation methodology.

CHAPTER 2

SYSTEM ANALYSIS

System Analysis is the process of understanding a problem domain and the user requirements for the purpose of developing a computer application system to serve the users.

2.1 EXISTING SYSTEM

Customers can buy the products of postal service like stamps, post cards, book packets, magazines, greetings, etc. only in the post office. They can pay their telephone bill in post office by cash. But the customers need to go to the post offices to fulfill those services. The direct post payment and media post payments are also made in the post office. Moreover, the customers will not know whether the speed post has reached its destination or not. The procedures followed in the post offices currently are manual. Only Cash payment is acceptable. Registration details, product details, telephone bill details, speed post details and payment details are maintained manually. They are not fully computerized. It consumes more man power. It results in wastage of time and heavy manual labor because the records have to be maintained manually.

2.1.1 Limitations of existing system

The existing system has its own inefficiencies as it makes use of manpower. The customers have to come down to the sites to do any kind of transactions.

- Maintenance of centralized database is not possible
- No credit card payment facility for customers to make payments
- Online purchasing is not possible
- The manual procedures followed in the post offices currently is not efficient
- People do not know the details of products sold in the post offices

- The overall process is generally a time consuming one
- The customers cannot have any notifications on the status of speed posts
- They do not know about the services offered in the post office.

2.2 PROPOSED SYSTEM

The proposed system has been developed with .NET framework in order to increase efficiency, scalability and workability. It has been designed to provide a solution for the drawbacks of the existing system. The customers can purchase the products of postal service, can pay telephone bill online. The direct post and media post payment also will be done online. On-line tracking of speed post is possible. The customers and the administrator can communicate through email. Customers can use their credit card or debit card for payment. The customers who have registered in post office can use these services. Registration is done online for those who have not registered. The complaint section allows users to mail their complaints to the administrator. The proposed system aims to:

- Replace Manual Processing system with an automated one
- Speed up Transactions
- Reduce the workload involved in processing
- Update information system and provide easy access to corresponding information
- Full automated control through online.

2.2.1 Advantages of proposed system

The proposed system concentrates on cost estimation, instant access of information, effective human resource management and customer servicing.

- Resource sharing is made simple with the maintenance of centralized database
- Direct communication with the customers is made possible via the Internet
- Reducing the cost of management and man power involved in existing system

- Online reports generated help the executives take decisions in improving their management

- Purchasing the products like magazines and greeting cards online
- On-line tracking of speed post and speed post account maintenance for corporate and regular users

- Online payment facility for telephone bill, media post and direct post
- Customers can easily communicate with the administrator through mail
- Time consumption for purchasing and making payments is reduced
- It can be easily accessed by all users
- Credit card payment is allowed
- It provides immediate solution to the customers about the status of the speed posts sent by them.

CHAPTER 3

SYSTEM REQUIREMENT SPECIFICATION

The system requirement specification is a technical specification of requirements for the software product to convert the proposed system into reality. The e-Post Office has been developed under the following hardware and software configuration.

3.1 HARDWARE ENVIRONMENT

The hardware support required for deploying the application is as follows:

Processor	:	Pentium IV
Memory	:	256 MB RAM
Hard Disk	:	40 GB
Key Board	:	104 Keys Microsoft Keyboard
Mouse	:	Logitech Mouse

3.2 SOFTWARE ENVIRONMENT

The software support required for deployment is as follows:

Front-End	:	ASP.NET
Programming Interface	:	VB.NET
Operating System	:	Windows XP
Back-End	:	SQL Server 2005
Web Browser	:	Internet Explorer 6.0

3.3 SOFTWARE OVERVIEW

3.3.1 Microsoft.Net Framework

The Microsoft .Net Framework is a software framework that can be installed on computers running Microsoft Windows operating systems. It includes a large library of coded solutions to common programming problems and a virtual machine that manages the execution of programs written specifically for the framework. The class library is used by programmers, who combine it with their own code to produce applications.

Programs written for the .Net Framework execute in a software environment that manages the program's runtime requirements. Also part of the .Net Framework, this runtime environment is known as the Common Language Runtime (CLR). The CLR provides the appearance of an application virtual machine so that programmers need not consider the capabilities of the specific CPU that will execute the program. The class library and the CLR together constitute the .Net Framework.

3.3.2 ASP .Net

ASP.Net is a web application framework developed and marketed by Microsoft to allow programmers to build dynamic web sites, web applications and web services. While ASP.Net is largely syntax compatible with ASP, it also provides a new programming model and infrastructure for more secure, scalable and stable applications. You can feel free to augment your existing ASP application by incrementally adding ASP.Net functionality to them.

ASP.Net is a compiled, .Net-based environment; you can author applications in any .Net compatible language, including Visual Basic .Net, and Jscript .Net. Additionally, the entire .Net Framework is available to any ASP.Net application. Developers can use Web Forms or XML Web services when creating an ASP.Net

application, or combine these in any way they see fit. Each is supported by the same infrastructure that allows you to use authentication schemes, cache frequently used data, or customize your application's configuration, to name only a few possibilities. Web Forms allow you to build powerful forms-based Web pages. When building these pages, you can use ASP.Net server controls to create common UI elements, and program them for common tasks. These controls allow you to rapidly build a Web Form out of reusable built-in or custom components, simplifying the code of a page.

3.3.3 Internet Information Server (IIS)

A web server is a program connected to the World Wide Web (WWW) that furnishes resources from the web browser. Microsoft IIS is a web server integrated with Windows.NET server that makes it easy to publish information and bring business application to the web.

Because of its tight integration with Windows NT server, IIS guarantees the network administrator and application developer the same security, Networking and administrator functionality as Windows NT server. Above and beyond its use of familiar Windows NT server Tools and functionality, IIS also has built-in capabilities to help administer secure websites, and to develop server-intensive web application. IIS provides integrated security and access to a wide range of content, work seamlessly with COM components, and has a graphical interface - the Microsoft Management Console (MMC) – that you can use to create and manage your ASP application.

3.3.4 SQL Server 2005

A database is a collection of interrelated data stored with minimum redundancy to serve many users quickly and efficiently. The general objective of database design is to make the data access easy, inexpensive and flexible to the user. With new tools approaches and available, the applications can be built that more closely

match the needs and work habits of the business. SQL stores each data item in its own field. A table is easily visualized as tabular arrangement of data. The biggest advantages of a computerized database system over manual filing system are speed, accuracy and accessibility.

To communicate with databases, SQL supports the following commands:

- **Data Definition Language (DDL):**

Data Definition Language is a set of SQL statements that define or delete database objects such as tables or views. Some of the commands of Data Definition Language are create, alter, drop, grant and revoke commands.

- **Data Manipulation Language (DML):**

A set of SQL commands that is used to load data into database, retrieve data from database, update database or to remove any database. . Some of the commands of Data Manipulation Language are insert, select, update, delete.

- **Transaction Control Language:**

A set of SQL commands such as commit, save point, rollback that is used to do undo and redo operations are called as Transaction Control Language.

3.3.4.1 Advantages of Microsoft SQL Server 2000:

- SQL Server is very useful for accessing the database to create the records, delete, and modify and also for listing records
- DB server is the key for solving problems of information
- A server must relate & manage a large data in multi user entry
- DB server must also prevent unauthorized access
- The distributed database system allows application to access database from local and remote systems
- The encryption option makes the database more secured to transfer information to remote systems.

CHAPTER 4

SYSTEM DESIGN

System design plays an important role while developing a new system or enhancing the function of the existing system. System design helps us to find perfect steps towards the solution. Designing a model of the required system helps us to determine the problem area and the steps to be followed to overcome those problems.

4.1 ELEMENTS OF DESIGN

The following are the elements of the system design:

- Input Design

- Output Design

- Database Design

4.1.1 Input Design

Input design is the process of converting the user inputs into computer-based format. The goal is to make the data entry easier, and logical and error-free. The user-friendly screen format can reduce the burden of end-users who are not highly proficient in the system. An important step in input design stage is the design of source documents. Source document is the form on which the data are initially captured. The input forms used in this system are:

a. Registration: This module enters the details of the customer name, address, phone number, user name, the password required, and the email address for joining as a member of this website. After registration a confirmation mail will be sent to the customer containing their user name and password. The customer can update his details if needed when he logs in.

b. Speed post tracking: The customer enters the speed post number to track its status. The reply message will be displayed in the screen.

c. Speed post account opening form: The customer enters the Head Post Office name, Type of customer and amount. After the payment the account number will be displayed in the screen and also a mail will be sent to their email address.

d. Telephone bill payment: The customer enters the telephone bill number, customer number, telephone number, bill date and bill amount. After the entry of details the payment form will get opened.

e. Direct post payment: The customer enters the quantity of the documents and the places to be distributed. After entering the details the payment form will get opened.

f. Media post payment: The customer enters the letter type and quantity then it will find the price. After the entry of the details the payment form will get opened.

g. Complaint form: The customer enters their email id, subject and the message to be sent. After the entry of details the message will be sent as mail to the mail address of the administrator.

h. Payment: First the customer enters the credit card number and the bank name. If the number is valid it will ask the name of the credit card. After the entry of required details it will check the availability of the card, balance amount and the expiry date. If everything is correct the account will be updated.

4.1.2 Output Design

System output is the most important and direct source of information to the user. Efficient, intelligible output design should improve the systems relationship with the user and help in the decision-making. A major form of output is hardcopy from the printer. Printouts have been designed around the output requirements of the user.

The main outputs of the system are:

a. Product List: In this form the Administrator can view the available products and he can add, edit and delete the product details.

b. Finding rates of speed post: This form provides the facility to the customer to find out the rates of the speed post. Speed post weight and the place are given as input.

c. Customer details: This module provides the ability to the administrator to view and delete the customer details.

d. Speed post account details: The administrator can view and delete the speed post account details.

e. Product View: The customers can view the available products displayed as images. They can select the product by clicking the image of the product.

4.1.2   Database Design

Database design is necessary for controlling data integrity, redundancy and data security. It is very useful in maintaining data independence.

The tables used for the project are listed in Table 4.1 to 4.10.

TABLE NAME   : Admin

TABLE DESCRIPTION : Allows the admin to enter into the Admin home page

Field Name	Type	Description	Constraint
adminid	numeric	Identity, Unique admin id (Primary key)	Not null
username	nvarchar(50)	Login name	Not null
password	nvarchar(50)	Password	Not null
module	nvarchar(50)	Type of module	Not null

Table 4.1

TABLE NAME   : Telebill

TABLE DESCRIPTION   : Contains details about the telephone bill

Field Name	Type	Description	Constraint
telebillno	nvarchar(50)	Unique telephone bill number (Primary key)	Not null
userid	numeric	Unique user id (Foreign key)	Not null
consumerno	nvarchar(50)	Consumer number	Not null
teleno	nvarchar(50)	Telephone number	Not null
billdate	nvarchar(50)	Bill date	Not null
billamt	numeric	Amount to be paid	Not null
entrydate	nvarchar(50)	Entry date	Not null

Table 4.2

TABLE NAME : Customer

TABLE DESCRIPTION : Details about the customers

Field Name	Type	Description	Constraint
userid	numeric	Identity, Unique user id (Primary key)	Not null
username	nvarchar(50)	Login	Not null
password	nvarchar(50)	Password	Not null
firstname	nvarchar(50)	First name	Not null
secondname	nvarchar(50)	Second name	Null
dob	nvarchar(50)	Date of birth	Not null
address	nvarchar(50)	Address	Not null
district	nvarchar(50)	District	Not null
state	nvarchar(50)	State	Not null
pin	numeric	Pin code	Not null
phone	nvarchar(50)	Phone number	Null
email	nvarchar(50)	Email id	Not null
entrydate	nvarchar(50)	Join date	Not null
question	nvarchar(50)	User question	Not null
ans	nvarchar(50)	Answer	Not null

Table 4.3

TABLE NAME   : Spostrack

TABLE DESCRIPTION : Used to track the speed post

Field Name	Type	Description	Constraint
spostid	numeric	Identity, Unique speed post id (Primary key)	Not null
weight	numeric	Weight	Not null
charge	numeric	Charge	Not null
usermailid	nvarchar(50)	User mail id	Not null
fromhpo	nvarchar(50)	From Head Post Office	Not null
tohpo	nvarchar(50)	To Head Post Office	Not null
fromaddr	nvarchar(100)	From address	Not null
frompin	numeric	Pin code	Not null
toaddr	nvarchar(100)	To address	Not null
topin	numeric	Pin code	Not null
entrydate	nvarchar(50)	Entry date	Not null
rcvdate	nvarchar(50)	Received date	Null
delivdate	nvarchar(50)	Delivered date	Null
status	nvarchar(50)	Status of the speed post (i.e.) delivered or returned	Null

Table 4.4

TABLE NAME : Spostac

TABLE DESCRIPTION : Used to open speed post account

Field Name	Type	Description	Constraint
acno	numeric	Identity, Unique account no (Primary key)	Not null
userid	numeric	Unique user id (Foreign key)	Not null
company	nvarchar(50)	Company name	Null
address	nvarchar(100)	Address	Not null
pin	numeric	Pin code	Not null
hpo	nvarchar(50)	Head post office	Not null
phone	nvarchar(50)	Phone number	Null
mailid	nvarchar(50)	Mail id	Not null
ctype	nvarchar(50)	Customer type	Not null
amt	numeric	Amount paid	Not null
bal	numeric	Balance amount	Null
entrydate	nvarchar(50)	Entry date	Not null

Table 4.5

TABLE NAME : Category

TABLE DESCRIPTION : Product category details

Field Name	Type	Description	Constraint
catid	numeric	Identity, Unique category id (Primary key)	Not null
catname	nvarchar(50)	Category name	Not null
catdesc	nvarchar(50)	Category description	Not null

Table 4.6

TABLE NAME   : Directpost

TABLE DESCRIPTION   : Contains the details about the direct post

Field Name	Type	Description	Constraint
dpid	numeric	Identity, Unique direct post id (Primary key)	Not null
userid	numeric	Unique user id (Foreign key)	Not null
qtylocal	numeric	Quantity to be distributed in local area	Null
qtyother	numeric	Quantity to be distributed in inter cities	Null
total	numeric	Total amount	Not null
places	nvarchar(500)	Places	Not null
desc	nvarchar(250)	Description	Null
entrydate	nvarchar(50)	Entry date	Not null

Table 4.7

TABLE NAME   : Mediapost

TABLE DESCRIPTION   : Contains the details about the media post

Field Name	Type	Description	Constraint
mpid	numeric	Identity, Unique media post id (Primary key)	Not null
userid	numeric	Unique user id (Foreign key)	Not null
ltype	nvarchar(50)	Letter type	Not null
qty	numeric	Quantity	Not null
price	numeric	Amount to be paid	Not null
desc	nvarchar(250)	Description	Null
entrydate	nvarchar(50)	Entry date	Not null

Table 4.8

TABLE NAME   : Products

TABLE DESCRIPTION   : Details of the products

Field Name	Type	Description	Constraint
pid	numeric	Identity, Unique product id (Primary key)	Not null
catid	numeric	Category id (Foreign key)	Not null
pname	nvarchar(50)	Product name	Not null
pdesc	nvarchar(50)	Product description	Null
price	numeric	Price of the product	Not null
qty	numeric	Quantity available	Null
minqty	numeric	Minimum quantity to be purchased	Not null
img	nvarchar	path of the image file	Not null
imgurl	nvarchar	Navigate url	Not null

Table 4.9

TABLE NAME   : Shopcart

TABLE DESCRIPTION   : Contains the products that has been selected

Field Name	Type	Description	Constraint
cartid	numeric	Identity, Unique cart id (Primary key)	Not null
pid	numeric	Identity, Unique subcategory id (Foreign key)	Not null
qty	numeric	Quantity	Not null
unitprice	numeric	Unit price	Not null
price	numeric	Price	Not null
entrydate	nvarchar(50)	Entry date	Not null

Table 4.10

4.2   DIAGRAMS

4.2.1   Use Case Diagram

Use case diagram is a type of behavioral diagram and its purpose is to present a graphical overview of the functionality provided by a system in terms of actors, their goals (represented as use cases), and any dependencies between those use cases. The use case diagrams related to this project are shown in Figure 4.1 and 4.2.
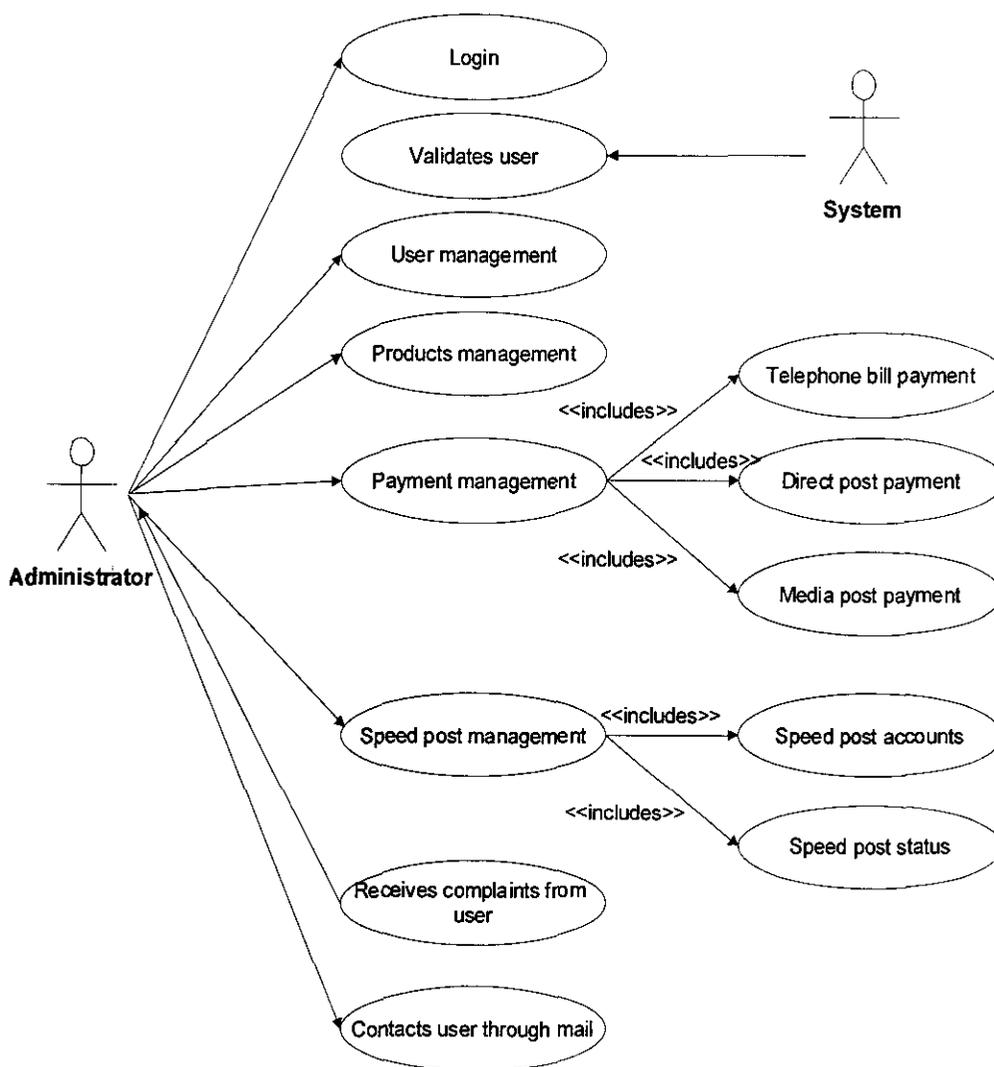
Figure 4.1: Use case diagram - Admin view of the system
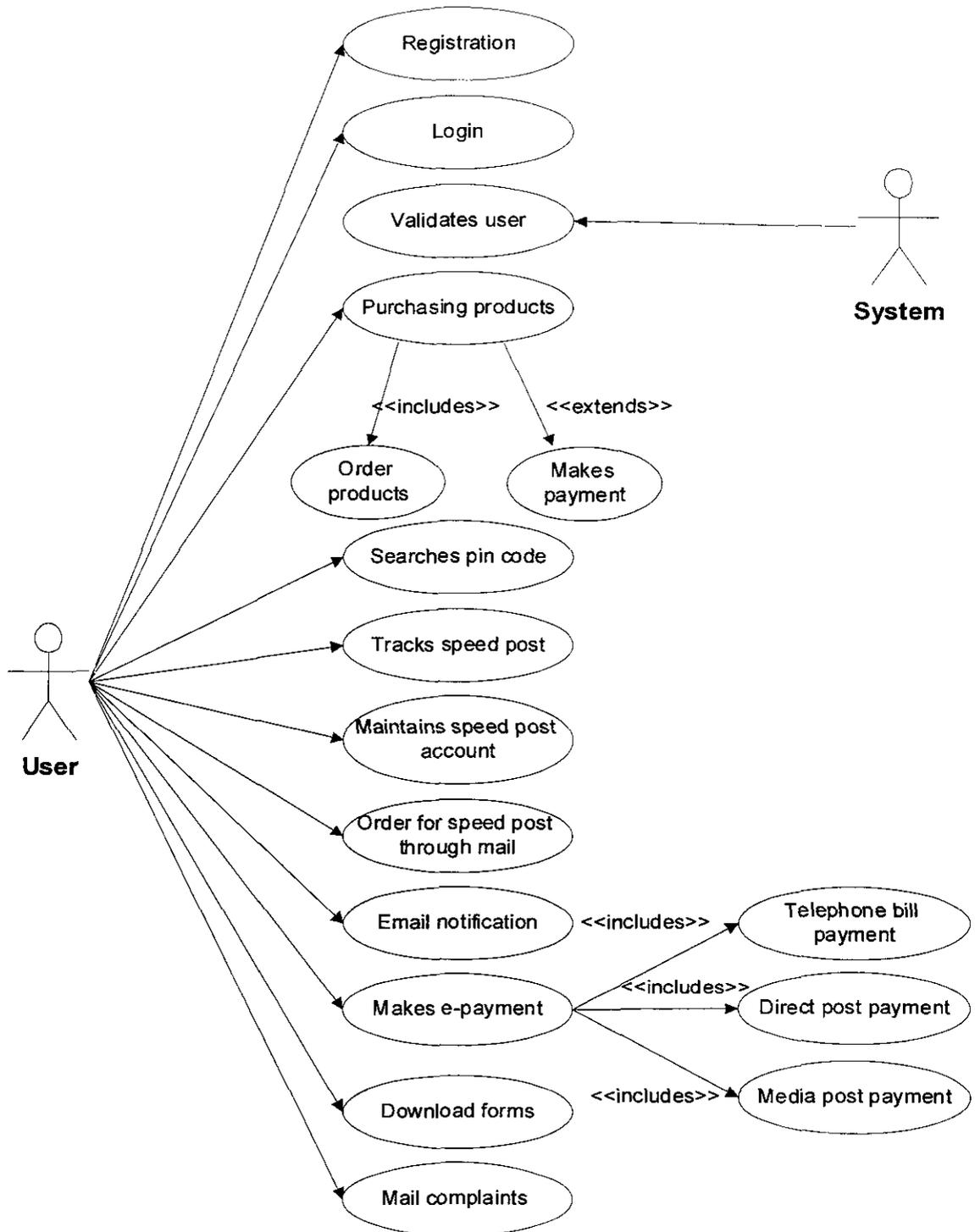
Figure 4.2: Use case diagram - User view of the system

4.2.2 Entity Relationship Diagram

An Entity-Relationship Model is an abstract and conceptual representation of data. Entity-relationship modeling is a database modeling method, used to produce a type of conceptual schema or semantic data model of a system, often a relational database, and its requirements in a top-down fashion. Diagrams created using this process are called entity-relationship diagrams, or ER diagrams. The E-R diagram of this project is shown in Figure 4.3.
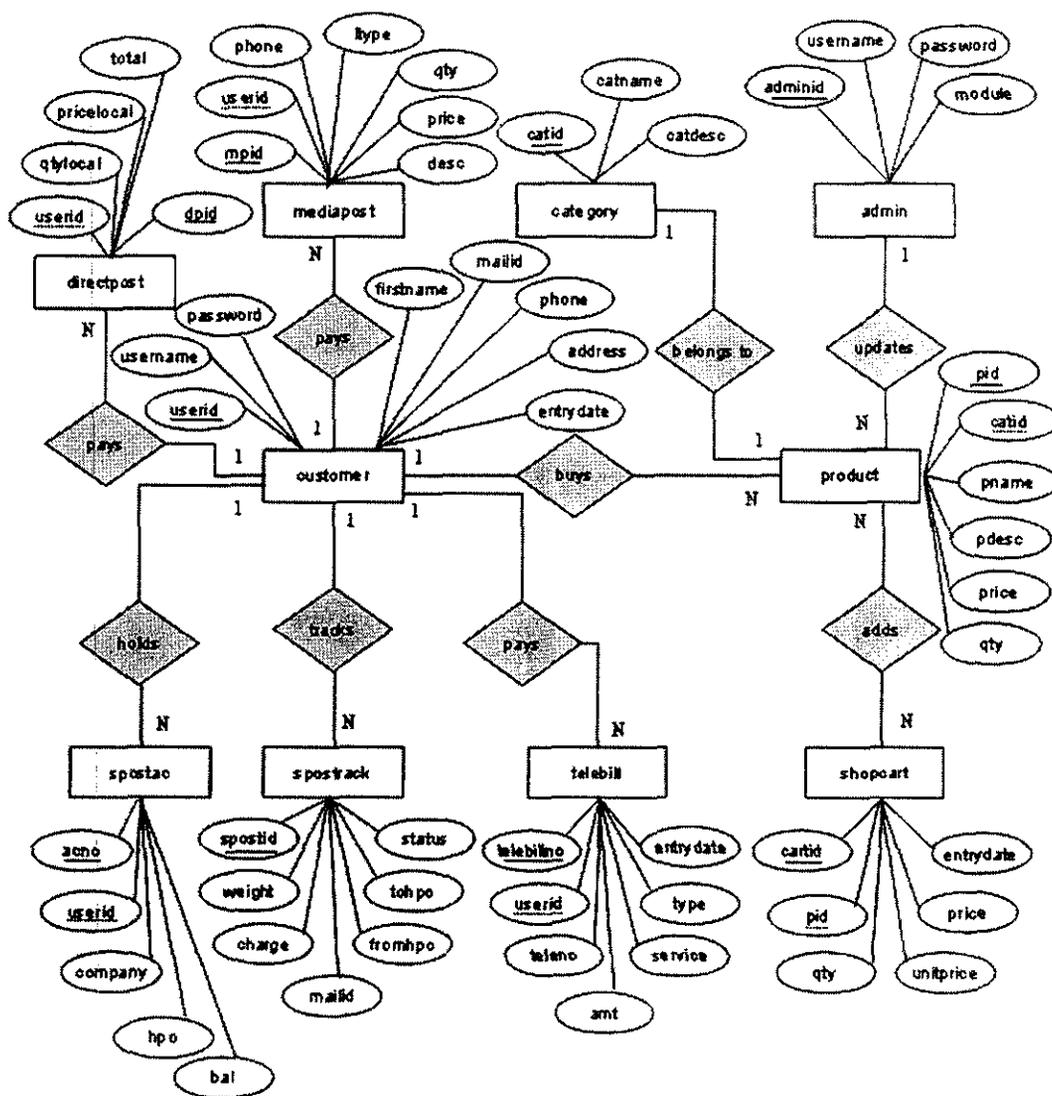
Fig 4.3: Entity Relationship diagram of the whole system

CHAPTER 5

SYSTEM TESTING AND IMPLEMENTATION

Software Testing is an empirical investigation conducted to provide stakeholders with information about the quality of the product or service under test, with respect to the context in which it is intended to operate. The following software testing methodologies were conducted for the project, e – Post Office.

5.1 TYPE OF TESTING

5.1.1 Unit Testing

Unit testing is a software verification and validation method where the programmer gains confidence that individual units of source code are fit for use. A unit is the smallest testable part of an application. In object-oriented programming, the smallest unit is a class. Unit testing was conducted to the system by the developer from the commencing date of the development. Each unit was tested several times to rectify errors at the earliest time. Most of the errors were rectified during this test.

In e – Post Office project, finding speed post account rates unit was tested. The function of this unit is to display the rates of speed post according to its location and weight. The functionality of the unit was tested and the result was successful.

5.1.2 Integration Testing

Integration testing of software testing is in which individual software modules are combined and tested as a group. Integration testing was done after the unit testing and before the system testing. The inputs to this test were modules that have been unit tested and the output was the integrated system ready for system testing.

In the e – Post Office project, the speed post tracking module was integrated to the administrator module. Integration testing was performed during this integration and the result was a failure for the first few tests. The errors were detected and the integration was made successful.

5.1.3 Verification and Validation Testing

Verification and Validation (V&V) is the process of checking that a software system meets specifications and that it fulfills its intended purpose. Verification is the process of determining that the implementations and their associated data accurately represent the developer's conceptual description and specifications. Validation is the process of determining the degree to which the implementations and their associated data are accurate representations of the real world from the perspective of the intended uses.

In the e – Post Office project, verification was done with the help of the Software Requirements Specifications (SRS). The system was verified to ensure that all the requirements specified by the customer are met. The customer of the project is DHT Software Services itself. The top level management acted as the customer for this project. In the e – Post Office project, validation was done by the customer in the absence of the developer. The result from the customer depicted that the project was 92% successful.

5.2 TEST CASES

Test Cases for Date of Birth

Test Case ID	Description	Procedure	Input	Expected output	Actual Output	Result
DOB1	Special Character except Slash	Enter special characters in the dob field of entry form	**	Error Message	Error Message	Pass
DOB2	Starting with Character Value	Enter dob starting with character in the dob field of entry form	S6/06/1983	Error Message	Error Message	Pass
DOB3	Null Value	Enter nothing in the dob field of entry form	Null Value	Error Message	Error Message	Pass
DOB4	Maximum Value for Day should be 31	Enter day value above 31 in the dob field of entry form	32/12/1987	Error Message	Error message	Pass
DOB5	Maximum Value for Month must be 12	Enter month value above 12 in the dob field of entry form	12/14/1987	Error Message	Error Message	Pass
DOB6	Float and double value	Enter float value in the dob field of entry form	7.5/11/1988	Error Message	Error Message	Pass
DOB8	Valid Date of Birth	Enter a valid dob value in dob field of entry form	01/01/1986	Accepted	Accepted	Pass

Table 5.1

Test Cases for Name

Test Case ID	Description	Procedure	Input	Expected output	Actual Output	Result
Name1	Special Characters other than space	Enter special characters in name field of entry form	cfgd!!gtks	Error Message	Error Message	Pass
Name2	Number	Enter name containing number values in name field of entry form	Saranya30	Error Message	Error Message	Pass
Name3	Null Value	Enter null values in name field of entry form	Null Value	Error Message	Error message	Pass
Name 4	Minimum 1 characters	Enter name with one character in name field of entry form	S	Error Message	Error Message	Pass
Name5	Maximum 30 characters	Enter name with more than 30 characters in name field of entry form	Prasenjit Rajendar Singh Mukherjee	Error Message	Error Message	Pass
Name7	Upper Case	Enter the name in upper case in name field of entry form	SMITH	Error Message	Error Message	Pass
Name8	Starting with space	Enter the name starting with space in name field of entry form	Priya	Error Message	Error Message	Pass
Name9	Title should not be present	Enter the name with title in name field of entry form	Mr. Robert	Error Message	Error Message	Pass
Name10	Valid Name	Enter a valid name in name field of entry form	Kalaivani	Accepted	Accepted	Pass

Table 5.2

Test Cases for Credit card number

Test Case ID	Description	Procedure	Input	Expected output	Actual Output	Result
Number1	Special Characters other than space	Enter special characters in credit card number field of the entry form	1234!!67808 **9!9	Error Message	Error Message	Pass
Number2	Numbers with space	Enter credit card number containing spaces in credit card number field of the entry form	4705 9584 5057 0671	Error Message	Error Message	Pass
Number3	Null Value	Enter null value in credit card number field of the entry form	Null Value	Error Message	Error message	Pass
Number4	Minimum 1 digit number	Enter card number as single digit in credit card number field of the entry form	3	Error Message	Error Message	Pass
Number5	Maximum 30 digit number	Enter card number as 30 digit in credit card number field of the entry form	3705958450 5706737059 5845057067	Error Message	Error Message	Pass
Number6	Starting with space	Enter card number starting with space in credit card number field of entry form	3705958450 57067	Accepted	Accepted	Pass
Name7	Valid credit card number	Enter a valid card number in credit card number field of entry form	3705958450 57067	Accepted	Accepted	Pass

Table 5.3

5.3 SYSTEM IMPLEMENTATION

Implementation is the process of converting a new or revised system into operational one. It is key stage in achieving a successful new system because it involves a lot of upheaval in the user department. System testing is an expensive but critical process that can take as much as 50% of the budget for program development. Testing is the stage of implementation, which is aimed at ensuring that the system works accurately and efficiently before live operation commences. It is the process of executing a program with the explicit intention of finding errors. The logical design and physical design are thoroughly examined to ensure that it will work when implemented.

Tests data designed to show that the system will operate successfully in all aspects and produce expected result as specified. Implementation includes all those activities that take place to convert from the old system to the new. The new system may be totally new or it may be a major modification to an existing system.

CHAPTER 6

CONCLUSION AND FUTURE ENHANCEMENT

6.1 CONCLUSION

This application developed is designed in such a way that any further enhancements can be done with ease. This project is been much useful to the customers for their telephone bill, direct post and media post payment. Customers can purchase the postal products, magazines and greeting cards online. This system is also useful to the corporate customers for maintaining their speed post account online. Since most of the useful activities are done online, customers will move towards this system. Credit card payment facility reduces the time consumption.

The system has been developed keeping in mind all the given possible conditions and found to work efficiently and effectively. The developed system is so flexible that any necessary changes can be easily.

6.2 FUTURE ENHANCEMENT

In future, this system can be designed with some enhancements. We can include Postal Life Insurance and Post office savings account maintenance. We can add some attractive things to make the people use this system. For example, we can include the page for selling gold coins. Now this system has been developed for maintaining records for one Head Post Office. In future it can be modified and implemented for other Head Post Offices.

APPENDIX

SAMPLE SCREENS
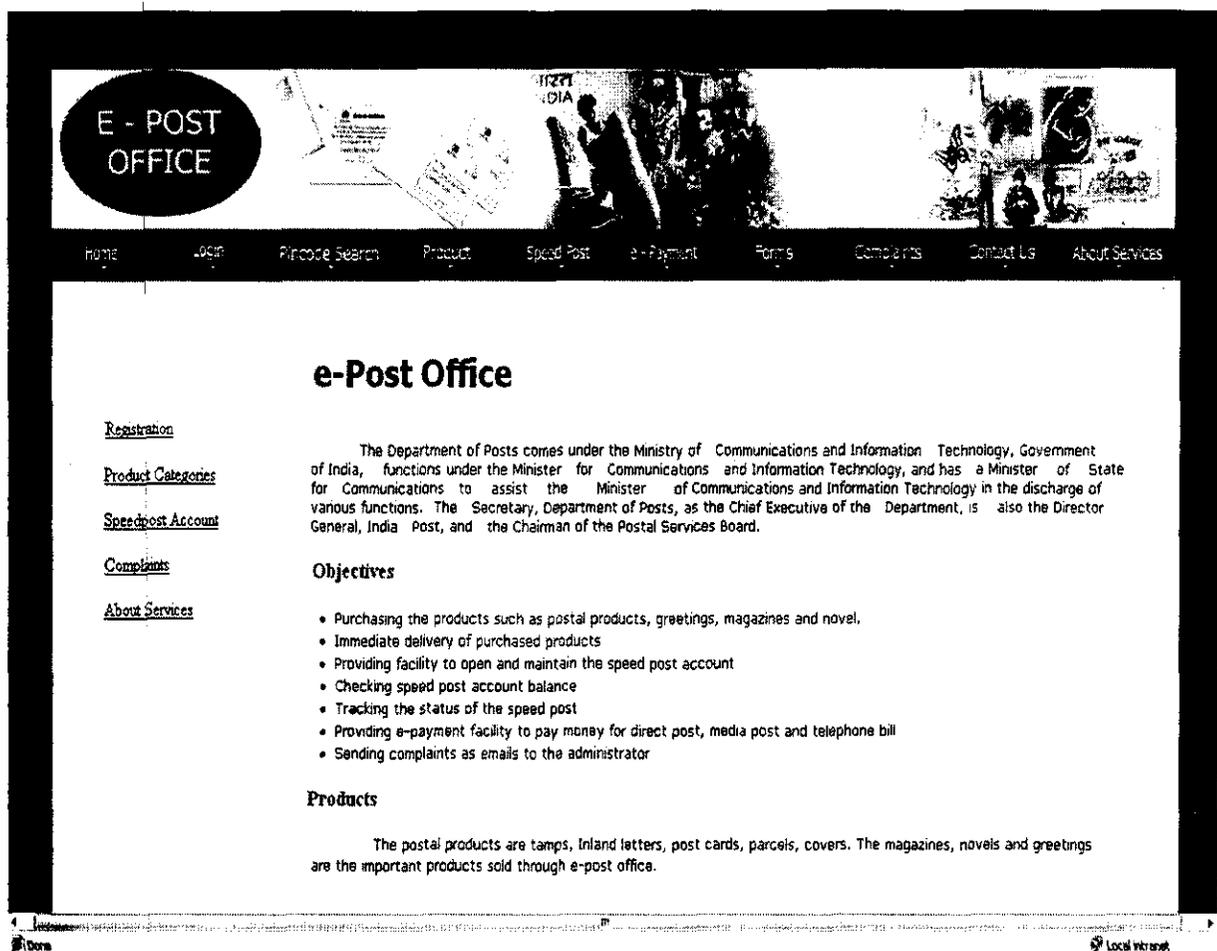
Figure 7.1: Home page
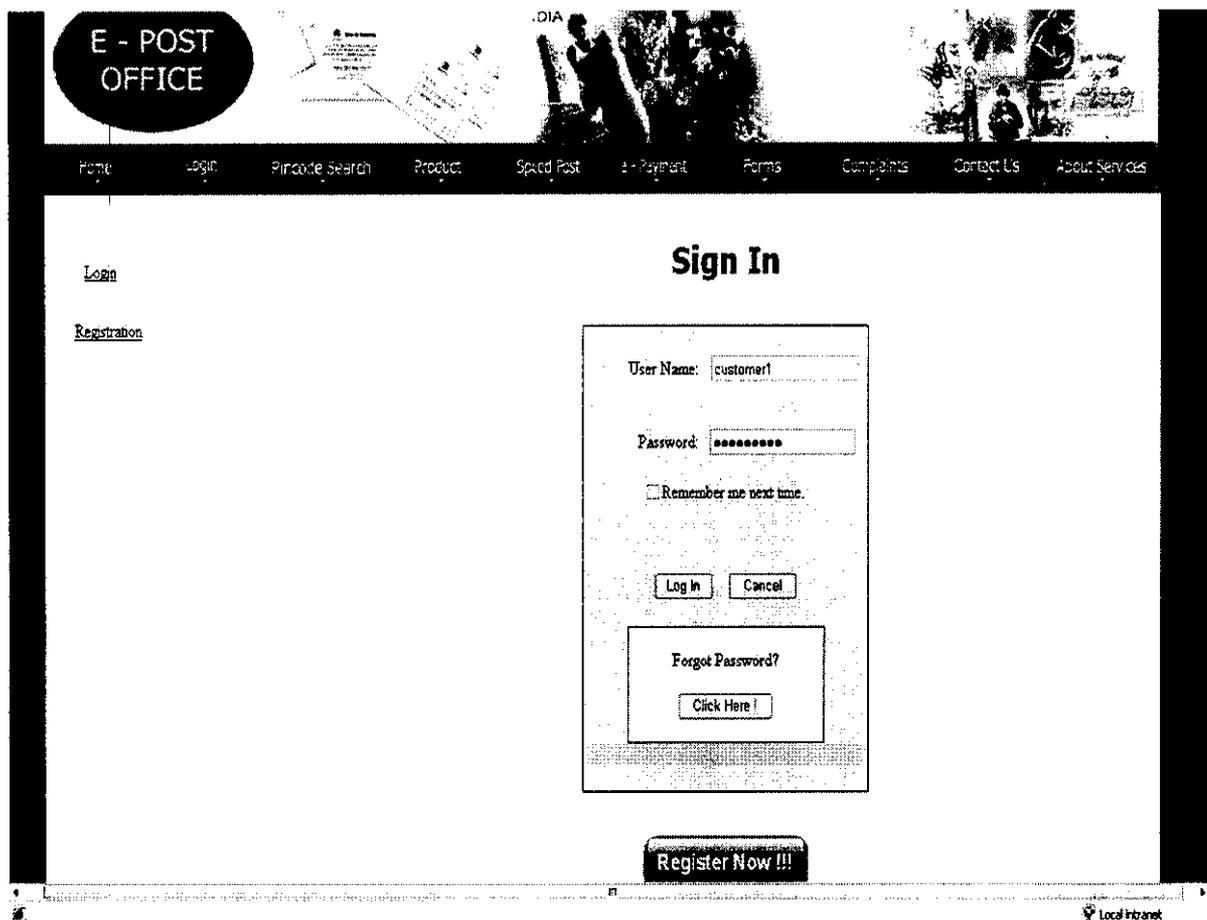
Figure 7.2: Login form

Figure 7.3: Pin code search
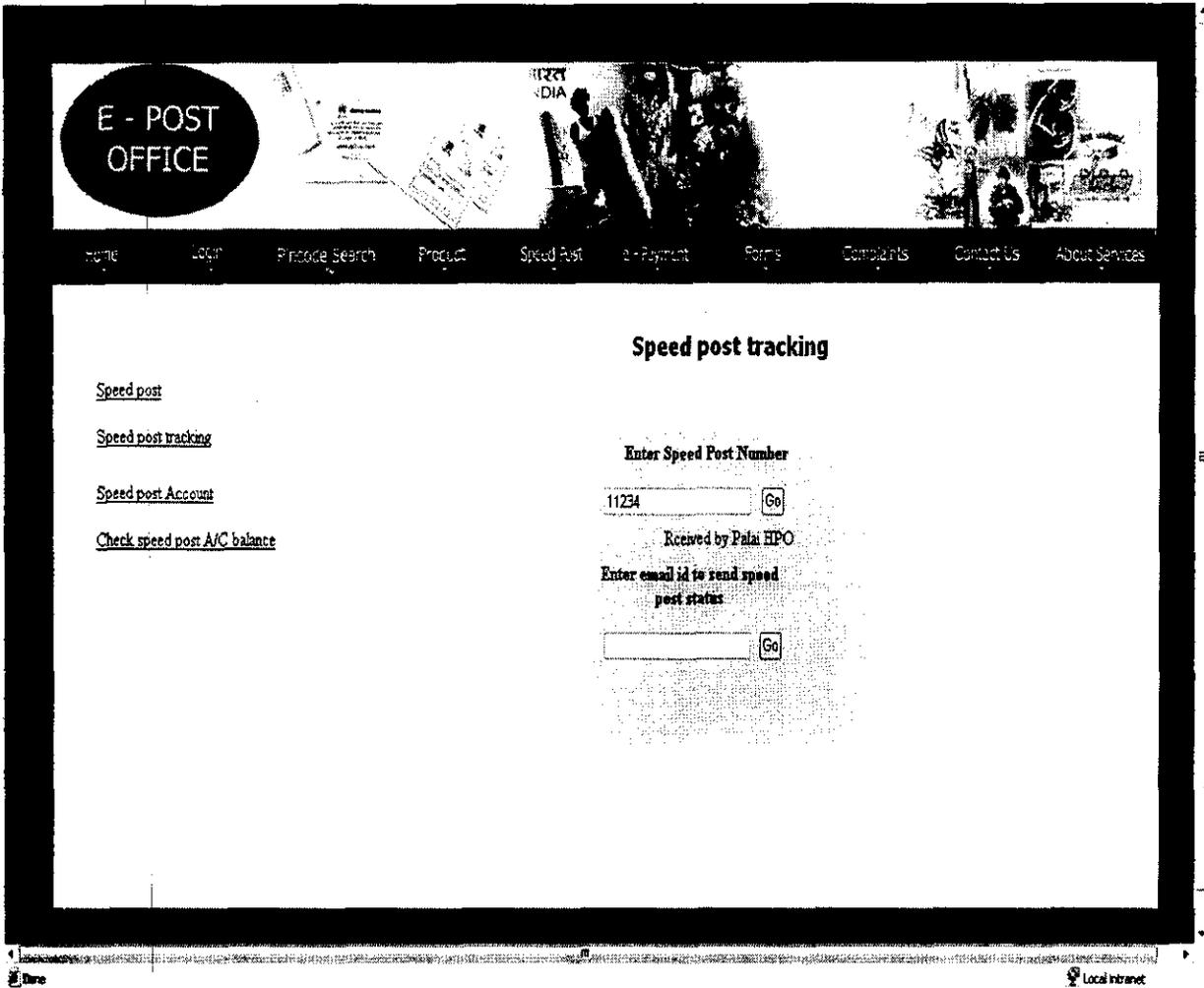
Figure 7.4: Speed post tracking

Figure 7.5: Telephone bill payment
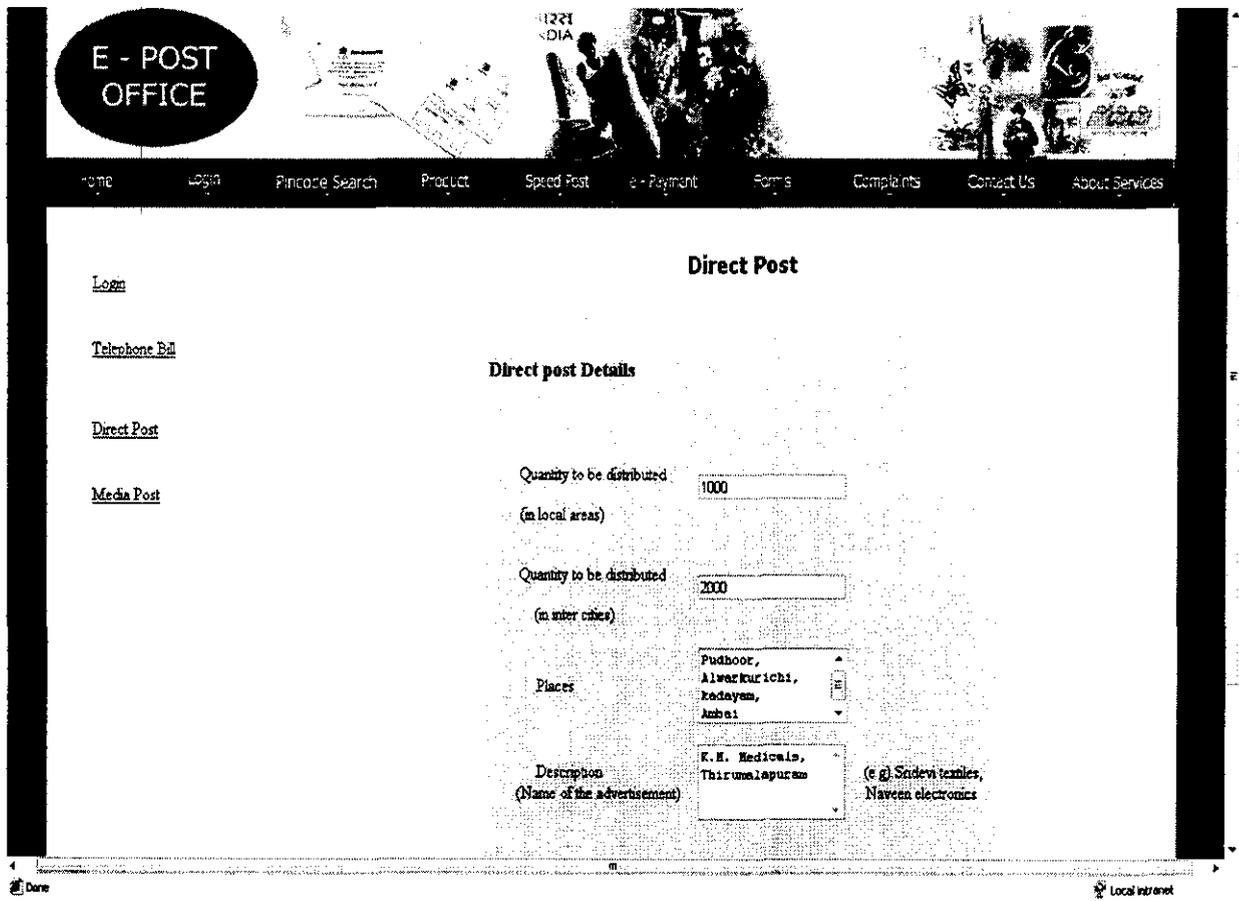
Figure 7.6: Direct post Payment

Figure7.7: Media post payment

Figure 7.8: Credit card payment

Figure 7.9: Products

Figure 7.10: Admin Home page

Figure 7.11: Updating speed post status

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