E-SECURE TRANSACTION

PROJECT WORK DONE AT

NATIONAL CENTER FOR COMPUTING TECHNIQUES
CHENNAI-34.

PROJECT REPORT

SUBMITTED IN PARTIAL FULFILLMENT OF THE
REQUIREMENTS FOR THE AWARD OF THE DEGREE OF
M.Sc Applied Science (Computer Technology)
OF BHARATHIAR UNIVERSITY, COIMBATORE.

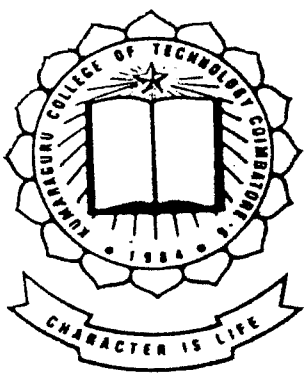
SUBMITTED BY

K.SUMATHI
REG NO: 9937Q0013

GUIDED BY

EXTERNAL GUIDE
Ms.S.CYINTHYA, B.E

INTERNAL GUIDE
Mr.S.ANDREWS,M.Sc.,PGDPM.



DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING
KUMARAGURU COLLEGE OF TECHNOLOGY
COIMBATORE– 641 006
April 2001

CERTIFICATE

This is to certify that the project work entitled

E-SECURE TRANSACTION

Submitted to

Kumaraguru College of Technology
(Affiliated to the Bharathiar University)

in partial fulfillment of the requirements for the award of the Degree of **M.Sc. (Applied Sciences – Computer Technology)** is record of original work done by

K. SUMATHI
REG NO: 9937Q0013

S. Thangavel 24/4/'01
Professor and Head

2014
Internal Guide

Submitted to University Examination held on 27.4.2001

27/4
Internal Examiner

H. Abdul Rauf 27/4/2001
External Examiner

NCCT
ORT SOFTWARE DIVISION

NATIONAL CENTRE FOR
COMPUTING TECHNIQUES

109, IInd Floor, Bombay Flats, Nungambakkam High Road,
Nungambakkam, Chennai - 600 034. Ph : (044) 823 5816

To Whom It May Concern

This is to certify that **Ms. K.Sumathi** has completed her project work successfully in **Java** entitled **"E-Secure Transaction"** on the partial fulfillment of her **M.Sc (Applied Science - Computer technology)** degree, for a period of 4 months starting from January 2001 to April 2001.

Wishing her the very best for ever.

With respects and regards,

For **NCCT**

Authorized Signatory
Date: 06-04-01

DECLARATION

I hereby declare that the project entitled

'E - SECURE TRANSACTION' submitted to **Bharathiar University** as the project work of **M.Sc Applied Science (Computer Technology)** Degree, is a record of original work done by me under the supervision and guidance of **Ms.Cyinthya B.E at National Center for Computing Techniques,109,II floor,Bombay Flats,Nungambakkam High Road Chennai-600 034** and **Mr Andrews ,Kumaraguru College of Technology, Coimbatore,** and this project work has not found the basis for the award of any Degree/Diploma/ Associateship/Fellowship or similar title to any candidate of any university.

Place: COIMBATORE.

Signature of the student

Date: 20.4.2001

Counter signed by

(Internal Guide)

N.C.C.T. MADRAS

(External Guide)

ACKNOWLEDGEMENT

An endeavor over a long period can be successful only with the advice and support of many well wishers. I take this opportunity to express my gratitude and appreciation to all of them.

I am bound to express my gratitude to **Dr.K.K.Padmanabhan,B.Sc(Engg)., M.Tech., Ph.D.,** Principal ,Kumaraguru College of Technology for his encouragement throughout my course.

I wish to thank **Prof. S.Thangasamy, B.E(Hons)., Ph.D.,** Head, Department of Computer Science, Kumaraguru College of Technology for allowing me to utilize the laboratory resources and for being supportive throughout the tenure of my project.

I admit my heartfelt thanks to my internal Guide **Mr.S.Andrews, M.Sc., PGDPM,** Faculty member, Kumaraguru College of Technology, for encouraging me to pursue new goals and ideas.

I owe much to my **Miss.Cyinthya**, external guide, NCCT for her inspiring advice, immense help and whole-hearted support throughout my project at her esteemed organization.

I wish to thank my parents and all my friends who were showing their contributions in many subtle ways and indeed instrumental in achieving my final results.

SYNOPSIS

Online Shopping is developed to provide a complete secure transaction in the electronic commerce world, through e-secure credit card transactions, particularly through Encrypted credit cards.

The buyer, who intends to shop online through our web site, has to first register with us. Suppose the buyer is already registered he can enter our shopping mart by just inputting user name, password. The user details are stored in a database. Every time the user clicks on the submit button in the screen, the information he has entered are checked with those in the database. If the information matches he is then allowed to shop.

The buyer then selects the items that which he wishes to purchase. The bill is generated as soon as the buyer clicks the get bill button. The mode of payment is by default through credit card only.

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INTRODUCTION

1.1 PROJECT OVERVIEW

The objective of the proposed system is to develop a complete secure transaction in the electronic commerce world, through e-secure credit card transactions; Particularly through Encrypted credit cards.

At present the use of credit card number for online shopping is not widely used, because of the hackers who misuse any credit card number that comes their way. The buyers risk paying for items not bought by them. The merchants risk sending the goods to the hackers who are all the actual owners of the credit card. This problem has discouraged the use of credit card for online shopping. Our products aims at providing security to the credit card numbers through encryption of the credit card. This concept when implemented properly will considerably increase the customers confidence for shopping online using credit card.

The buyer, who intends to shop online through our web site, has to first register with us. Suppose the buyer is already registered he can enter our shopping mart by just inputting user name, password . The user details password are stored in a database. Every time the user clicks on the submit button in the screen, the information he has entered are checked those in the database. If the information matches he is then allowed to shop.

The buyer then selects the items that which he wishes to purchase. The bill is generated as soon as the buyer click the get bill button. The means of payment should be set default as credit card payment.

1.2 ORGANIZATION PROFILE

NCCT is promoted by Techno Crates incorporated under companies act 1956 as **National Center for Computing Technologies** .The major activities of NCCT encompasses Software Development . The company is an established player in the IT industry with specialized Export Software Workshop with distributed centers at Hyderabad, Bangalore, Cuttack apart from Chennai, and has a niche market in specialized Software. NCCT is involved in Software Development using latest technologies.

NCCT Software Development Division focuses on Marketing Software products in the areas of Object _Oriented, GUI Based Application Development Tools, Databases, Office Automation and Engineering tools. NCCT is involved in Multimedia Software packages are developed as per US market requirements .The clientele of NCCT includes DRDL,DMRL, HMT,HAL ,APIDC.

NCCT is one of the named companies in the Chennai. Not only in Chennai, it is having branches in many places all over India. In Calcutta Division , we are concentrating not only in Software field also along with Hardware and Embedded Languages.

NCCT Limited, Chennai is a leading edge Software House offering IT solutions to clients Worldwide. It was rated as the faster growing IT company in India in the 'Computer Today' Magazine.

The company has achieved major milestones in terms of tie-ups, orders procured, development of new products, technology advancement, quality certification.

2. SYSTEM STUDY AND ANALYSIS

2.1 EXISTING SYSTEM

The customers go to the shop and place their queries to the sales people present at the shop. The customers are provided with the list of products that would match their requirement criteria. The customers choose the product of their linking and place an order. The representative of the financier is also present at the shop. He gives the various finance options available for the bill amount. If the option is agreeable to the customer, then the customer will have to provide necessary documents to get a loan from the financier. The financier then pays the bill and the products are delivered to the customer.

Limitation of Existing System :

Conveyance will be a limitation for many of the people. There will be wastage of time. Needed products will not be available.

2.2 PROPOSED SYSTEM

The Proposed system will computerize and automate 90% of the existing system .The customer need not travel up to the shop. He can search for the desired product on the Internet from his desk. The customer is provided with the facility to compare a product with the competitors in the market. This reduces a lot of pain to the customers in selecting the product that would match all their requirements. He can order for the desired products through the net. On confirming the order the database is updated. The administrator of the shop can log on to the net and check for any ordered

product. After confirmation and the payment the administrator will order to deliver the products depending the customer order number. This system reduces the traveling distance and time of the customer. This is one of the main features of the Internet, which is thoroughly exploited in this system. This system has a provision in order to view the products physically and at the same time if the customer want to zoom the product ,they can zoom it easily.

2.3 REQUIREMENTS ON NEW SYSTEM

Secrets have always been hard to keep & we have more secrets today, than ever, what with social security numbers, credit card accounts, and personal identification numbers(pins) for accessing particularly everything. With computers to keep records & collect data, the informed person is examining what information is solicited, what is shared, and what is kept private. The Internet is open, meaning transmissions can be overheard, encrypted & forged.

2.4 USER CHARACTERISTICS

Before navigating through the site, the user must register his/her details.

The user will be given a valid **login name** and **password.**

The user must also be a valid credit card holder.

The user can avail any of the products displayed on the **web page.**

All payments will be made through the credit card.

Programming Environment

3. PROGRAMMING ENVIRONMENT

3.1 HARDWARE CONFIGURATION

Model	:	Pentium
Main Processor	:	Intel Processor
Mother Board	:	Intel YM430tx
Clock Speed	:	200 MHz MMX
RAM	:	32MB SD-RAM
Hard Disk	:	4.3GB HDD
FDD	:	1.44MB
Monitor	:	Samtron 4Bi
Ports	:	2pp 1sp
Mouse	:	Logitech
Keyboard	:	104 TVSE Gold

3.2 DESCRIPTION OF THE SOFTWARE AND TOOLS USED

- **Front End**: HTML with Java Script for client's side validation.
- **Middleware**: Java Web server, which runs Java Servlets.
- **Back End**: MS-Access

4.SYSTEM DESIGN AND DEVELOPMENT

4.1 INPUT DESIGN

A major part in the design of a system is the preparation of the input. The input design stage is necessary for the successful development and implementation of the system. The input design is the link that ties the information systems into the process of converting user-oriented inputs to a computer based format.

In e-secure transaction, the user must first enter the registration form. The registration form contains login name, password, address, etc. All these details are stored in to the database. Validation checks are done for the input. For registered user, the user enters the login name and password to enter in to the shopping cart. Then the users click the items which he/she wishes to purchase. Then selects the needed items and get the bill.

4.2 OUTPUT DESIGN

Output designing is a very important phase in the designing of a system. The important objective of any system is in its capability of producing high quality outputs or reports. The design of the software depends on the design of its output, which is the main requirement of the user. So designing the desired output is an important factor which determine worthiness of the software. Special attention should be given on the project so that the output design contains only relevant information. The reports are clearly explained with all the details in the development.

4.3 DATABASE DESIGN

Detail1 Table

Field Name	Data Type
Lname	Text
Pwd	Text
Age	Number
Sex	Text
Dat	Date/Time
Job	Text
Add1	Text
Add2	Text
Add3	Text
State	Text
City	Text
Country	Text
Phone	Number
Mobile	Number
Ccno	Number
Pcode	Number

Book List Table

Field Name	Data Type
Code	Text
Bookcode	Number
Title	Text
Price	Number

Jwell1 table

Field Name	Data Type
Jwellcode	Number
Weight	Text
Price	Number

Caslist Table

Field Name	Data Type
Code	Text
Casscode	Number
Cassname	Text
Price	Number

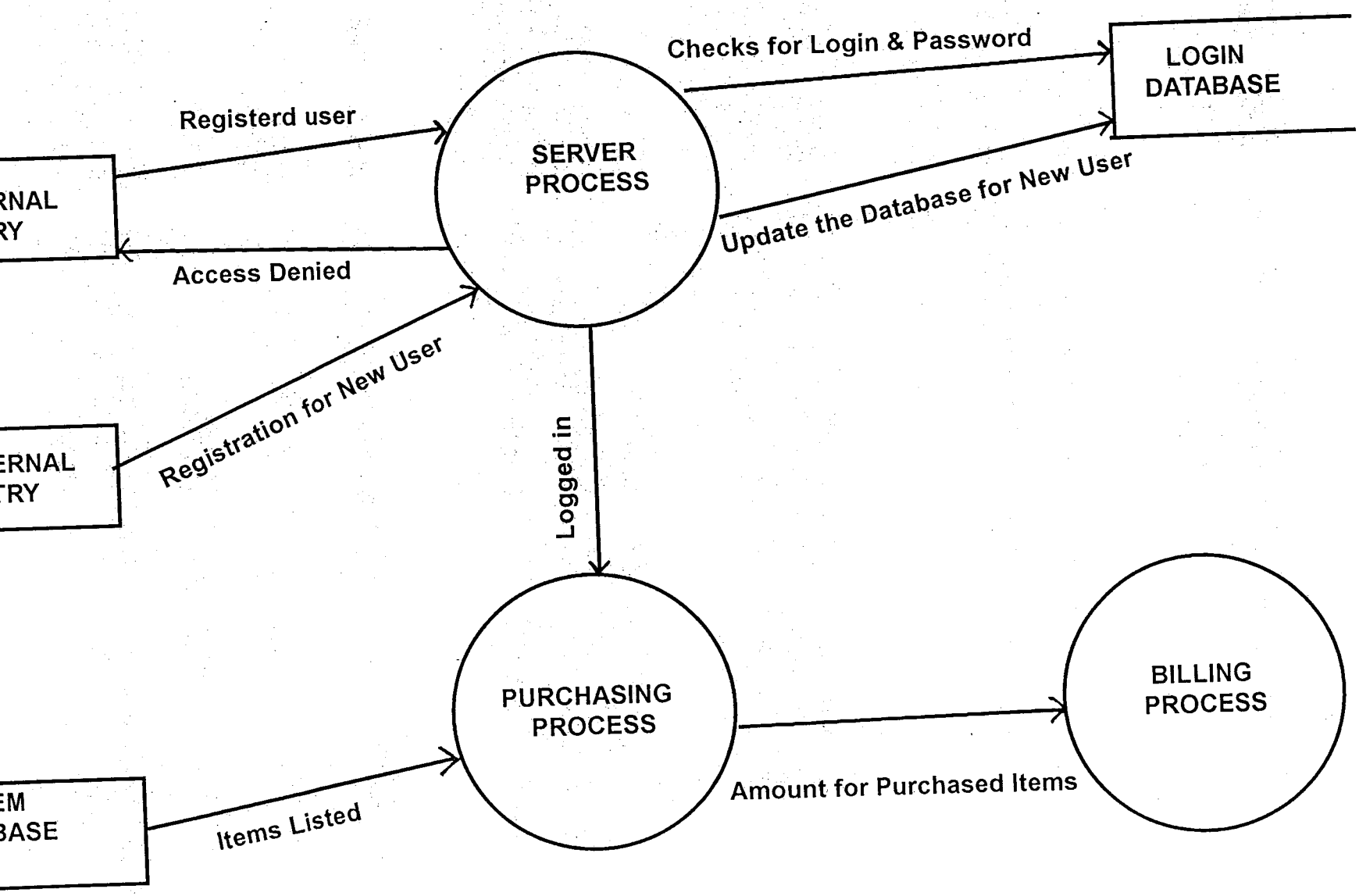
VCD List Table

Field Name	Data Type
Code	Text
Vcdcode	Number
Vcdname	Text
Price	Number

Credit Table

Field Name	Data Type
ccno	Text
Pwd	Text

Process Design



5. SYSTEM IMPLEMENTATION AND TESTING

5.1 SYSTEM IMPLEMENTATION

FEATURES OF JAVA

Sun describes Java language as a simple distributed, interpreted, secure, architecturally neutral, portable, high performance and dynamic language.

General purpose Java programs that can run stand along, outside a web browser are called Java applications.

SIMPLE

Java was designed to be easy for the professional programmer to learn and use effectively. Assuming that you have some programming experience, you will not find Java hard to master. If you already understand the basic concepts of object-oriented programming, learning Java will be even easier.

OBJECT-ORIENTED

Although influenced by its predecessors, Java was not designed to be source-code compatible with any other language. This allowed the Java team the freedom to design with a blank slate.Java is an Object-Oriented language. It defines data as objects with methods that support the objects. Java does not support multiple inheritance. It supports single inheritance where one class inherits from only one other class. On the other hand, Java supports abstract classes using which programmers can simulate multiple inheritance.

ROBUST

The multiplatformed environment of the Web places extraordinary demands on a program, because the program must execute reliably in a variety of systems. Thus, the ability to create robust programs was given a high priority in the design of Java. Because Java is a strictly typed language, it checks your code at compile time. However, it also checks your code at run time.

MULTITHREADED

Java was designed to meet the real-world requirement of creating interactive, networked programs. To accomplish this, Java support multithreaded programming, which allows you to write programs that do many things simultaneously.

The Java run-time system comes with an elegant yet sophisticated solution for multiprocessor synchronization that enables you to construct smoothly running interactive systems.

ARCHITECTURE-NEUTRAL

A central issue for the Java designers was that of code longevity and portability. One of the main problems facing programmers is that no guarantee exists that if you write a program today, it will run tomorrow - even on the same machine. Operating system upgrades, processor upgrades, and changes in core system resources can all combine to make a program malfunction.

DYNAMIC

Java programs carry with them substantial amounts of run-time type information that is used to verify and resolve accesses to objects at run time. This makes it possible to dynamically link code in a safe and expedient manner. This is crucial to the robustness of the applet environment, in which small fragments of byte code may be dynamically updated on a running system.

ABOUT SERVLETS

Servlets are small programs that execute on the server side of a web connection. Just as applets dynamically extend the functionality of a Web browser, servlets dynamically extend the functionality of a Web server.

The Java Servlet Development Kit (JSDK) contains the class libraries that you will need to create servlets. Consider a request for a static Web page. A user enters a Uniform Resource Locator (URL) to a browser. The browser generates an HTTP request to the appropriate Web server. The Web server maps this request to a specific file. That file is returned in an HTTP response to the browser.

SERVLETS OFFER SEVERAL ADVANTAGES OVER CGI

- Performance is significantly better. Servlets execute within the address space of a Web server.
- Servlets are platform independent, because they are written in Java. Several Web servers, from vendors such as Sun, Netscape, and Microsoft, offer the Servlet API.

Programs developed for this API can be moved to any of these environments without recompilation.

- The full functionally of the Java class libraries is available to a servlet. It can communicate with applets, databases, or other software via the sockets and RMI mechanisms.

The Java Servlet Development Kit (JSDK) contains the class libraries that you will need to create servlets. A utility known as the **servletrunner** is also included, which enables you to test some of the servlets that you create.

Java servlets are one of the most exciting new technologies. Servlets are efficient, persistent, portable, extensible and secure.

EFFICIENT

A servlet's initialization code is only executed the first time the web server loads it. Once the servlet is loaded, it is only a matter of calling a service method to handle new requests. This servlet is a much more efficient technique than loading a completely new servlet executable with every request.

PERSISTENT

Servlets can maintain state between requests. Once a servlet is loaded it stays resident in the memory while serving incoming requests. A simple example of this would be a Vector that holds a list of categories used in an online catalog. When then servlet is initialized it queries the database for a list of categories and stores these categories in a vector. As it services requests, the servlet accesses the Vector that holds the categories instead of querying the database again. Taking advantage of the persistent characteristics of servlets can improve your applications performance drastically.

PORTABLE

Servlets are developed using Java therefore that are portable. This gives servlets the ability to be moved to a new operating system without changing the source. You can take code that was compiled on a Windows NT platform and move it to a Solaris box without making any changes.

EXTENSIBLE

Another advantage servlets gain by being developed in an object-oriented language like Java is that they can be extended and polymorphed into new objects that better suit your needs. A good example of this is an online catalog. We may want to display the same catalog search tool at the top of every dynamic page throughout your web site. You definitely don't want to add this code to every one of our servlets. So we implement a base servlet than builds and initializes the search tool and then extend it to display transaction specific responses.

SECURE

Servlets run on the server side inheriting the security provided by the web server. Servlets can also take advantage of the Security Manager.

ABOUT MS-ACCESS

MS-Access is one of the recently developed RDBMS for Windows, released in USA by the Microsoft Corporation.

Access does things a little differently from database Programs like Dbase (or) Dos. Access stores records in organized lists called tables. One (or) more tables in Access make up a whole database. Access allows setting up tables and linking them to other tables.

language attribute of the <SCRIPT> tag can be used to specify the version of JavaScript being used. JavaScript is case sensitive.

. JavaScript facilitates programmers in creating dialog boxes called alerts that display a message in a small window. The ParseFloat() and ParseInt() functions convert a string of number into floating point and integer numbers respectively. Events are signals generated when specific actions occur. Scripts can be written to react to these events. JavaScripts events are: OnBlur() event occurs when a user clicks outside a field. OnClick() event occurs when a user clicks on a link or form element. OnChange() event occurs when a user changes the value in a form field. OnFocus() event occurs when a user clicks inside the field. OnLoad() event occurs when a page is loaded into Navigator. OnSubmit() event occurs when a user clicks on the submit button.

JDBC (Java DataBase Connectivity)

JDBC is intended as a call-level SQL interface that provides Java programmers with a uniform interface to a wide range of relational databases. JDBC is similar in concept to Microsoft's Open Database Connectivity(ODBC) API(Application Programming Interface), which has become the standard for relational data base access. Because virtually all databases engines offers access using the ODBC standard, and the JDBC standard enables Java code to perform ODBC calls, it is easy to understand why JDBC us preferred over the non-open Propitiatory standards. It is simply a set of classes and interfaces written in Java Programming Language to provide a standard API for tool/database developer. JDBC supports both two-tier and three-tier models for database access.

5.2 SYSTEM TESTING

5.2.1 UNIT TESTING

The testing plays an important role in the development of the project . The unit testing comprises the set of the tests performed by an individual programmer. The situation is illustrated as follows

Coding → Debugging→ Unit testing → Integration testing

The program unit is usually small enough that the programmer who developed it can test it in great detail and certainly in greater detail than will be possible when the unit is integrated into an evolving software product.

Our project was divided into modules and tested according to the unit testing.

There are three categories:

They are

- Performance Testing
- Stress Testing
- Structured Testing

5.2.3 PERFORMANCE TESTING

It determines the amount of execution time spent in various parts of the unit. The certain amount of performance testing can be done during unit testing.

5.2.4 STRESS TESTING

Stress test are those tests designed to intentionally break the unit into many small parts of units.

5.2.5 STRUCTURED TESTING

Structured tests are concerned with exercising the internal logic of the program and traversing particular execution parts. Some author refer "Black box testing" as Stress test and "White box or GlassBox" as Structured testing.

5.2.6 SYSTEM TESTING

System Testing is divided into two parts namely

- Integration Testing
- Acceptance Testing

5.2.6.1 INTEGRATION TESTING

Integration testing has two types namely:

1. Top-Down
2. Bottom-Up

Bottom-Up is the traditional strategy used to integrate the components of a software system into a functioning whole. It consists of unit testing, followed by the testing of the entire system.

Unit testing has the goal of discovering errors in the individual modules of the system. Unit testing should be exhaustive as possible to ensure that each representative case handled by each module has been tested. Unit testing is eased by the system structure that is composed of small loosely counted modules. The primary purpose of the subsystem testing is to verify operation of the interfaces between modules in the subsystem.

Disadvantages of the Bottom-Up testing include the necessity to write and debug test harness fir the modules and the level of the complexity that results into larger and larger units. The disadvantage is the difficulty of isolating errors.

Top-Down integration starts with the main routine and one or two immediately subordinate routines in the system structure . After this top level skeleton has been thoroughly tested, It becomes the test harness for its immediately subordinate routines. Top –down integration requires the use of the programs stubs to simulate the effect of lower level routines that are called by those being tested.

5.2.6.2 ACCEPTANCE TESTING

Acceptance testing involves planning and execution of functional tests, performance tests and stress tests. In order to demonstrate that the implementation system satisfies its requirements. Typically acceptance testing will incorporate test cases developed during unit testing and integration testing.

In our project, I have performed and underwent acceptance testing and I succeeded in it. I also underwent Beta testing which is the practical implementation of the project.

5.3 REFINEMENTS BASED ON FEEDBACK

Online bargaining can be introduced so that the user will be benefited, in the sense time and money can be saved a lot. Bills can be displayed so that the user can have a hard copy of it. Many more products can be included so that the user can shop all under one roof. If the customer is not satisfied with the product money back guarantee will be made provided the product is returned in good condition.

6. CONCLUSION

Thus the proposed system will automate 90% of the existing system. He can search for the desired product on the Internet from his desk. The customer is provided with the facility to compare a product with those provided by the competitors in the market. This reduces a lot of pain to the customers in selecting the product that would match all their requirements. He can order for the desired products through the net. This system reduces the traveling distance and time of the customer.

7. FUTURE ENHANCEMENT

This system can provide the convenience of making the payment online by using credit cards. If the customer is not satisfied with the product money back guarantee will be made provided the product is returned in good condition.

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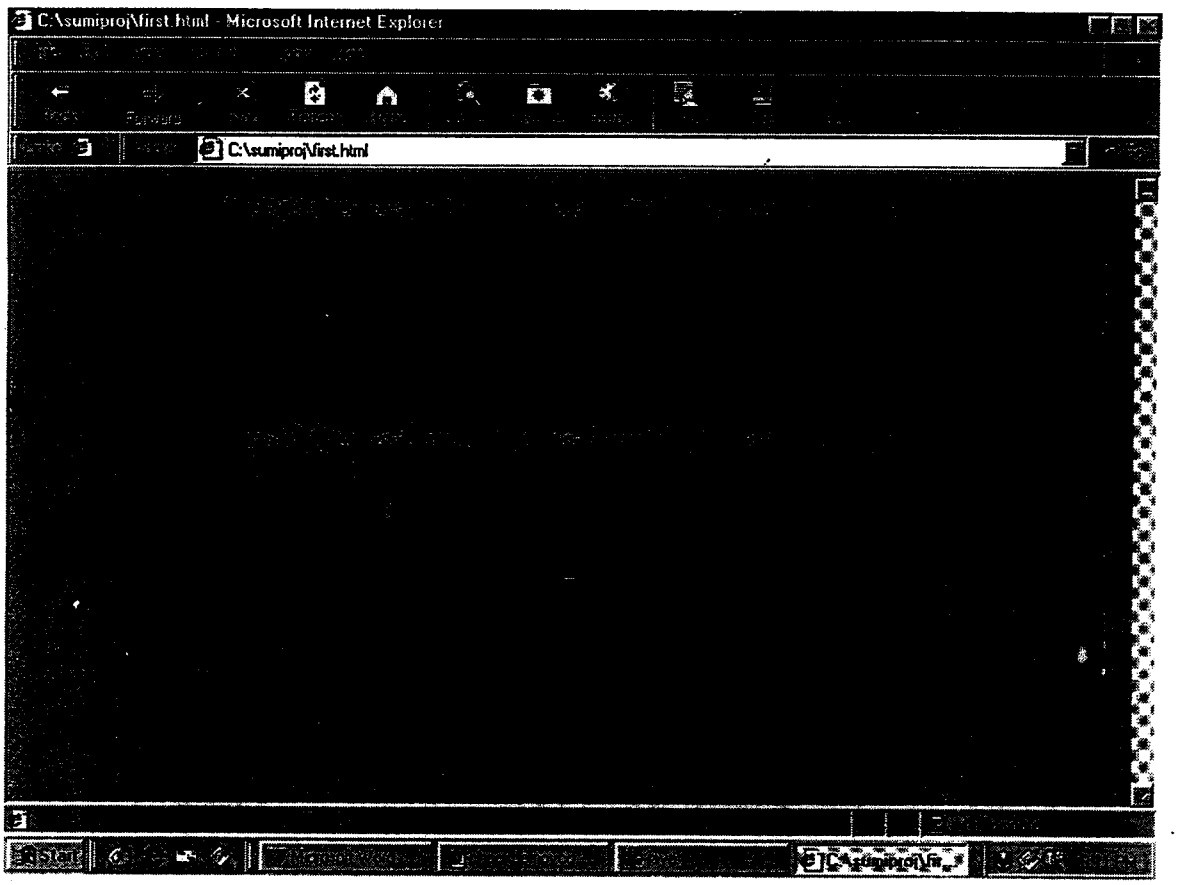
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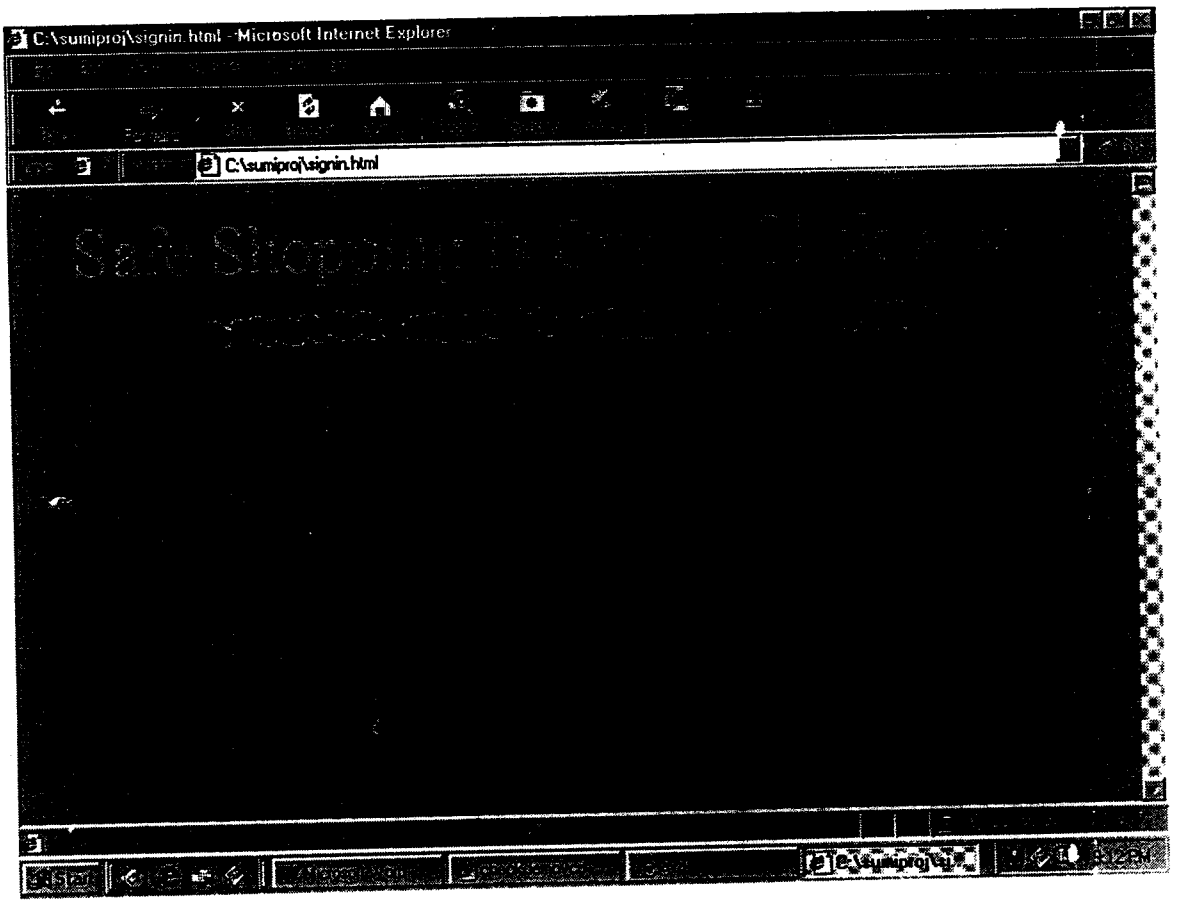
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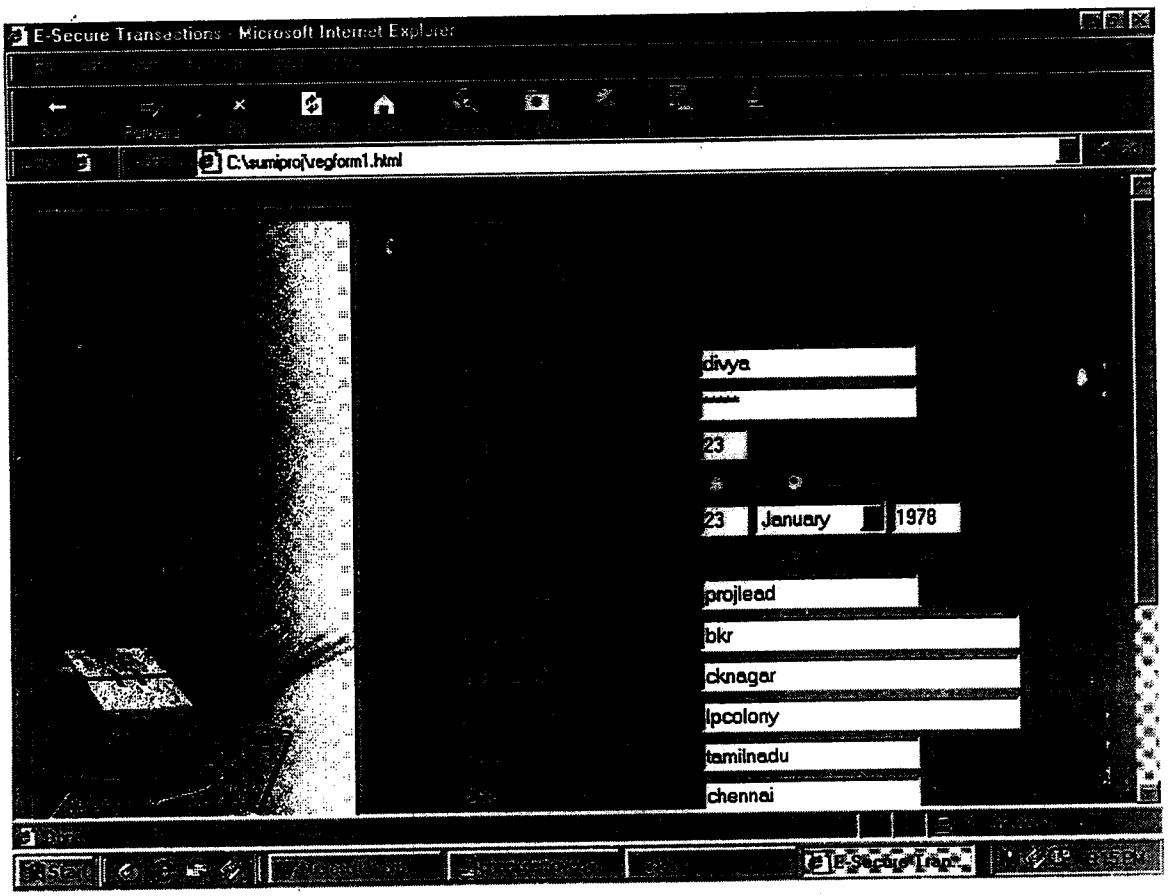
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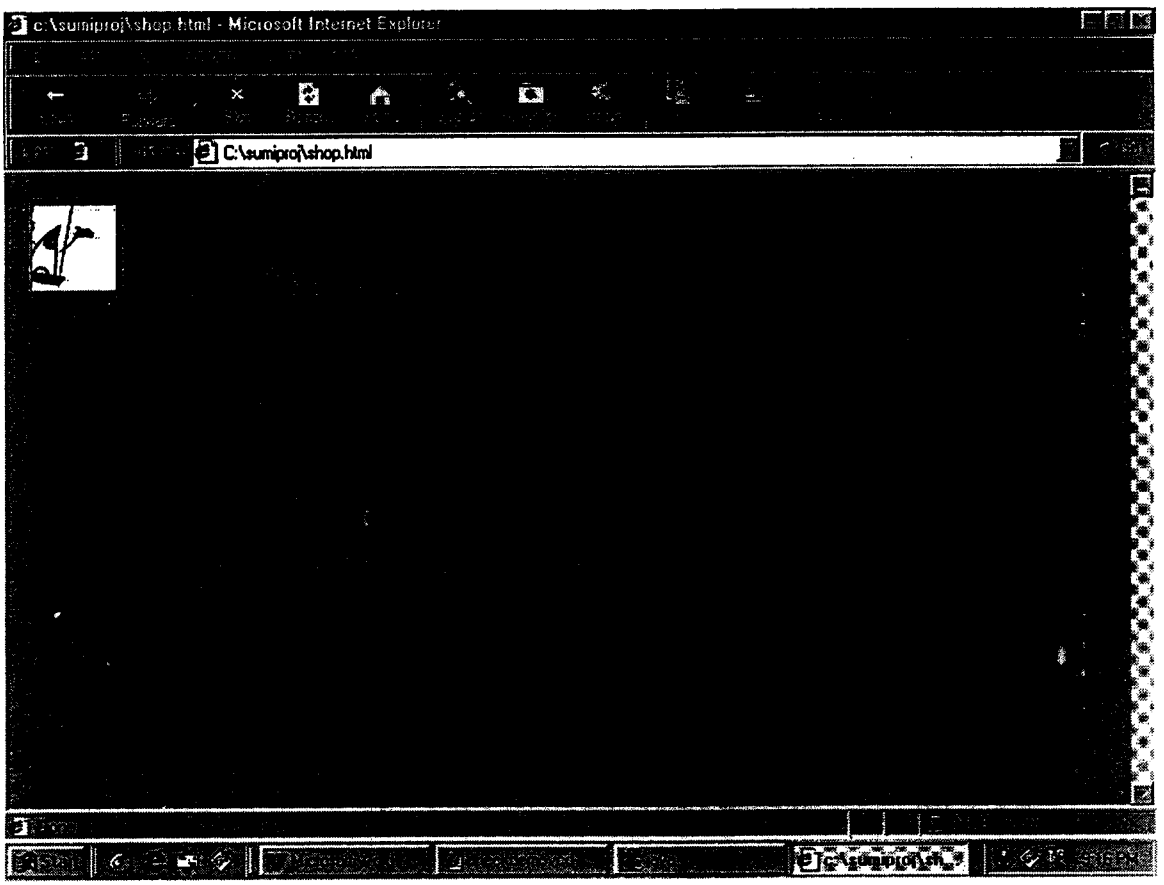
RETRY!!!!!!!!!!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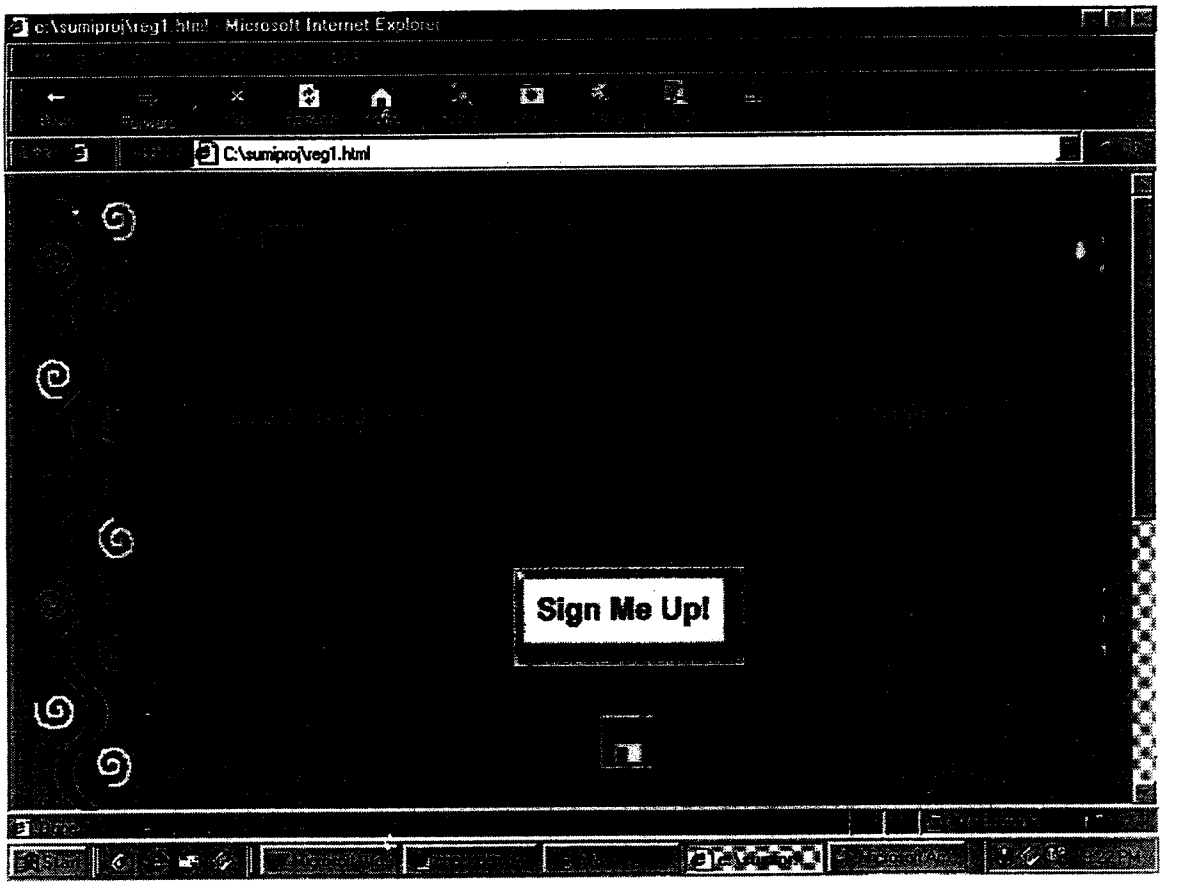
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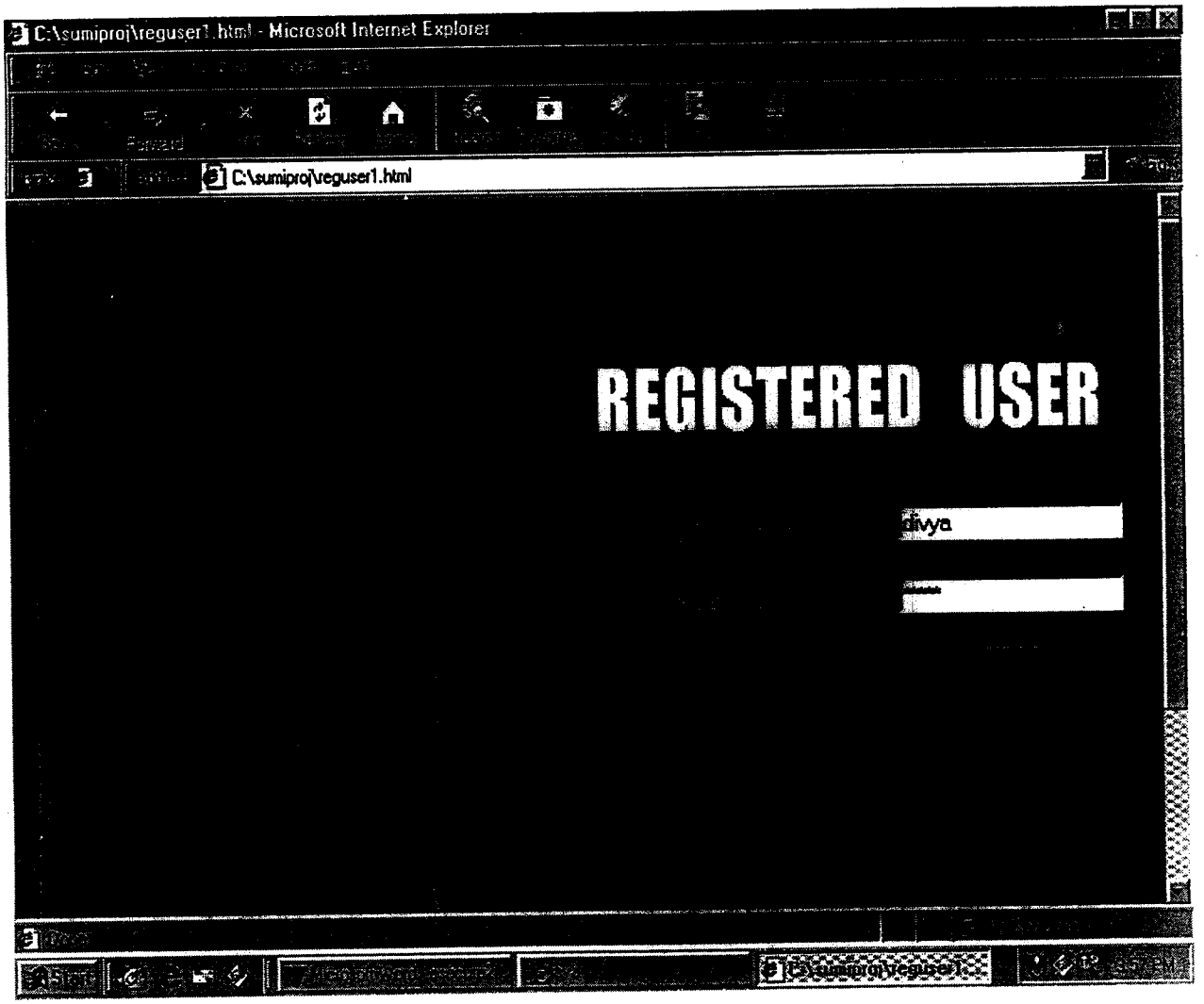
Sign Me Up!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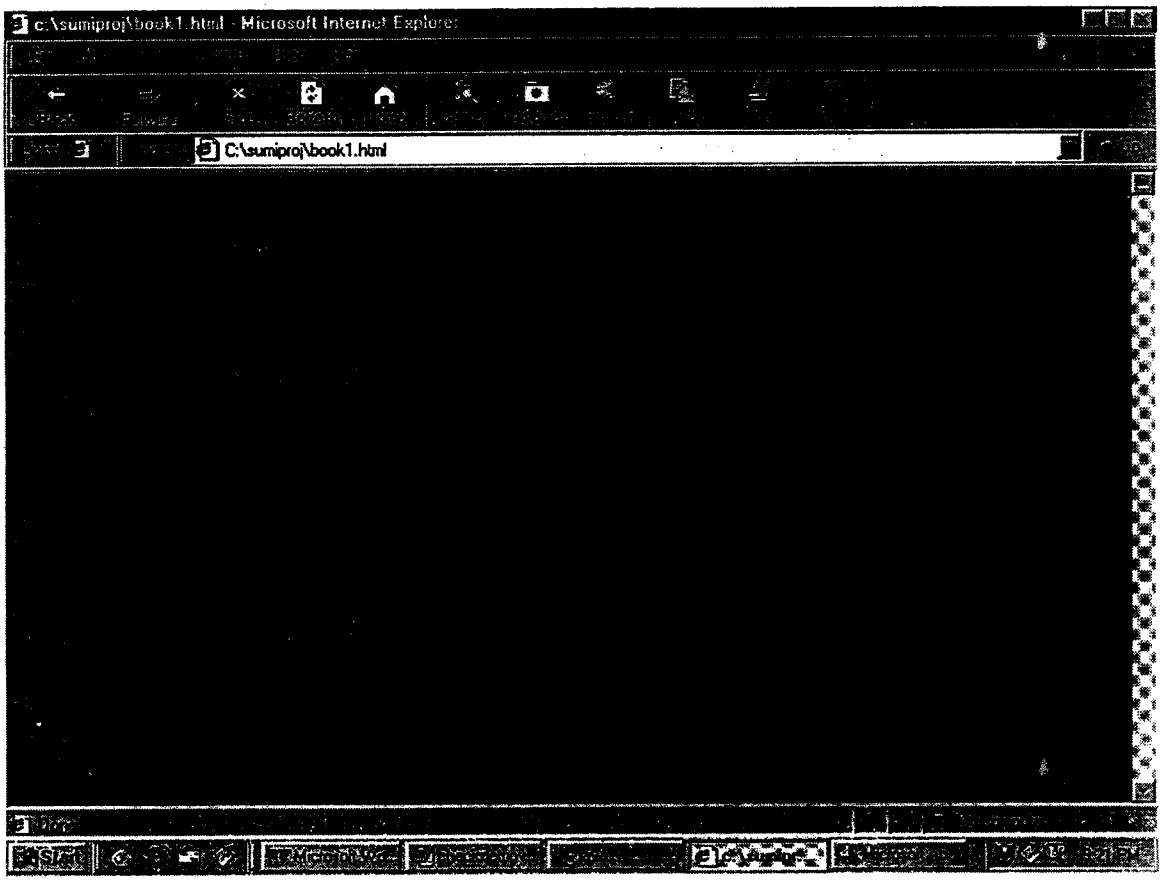
REGISTERED USER
divya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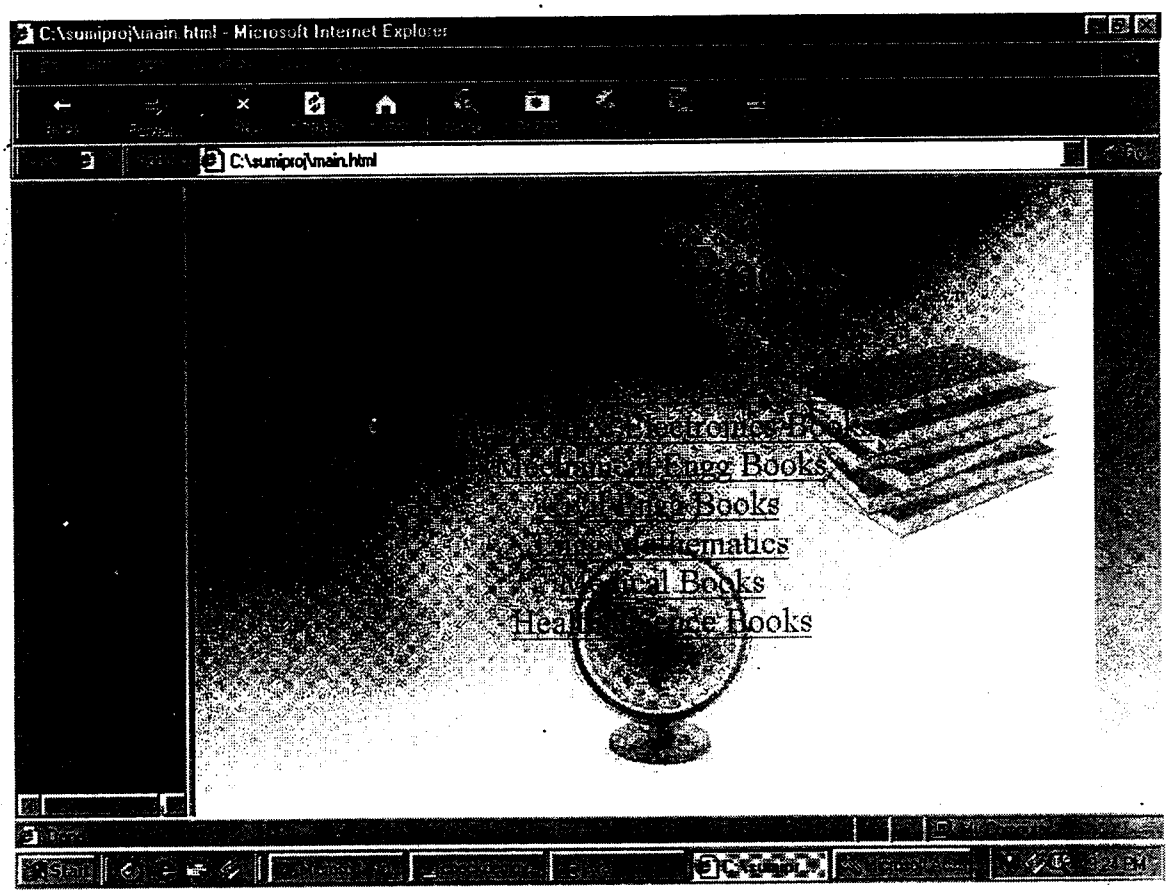
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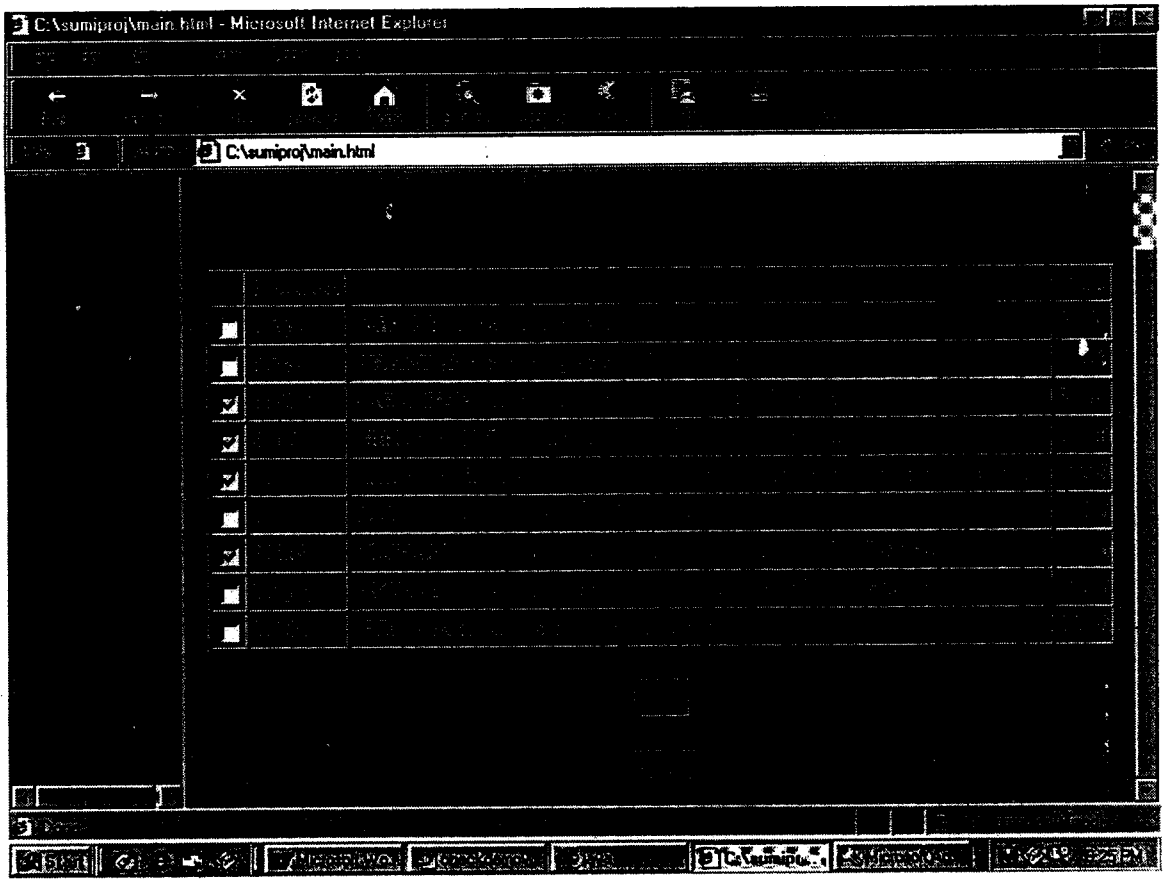
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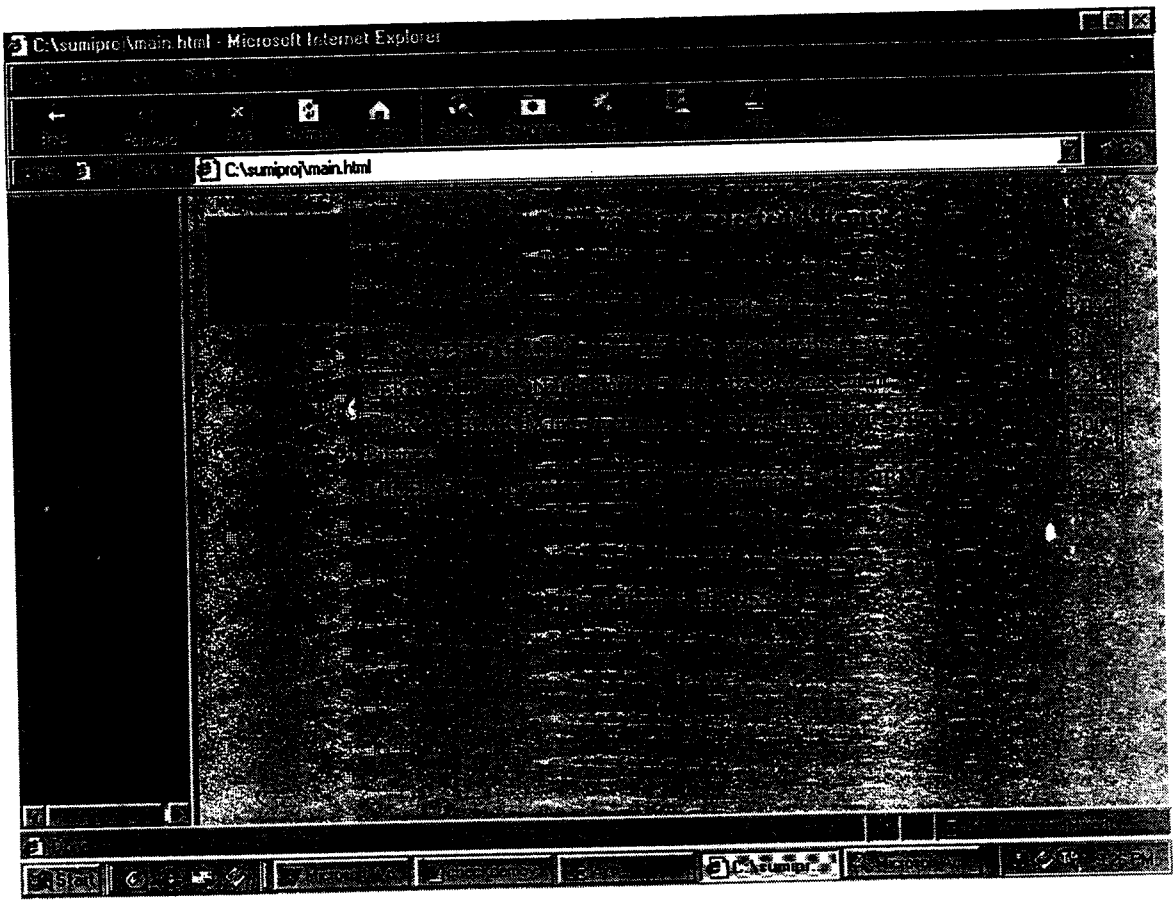
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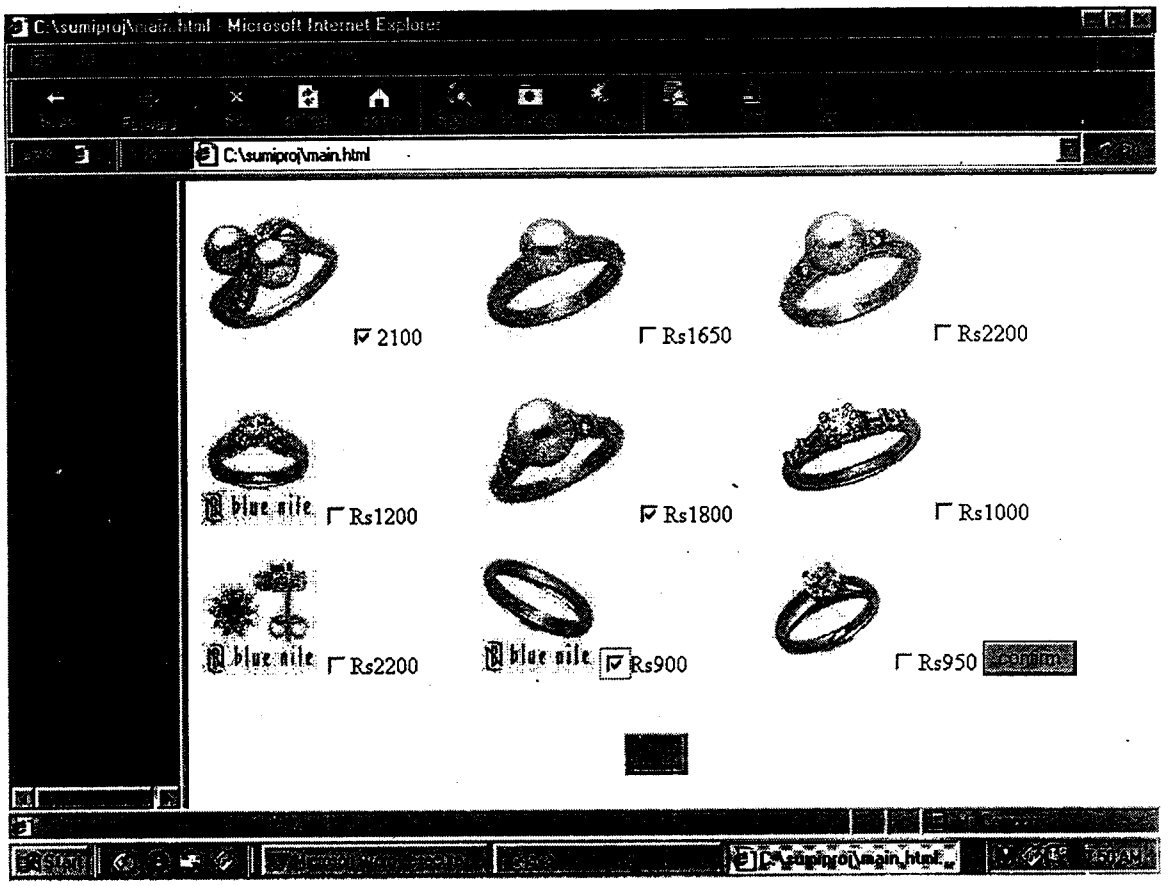
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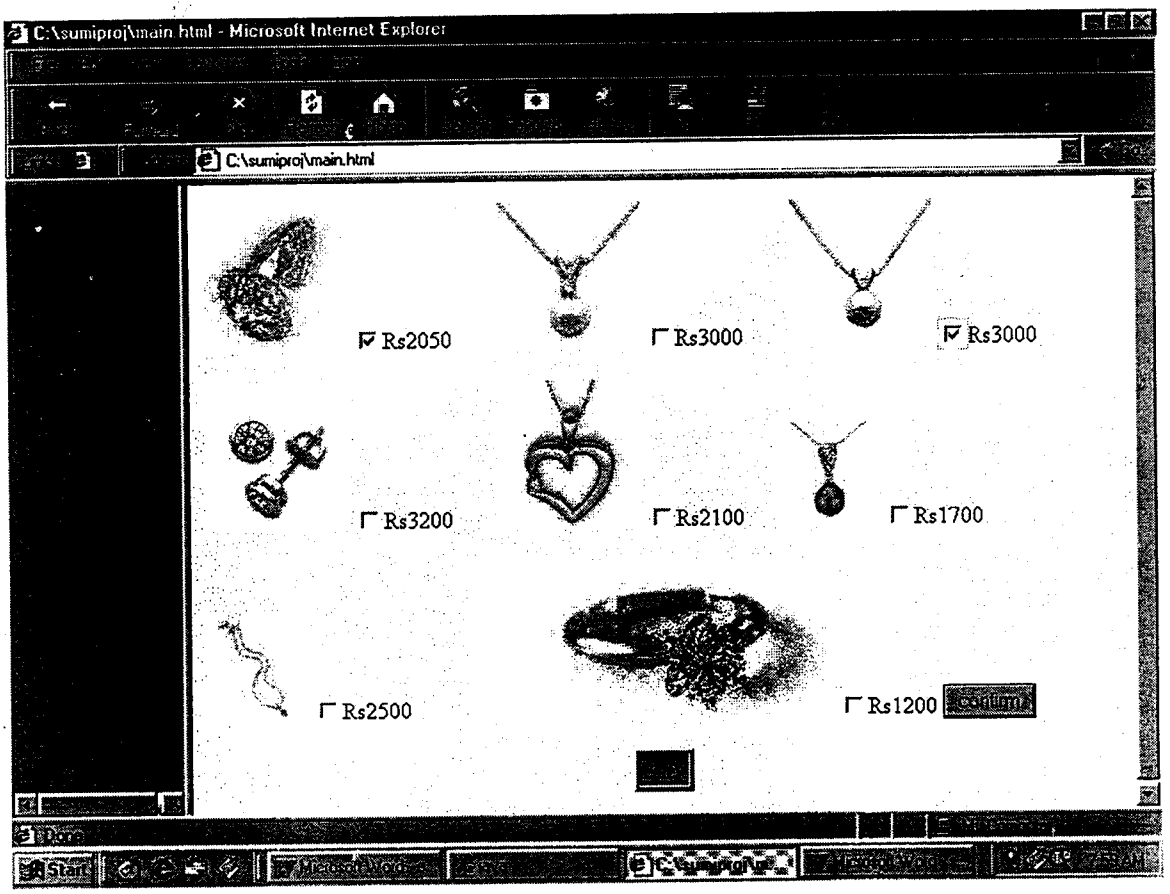
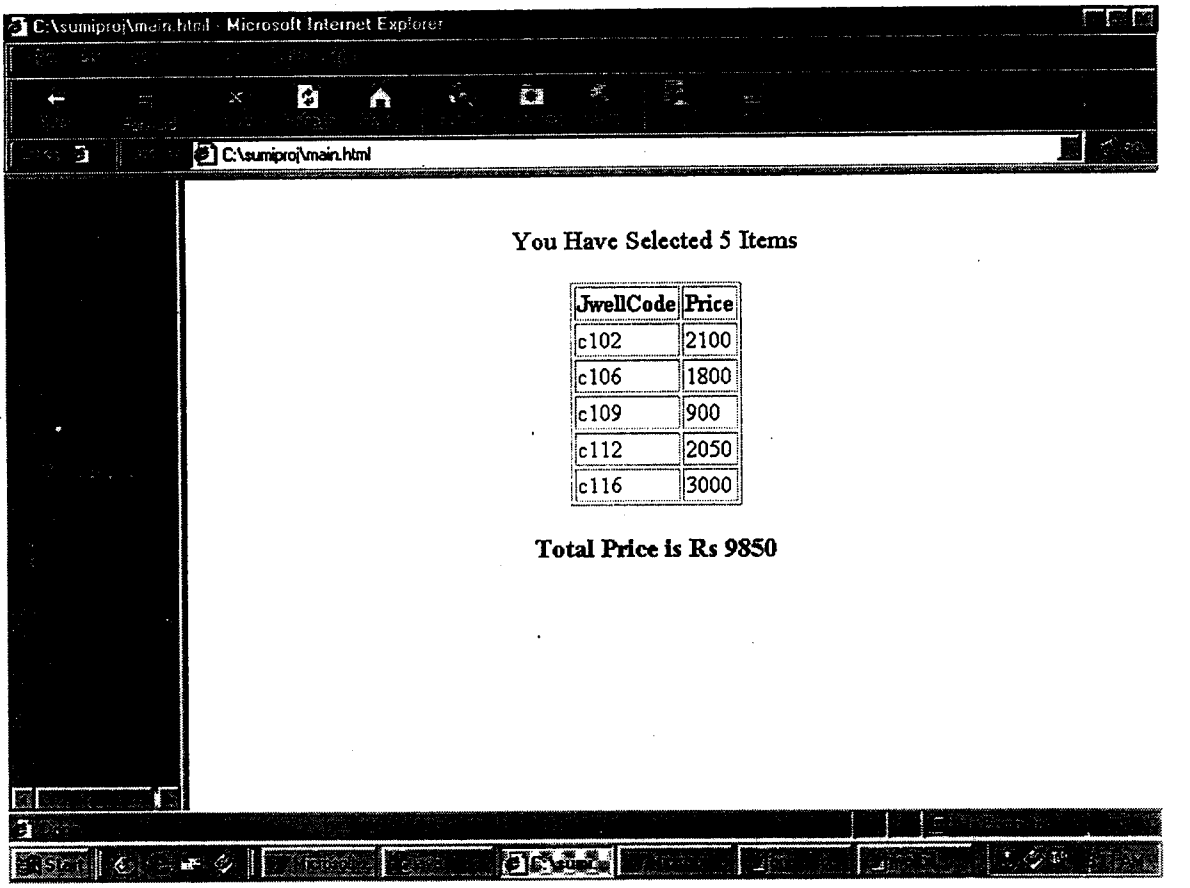
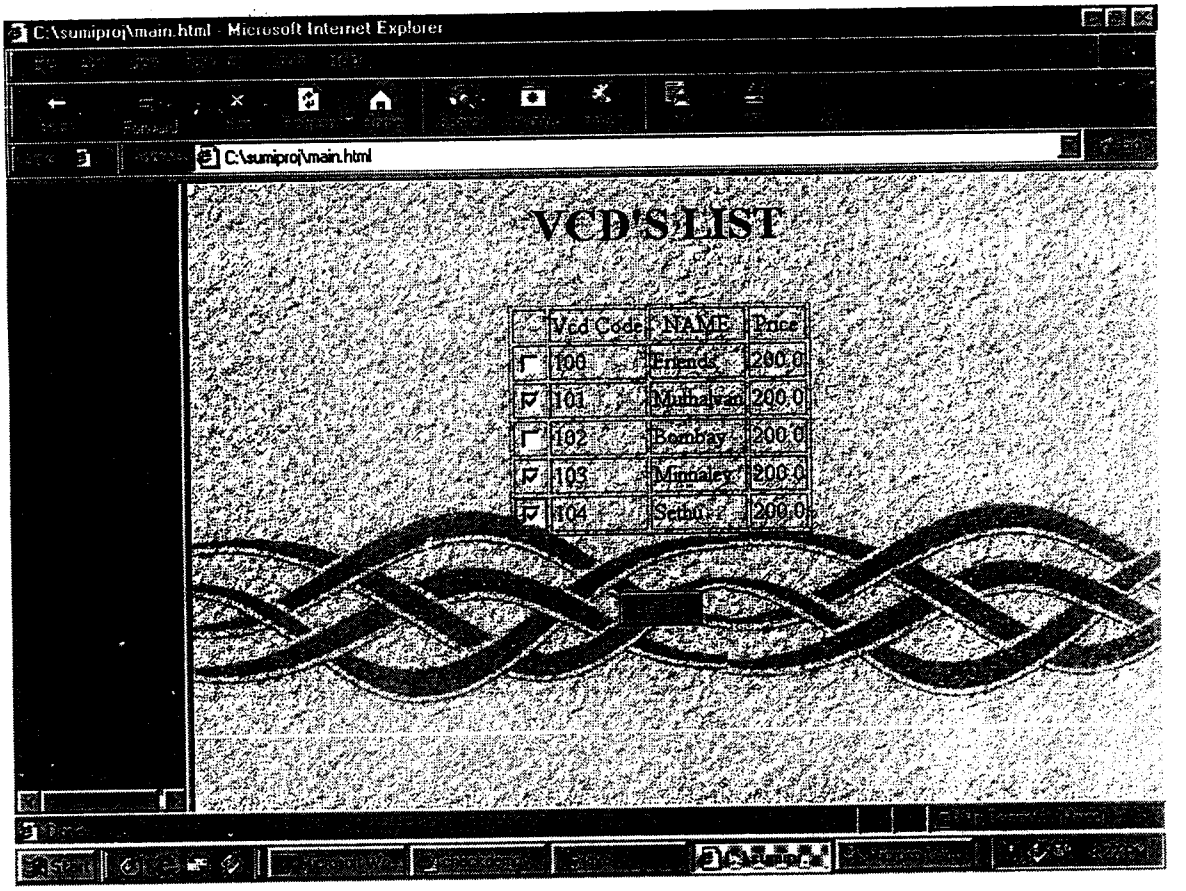
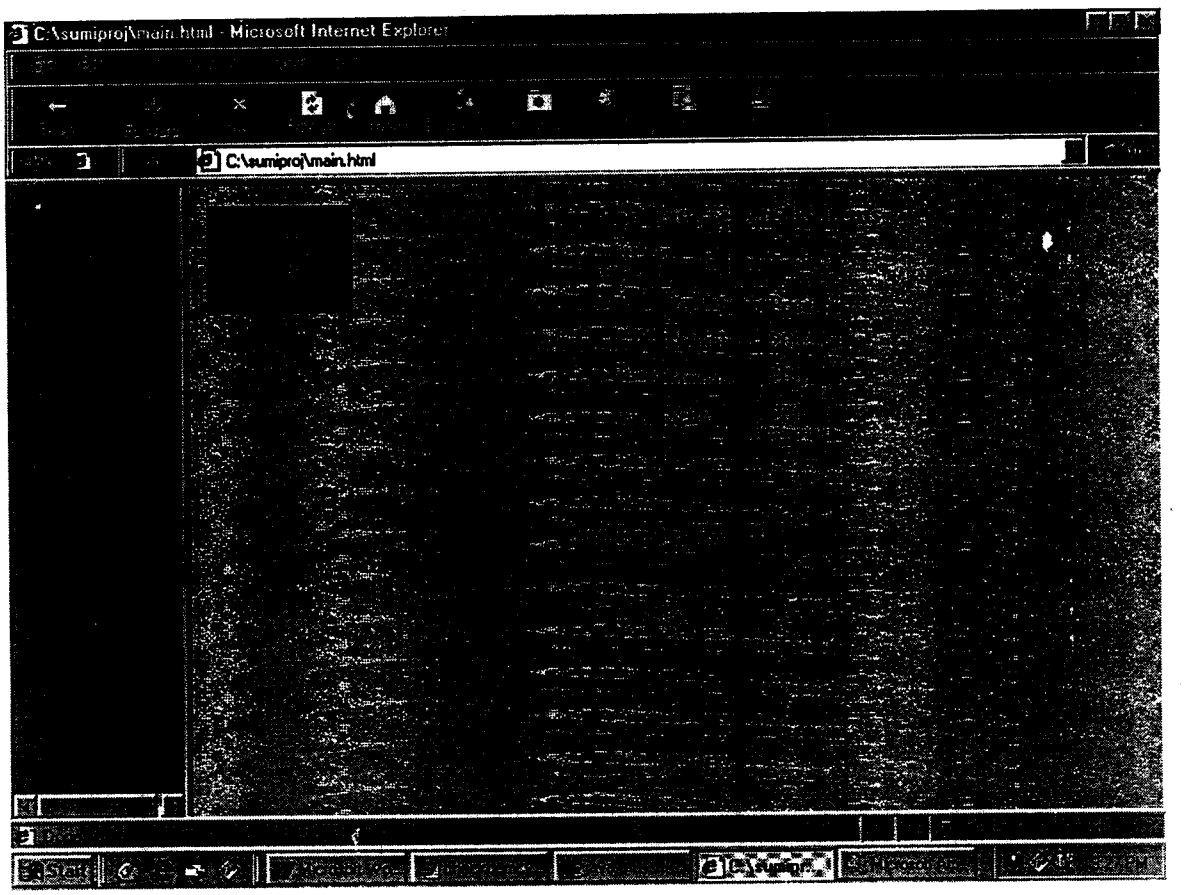
Rs950
Confirm


C:\sumiproj\main.html - Microsoft Internet Explorer
C:\sumiproj\main.html
Rs2050
Rs3000
Rs3000
Rs3200
Rs2100
Rs1700
Rs2500
Rs1200
Done


C:\sumiproj\main.html - Microsoft Internet Explorer
C:\sumiproj\main.html
You Have Selected 5 Items
JwellCode
Price
c102
2100
c106
1800
c109
900
c112
2050
c116
3000
Total Price is Rs 9850


C:\sumiproj\main.html - Microsoft Internet Explorer
C:\sumiproj\main.html
VCD'S LIST
Vcd Code
NAME
Price
100
Friends
280.0
101
Mumbai
200.0
102
Bombay
200.0
103
Ministry
200.0
104
Setbu
200.0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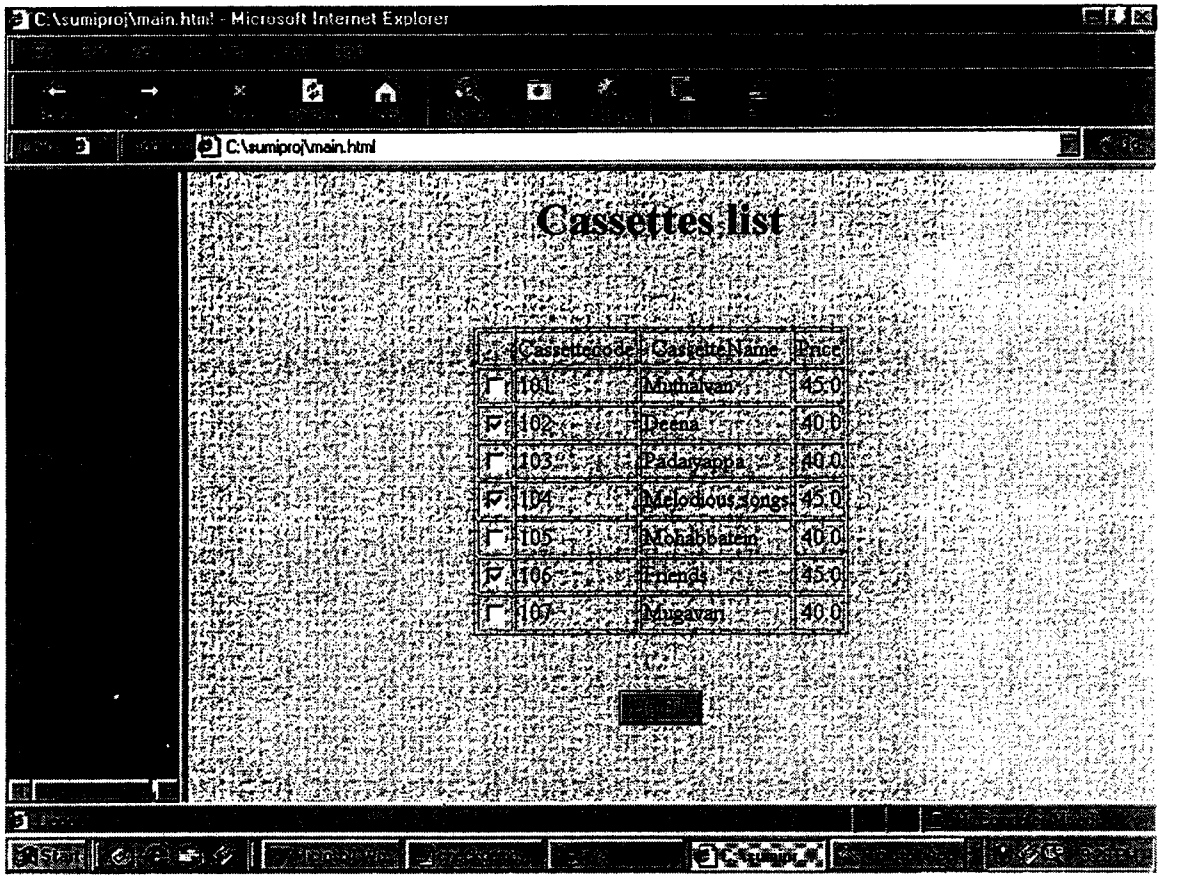
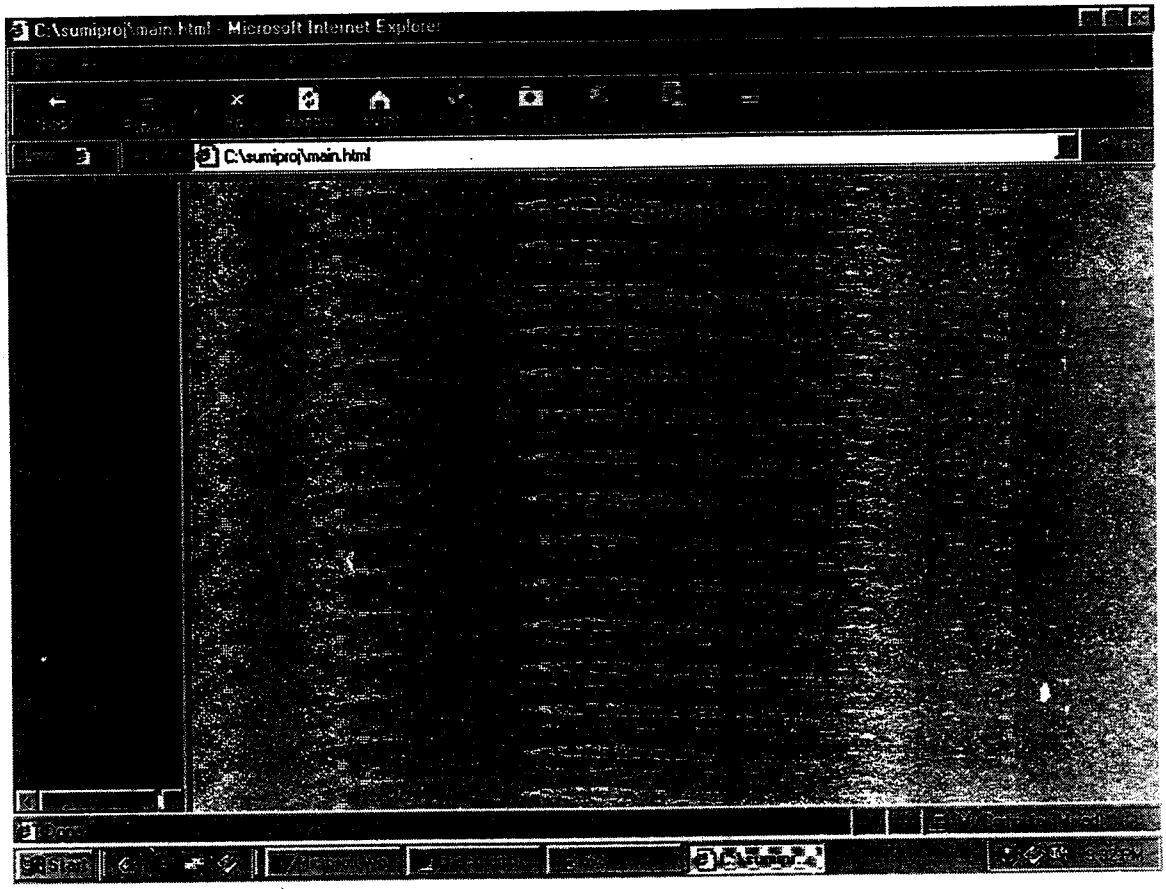
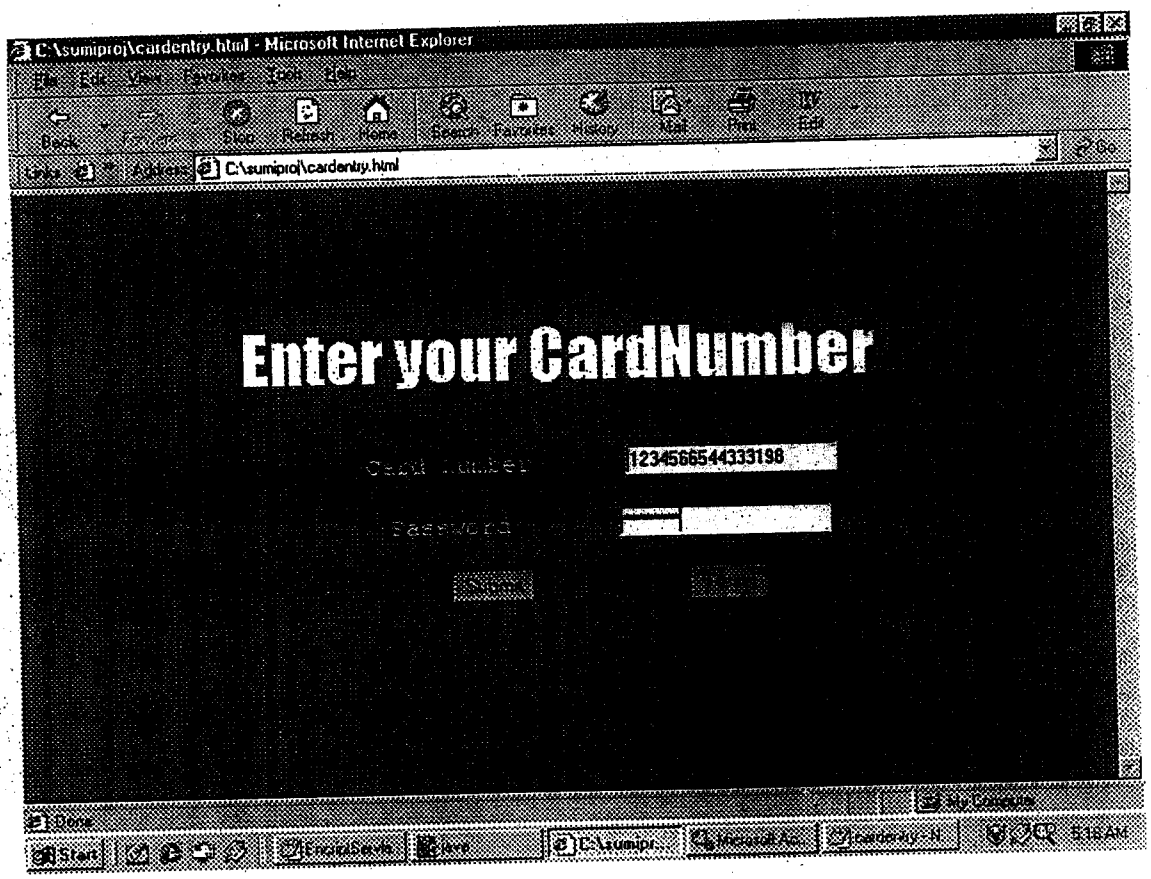
C:\sumiproj\main.html


C:\sumiproj\main.html - Microsoft Internet Explorer
C:\sumiproj\main.html
Cassettes list
CassetteCode
CassetteName
Price
101
Muthalvan
45.0
102
Deena
40.0
103
Padayappa
40.0
104
Melodious Songs
45.0
105
Mohabbatein
40.0
106
Friends
45.0
107
Mugavari
40.0
Start


C:\sumiproj\main.html - Microsoft Internet Explorer
C:\sumiproj\main.html


C:\sumiproj\cardentry.html - Microsoft Internet Explorer
C:\sumiproj\cardentry.html
Enter your CardNumber
1234566544333198