

ONLINE SHOPPING



Project Work Done at
Bharath Advanced Technologies, Coimbatore

PROJECT REPORT

P-597

**Submitted in Partial Fulfillment of the Requirements for
the Award of the Degree of**

**MASTER OF COMPUTER APPLICATIONS OF BHARATHIAR
UNIVERSITY, COIMBATORE**

submitted By

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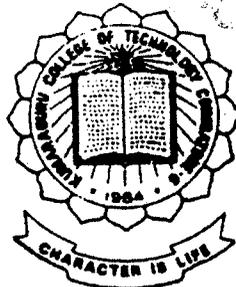
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MAY 2001

Certificate

This is to certify that the Project Work entitled

ONLINE SHOPPING

Submitted to the

Department of Computer Science and Engineering
Kumaraguru College of Technology

Coimbatore - 641 006

In partial fulfillment of the requirements for the award of the degree of Master of Computer Applications is a Record of original work done by Mrs. Priya. S, Reg No.:9838 M0511 during the period of study in the Department of Computer Science and Engineering, Kumaraguru College of Technology, Coimbatore under my supervision and this project work has not formed the basis of award of any Degree/Diploma, Associateship/Fellowship or similar title to any candidate of any university.

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Submitted for University Examination Held on 11/5/2001

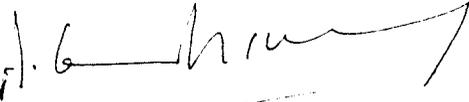
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Certificate

To whomsoever it may concern

Certified that this thesis “ **ON-LINE SHOPPING**” is the bonafied work of **Priya.S** who carried out the project under our supervision, certified further that to the best of our knowledge the work reported herein does not form part of any other thesis or dissertation on the basis of which a degree or award was conferred on an earlier occasion on this or any other candidate.

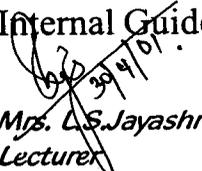


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Director

DECLARATION

I, Priya.S, Reg No:9838M0511, hereby declare that this project work entitled "**ONLINE SHOPPING**" submitted to the Kumaraguru College of Technology, Coimbatore (Affiliated to Bharathiar University) is a record of original work done by me under the supervision and guidance of Mrs.L.S.Jayashree , Department of Computer Science and Engineering.

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SYNOPSIS

E-commerce has forever changed the conventional business transaction. Electronic Commerce is a modern business methodology that addresses the needs of organizations, merchants, and consumers to cut costs while improving the quality of goods and services and increasing the speed of service delivery. The broad goals include reduced costs, lower product cycle times, faster consumer response, reduced paper work, increased automation and improved service quality. In this present world of E-commerce, organizations and individuals will from now on be doing their business at the press of a few buttons on their computer keyboard.

The project entitled “**Online Shopping**” is a web based application that has been developed under MS Access 2000 with Java Servlets for Bharath Advanced Technologies (BAT), Coimbatore.

The purpose of this project is to provide online shopping services, which include BAT jewelry and BAT fashion apparels. The objective is to enable the presence of these services on the web and integrate them into the web site, www.batindia.com and thereby publish it. This module is freely downloadable by all users but cannot be subject to any changes, without the formal permission of its developers, Bharath Advanced Technologies.

This project aims at providing online services and help to its registered customers and users. There are a group of products which are registered by the manufacturers and available online so that customers can buy their wished products. After selecting their products, the quantity is entered by the customer and the total amount is calculated. The customers can pay the amount with their credit cards and hence the products will be delivered to them in a particular course of time.

With an abundant increase in the number of customers, every shop find it mandatory to server their customers with ease. This system will server their purpose by enabling their presence on the web and facilitating their customers to avail their services, online. The system has tried its best to provide maximum user friendliness to its users and enable them to easily navigate through the pages of the web site.

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1. INTRODUCTION

1.1 PROJECT OVERVIEW

With the abundant increase in the number of customers, all types of stores, find it mandatory to serve their customers with ease. This system will serve their presence by enabling their presence on the web and facilitating the customers to avail their services online. The modules include a jewelry store and a fashion store. The definitions and objectives of the mentioned modules are as follows.

● **BAT JEWELRY**

BAT has a highly successful Jewelry shop with a regular database of wide amount of customers. The web site will process the user's, user id and password and the orders placed by them. It has two types of entries, regular and new. After allowing them, the site displays the list of items present in the store based on the category. The items selected are added to the shopping cart for final billing. The contents are checked and processed for billing. The payment has to be done with the credit card. The user can select the type of the card and finish the transaction. The item will be delivered safely to the user. The site also give special offers and alerts the customer about the new arrivals. It also includes a feedback page whereby the user can give suggestions to improve the site.

● **BAT FASHION WORLD**

BAT Fashion site offers a design updating page of all the designs currently held with their specifications. It attracts customers by announcing special offers. After allowing the registered user to the site, the user can navigate through the various items offered by the store. The users can select the required items and he is redirected to the page for final billing. The user can make the payment online and thereby finish the transaction. The item will delivered to the user. The site also alerts the customer with the latest arrivals.

◆ **THE DATABASE**

Since information processing, maintenance and retrieval forms the core of this system, Database forms its backbone. The importance given to the database maintenance is very high. MS Access 2000 has been chosen as the backend because of its flexibility more than its power and security. Since information needs to be updated or added frequently, sufficient provisions have been given for fast update and retrieval. Several security measures haven been taken during the access of the database. The package thus turns out to be flexible, reliable and dependable system.

◆ **THE MODULES**

The web site comprises of two modules. It has sub modules. The main modules associated with it are responsible for organizing

the system. These are finally integrated to form the full fledged system. The main modules are:

- BAT JEWELERS
- BAT FASHION WORLD

◆ THE FEATURES

The main features of the system are:

- Time sharing Database
- Integrated multi-user and enhanced graphical user interface
- Freely and easily downloadable and allows easy navigation
- Modular, reliable and dependable design
- Flexible, up gradable and easy to install
- Fool proof protection and security features with sound back up and recovery features

◆ DESIGN

The package is designed in such a way that modularity and reliability are given prime importance. *Modularity* has been

maintained from the start till the end and this is an important factor for the success of the project. The project is divided into independent modules with a clear line of the demarcation laid between them. *Reliability* comes through with the modular design. Enough emphasis has been laid in maintaining a high level of reliability. The tested during development itself the actual reliability can be fully realized in the long run with huge work load.

◆ INTERFACE

The interface of the system is designed carefully so as to provide maximum user friendliness. A comfortable user interface always reduces the strain on the user. Since many different types of users are expected to use the system for massive data entry process and other intricate data processing, prime importance is given to the user interface. The function available in the software should be invoked with least effort and minimal key strokes to speed up the operations performed on the system. These are facilitated by much familiar interface of windows 2000.

◆ FLEXIBILITY

Flexibility has been provided for the future scope to expand the system and for easy upgrade of the system for a later version of

tools and the operating system used. The installation process is allowed to take certain decisions about the installation of the system without a compromise to the security.

◆ **SECURITY**

The system security is facilitated with an in-built power of MS-Access 2000 for the back-end objects. The security at the front-end is also provided.

◆ **BACK-UP**

The data is given due importance in the system. Accidental deletion of data cannot render the system useless. Keeping this factor in mind, a strong back-up and restore facility has been provided in the system for the safety of data.

1.2. ORGANIZATION PROFILE

Bharath group of companies was started in 1949 as Bharath Engineering Works by the man of foresight, Mr. R. Arumugaswamy at Pollachi .

Bharath Advanced Technologies (BAT), a limb of the Bharath group was launched basically as a training center. As an add-on to its experience, BAT took the franchise of MDC Systems U.S.A, for its training. In a short span, BAT has grown in the field of information technology to numerous activities based on two major divisions **viz.** Training and project development.

BAT has got its own training division, which focuses on low-end training on a variety of languages and packages. The entire training methodology is based on the latest concepts in the IT field today. BAT concentrates on equipping its students to adapt to any platform and new technology. The center also believes in the concept of self-learning and survival of the fittest one. The BAT has an insight that INTERNET would dominate the world tomorrow.

BAT has got its own big project division. The projects are mainly classified into three areas of activity.

online without much added investment, i.e., doing business on the Internet without going for a new client-server package. The existing package is made to work on the web.

As the need for e-commerce is growing rapidly, BAT has solutions catering to almost all industry needs, ranging from hotels to lodging, net banking to remote area business management solutions.

◆ NETWORKING SOLUTIONS

The networking solutions that BAT provides range from multiple accesses of different operating systems by the same user from the same machine to RABMN and VSAT networking and extensively web enabled networking solutions.

2. SYSTEM STUDY AND ANALYSIS

2.1 EXISTING SYSTEM

Bharath advanced Technologies, being a company of a high quality and a company of great market value has decided to provide software, which facilitates people to gather information and shopping in no loss of time.

A few years ago, customers had limited choice of items and the searching for specific items was very tedious. They were more at the mercy of shop-owners. However, with ideas coming up from western countries, superstores have come up. Superstores or super bazaars gave customers more freedom in choosing items directly from the shelf. The idea of self-service in shopping came into being. This system has lead to more customer satisfaction.

Information gathering has always been a tedious task. It is very time consuming since the people have to navigate to so many places to get their needed information. It's not possible for a user to get latest information in a fraction of time. It could take hours or even days to collect the required information. Sometimes he might never get the information to his satisfaction. This has always been true with the manual system of gathering information. Also the information that he might get may be misguided or inaccurate.

Another important fact is that people have to waste a lot of time and effort when they go in for shopping . The user might not know the availability or exact details of the that he might purchase in the shop. Thus the user might get frustrated due to the exhaustive search.

It's not possible for the sellers to advertise instantly. It also becomes very expensive if he tries to do it through some media. Even though if he does, there are only certain media which can really spread the information in an effective manner.

Thus the amount of time spent by the user has no limits and he is finding it very difficult in the modern informative technology world. And also the task of accomplishing his need or to gather information through manual system leads to miscellaneous expenses and disastrous waste of time that are really unnecessary.

Another issue in shopping has been widespread usage of credit cards. Credit card payments were first used around 5-6 years ago when government legalized the same. Although people were skeptical about using the same before, the idea soon caught on. More and more people are using this convenient mode of payment. Security remains the primary concern of this type of payment.

DRAWBACKS OF CONVENTIONAL SHOPPING:

- The amount of items that may be available may be limited when compared to that in a virtual mall.
- The cost involved may be more in conventional shopping due to the traditional retailers and middle men.
- It is not possible to do comparison shop in conventional shopping.
- The component information may not be easily produced and it may lead to more paper based information transfer which can make the whole transaction look complex.
- Updated information is not made available.
- Sometimes, inaccurate and misled information are provided to user
- The user is not provided with the entire list of products when he goes in for shopping
- Advertisements are not beneficial and quite expensive.
- Time consuming.
- Very expensive.

2.2 PROPOSED SYSTEM

In order to solve the problems in the conventional system, the computerized system is designed using the latest web technology so that information required reaches the user quickly and effectively with out any constraints, in just a single mouse click.

The requirement imposed for the project by the client necessitates the software to have various features in each module, so that the software works with the desired performance.

This software enable the user to get himself relaxed and browse through all the latest information accurately and precisely based on his requirements.

The advantage of online shopping is that he is serviced with the entire list of products based on the category. Also, all the items are displayed so that the user can select items easily.

Through the above facility the user need not have to spend ample time to search. He has to just select the items and the total quantity he requires. The bill and the purchase orders are produced to him instantly and the order remains valid for two days. The bill could be paid through credit cards with in specified time.

ADVANTAGES OF THIS SYSTEM:

- 24 hour a day, 7 day a week service
- Wider range of products available to the customer
- Quicker service makes it a pleasure
- No time constraints for shopping
- The item information may be easily produced.
- The cost involved may be less than that in a conventional shopping since there are no traditional retailers or middle men.
- Provides customer with an option to compare prices. Gives the customer the best price available.
- Less paper based information transfer which can make the whole transaction look easier.
- Convenience in terms of payment modes-credit card payments.
- No overhead of having to go out physically to buy products.

2.3. REQUIREMENTS ON NEW SYSTEM

Before the development of the new system, we have to examine the problem clearly. The project development involves several phases such as:

- **Survey**
- **Designing the application**
- **Implementation plan**

★ **Survey**

- ✧ How would the customers like an online shopping experience?
- ✧ How much do they trust in credit card transaction across the web?
- ✧ How can we provide the fastest and best service on the web?
- ✧ What technologies to use?
- ✧ What are the facilities that can be provided to make online shopping a pleasant experience?

★ Designing the Application

This online site is available only for the registered users of the site. So the system must be able to distinguish between the new and registered user. The system must be able to accept registration details to allow a new user to register to the site. The user can register to shop and thereby login to the shop with the username and password.

Once he enters, he will be displayed with the items in the shop .Selection procedure is an inevitable part to place an order. The user can order by either searching for the item that he requires by using the search option or he can select from the items that are displayed to him.

The site must then be able to take orders from the customer. The order must be error free. So order must be checked at different levels and for different details like credit card etc. This site must also allow the user to take feedback and suggestions from the customer.

Let us summarize the facilities needed for an effective and smooth running:

- Register a new user.
- Login of a registered user.
- Display the items available to the shop.
- Search based on category.
- Ability to accept an error free order.
- Ability to take feedback from the user.

The various activities are carried out as follows:

➤ **Registration**

Connect to the site

Activate Registration

Allow the user to enter his registration details

Verify the details

Allow the user to register to this site

➤ **Login**

Connect to-site

Activate Login

Enter Login form

Verify Login information

Permit Login

➤ **Search**

Connect to site.

Activate searching.

Enter the category for searching

Search for required data

Display results of search

➤ **Order**

Connect to site

Activate the selection procedure

Allow the user to enter details in the order form

Verify and process order.

Generate the packing and billing details

➤ **Feedback**

Connect to site

Activate feedback/contact activity

Allow the user to enter the feedback form

Accept the feedback

There is an involvement of some form with which information needed by the server is transferred. Then there must be some server to server the need of the customer. The forms filled by the customer will received by a web server and will be processed. The

web server passes an error free form data to some storage location.
Database server is used as the storage location.

➤ **Customer and his associations :**

- ✧ The customer makes registration.
- ✧ The customer makes a login.
- ✧ The customer makes a search.
- ✧ The customer selects from the catalogue.
- ✧ The customer places an order.
- ✧ The customer fills the form and submits the order form.
- ✧ The customer is served by the server

➤ **Web server and its associations:**

- ✧ The Web server allows the user to login to the site.
- ✧ The Web server registers the customer to the site.
- ✧ The Web server searches the database.
- ✧ The Web server takes order from the customer.
- ✧ The Web server collects data from form.
- ✧ The Web server checks the data.
- ✧ The Web server takes data to database serv
- ✧ The web server collects data from the database server

★ Implementation

- ✧ Unit testing the individual components of the application
- ✧ System and integration testing of the application after integrating the Database, Business and Presentation Layers.
- ✧ Implementing the commercial Security Package for the security of the credit card
- ✧ Going Live

The online shopping site should be able to scour the web so that the shoppers can find the best price on products among the various product categories and among the various merchants so that the site can give them the most comprehensive and accurate comparison shopping found anywhere on the web-instantaneously. The online store is made a secure site when the credit card number of the shoppers is sent through the cyberspace. This is implemented using some of the commercial packages available for security.

2.4 USER CHARACTERISTICS

This site is for users who are familiar with browsing through Internet. Persons who are not familiar with browsing would find some difficulty for navigating through software. The software can be used by any novice users who needs to get the information about the items available in the market using the options that is being displayed and to those who needs shopping through the net.

3. PROGRAMMING ENVIRONMENT

3.1. HARDWARE CONFIGURATION

Processor	:	Pentium III
Clock Speed	:	@500 MHz
Main Memory	:	64 MB
Cache	:	512 KB
Hard Disk	:	8.3 GB
Floppy Disk Drive	:	1.44 MB
CD-ROM Drive	:	32x-Creative
Display Type	:	SVGA Color Monitor.
Mouse	:	Microsoft Mouse.
Keyboard	:	104 Standard

3.2. DESCRIPTION OF SOFTWARE AND PACKAGES USED

- **Platform: Windows 98**

- **Backend:**
Database- Microsoft Access

- **Client Side scripting:**
Packages - Microsoft Front Page
Languages- JavaScript and HTML.

- **Server side scripting**
Java Servlets

- ✘ **Platform-Microsoft Windows 98**

This system is developed on Microsoft Windows 98 operating system. Because of the popularity Windows 98 enjoys, it is a suitable choice for the operating system. Windows 98 is a highly user-friendly operating system and the main advantage of this popular GUI OS is the huge application base available over it.

A lot of front end and back end tools are available in the market of Windows 98. Also, the users are very much familiar with its interfaces that feel comfortable to work with it. This also reduces the amount of training for the users. These were the few reasons as for which Windows 98 was selected as the platform for the application.

✘ **Back-end:**

Database - MS-Access 2000

A database is a collection of data related to a particular topic. A database management system is a system that stores and retrieves information in a database. MS-Access is a relational database management system (RDBMS), which stores and retrieves information according to relationships defined. Access has the power to organize the data according to the subjects, so that the data is easy to track and verify and information can be stored about how different subjects are related and hence to bring related data together.

Within the file, divide your data into separate containers called tables, view, add and update table data using HTML pages; find and retrieve just the data you want using queries; and analyze or print data in a specific layout using IE. Access database can have several tables and a database can be designed so that it also stores information

about how the tables are related. Each piece of information is stored only in one place. That saves storage place by eliminating duplications. It makes updating information faster and more accurate, because to make a change only in one place.

MS -Access is an interactive relational database management system for Microsoft Windows. It is a powerful RDBMS. It supports multi user environment. It is User friendly. Access takes the full advantage of the graphical power in Windows, giving visual access to data and simple and direct ways to view and work with information. It provides visualized tools to define the relationship between the tables. Its powerful querying and connective capabilities helps you to find the information you want quickly regardless of format and location. An ACCESS database consists of tables that hold the data and all related objects such as queries, Forms and Reports that are used to manage the data. When you open the database window, it is called a database container because it contains all the objects that contain the database. Only one query is needed to work with the data stored in different formats and network locations.

➤ **Features of MS-Access 2000:**

- ★ MS-Access does not load software components that are not required for all the databases, until they are needed. This shortens

the time it takes a database to load and improves overall performance.

- ★ Access helps you to maintain the compiled state of a database even if you modify it.
- ★ Access can optimize bulk update queries for ODBC data sources by sending the query to the server, where all the appropriate records are processed at once instead of one record at a time.
- ★ MS-Access does not load modules, including form modules, until the servlet code in the module is executed. This improves overall performance.
- ★ Access has improved performance of embedded Activex controls. Performance analyzer wizard analyzes the database objects and suggests ways to make them fast as they can.
- ★ Access utilities can be used to manage database and their objects
- ★ It can attach a table from other database application so that access and other applications can be use it simultaneously

✧ **Client side scripting**

This is used for the presentation of the application. Client program enables the user to enter the data and pass data to server. Web Browser is an inevitable part of the client. It is a program used to explore internet resources. Examples are Microsoft Internet explorer, Netscape Navigator etc. Here, Microsoft Front Page Editor, Javascript, HTML are used for client side scripting.

- ☆ Packages:
Microsoft Front Page

- ☆ Languages:
JavaScript
HTML

Microsoft front page:

Microsoft Front Page is a web creation and management tool that requires no programming knowledge but is robust enough for experienced web site developers. Front Page has every thing you need to design and build a great looking, easy to navigate World Wide Web site. FrontPage includes the FrontPage explorer, where you create, design, and manage your entire Web site, and the FrontPage Editor, where you create and edit Web pages without needing to know Hypertext Markup Languages (HTML). FrontPage includes many features that make web site creation easy for any new user, such as gallery of professionally designed graphical themes, a full set of wizards and templates for creating pages and FrontPage webs, active page elements for providing complex functionality without programming and a tasks list for tracking tasks as you create your FrontPage web.

You use the FrontPage Editor to create, design and edit World Wide Web pages. As you add text, images, tables, form fields and

other elements to your page, the FrontPage Editor displays them as they would appear in a Web Browser. Although it is a powerful tool, the FrontPage Editor is easy to use because of its familiarity, word processor interface. There is no need to learn hypertext markup language (HTML) to use the FrontPage Editor because it creates all the HTML code for you.

JavaScript:

JavaScript originally supported by Netscape Navigator, is the most popular scripting language today. It lets you embed programs right in your web pages and run these programs using the web browser. JavaScript is an object oriented based scripting language designed primarily for authors constructing HTML documents for viewing under Netscape Navigator, Internet Explorer 3.0 and above. JavaScript maintains platform independence since its scripts are interpreted at the browser level.

Using JavaScript, you can:

- Create a user form that lets the user click on a displayed map.
- Design a web page that automatically displays a different thought provoking quotation.

Similarities to Java:

- Both Java and JavaScript use the same expressions for statements that execute arithmetic and logical operations, as well as those that perform string operations.
- JavaScript uses all of the control flow statements that are available within Java:
If ...else, loops, while loops, and for loops.
- JavaScript and Java were both developed to be languages for Internet. Security features are shared by both these languages.

Differences from Java:

- Unlike JavaScript, Java uses strict data types.
- It is different from Java in syntax and in use.
- Java source code is first compiled and the code is interpreted by the client. JavaScript code is not compiled but it is only interpreted.
- Java is a separate language that you compile to create bytecodes, and those files which browser can run, are stored separately from web pages. JavaScript on the other hand, is stored directly as a text in the web page, making it easy to work with.

HTML:

The Hyper Text Markup Language is the language of the World Wide Web. HTML is the language that you use to create web pages. Left to themselves, web browsers would take the text and images in your web pages and wrap them into what looks like a single paragraph without any line breaks. With HTML, you act much like an editor does, marking up a page to indicate its format, telling the web browser where you want a new line to begin or how you want text or images aligned or more. HTML is all about specifying the structure and format of your web page. Every document on the web is written in HTML, and all the document formatting, clickable hyperlinks, graphical images, multimedia documents, fill in forms are all based on HTML.

✘ Server Side Scripting:Servlets

A servlet is a generic server extension.- a Java class that can be dynamically loaded to expand the functionality of a server. Servlets are commonly used with web server. A servlet is a proprietary server extension, except that it runs inside a java virtual machine on the server. So it is safe and portable. Servlets solely operate within the domain of the server. Unlike applets, they don't require support for Java in the web browser. Servlets are well suited for enabling client server communication.

Servlet provide a Java TM-based solution used to address the problems currently associated with doing server side programming, including inextensible scripting solutions, platform-specific APIs, and incomplete interfaces. Servlets are objects that conform to a specific interface that can be plugged into a java-based server. Servlets are to the server-side what applets are to the client-side—object byte codes that can be dynamically loaded off the net. They differ from applets in that they are faceless objects (without graphics or a GUI component). They serve as platform-independent, dynamically loadable, pluggable helper byte code objects on the server side that can be used to dynamically extend server-side functionality. They create dynamic pages which are faster and cleaner than CGI scripts. They use a standard API (the Servlet API). They provide all the advantages to Java (run on a variety of servers without needing to be rewritten).

Attractiveness of Servlets:

Servlets are:

- Easily configured using the GUI-based Administration tool.
- Loaded and invoked from a local disk or remotely across the network.
- Linked together, or chained, so that one servlet can call another servlet, or several servlets in sequence.

- Called dynamically from within HTML pages, using server-side include tags. Secure-even when downloading across the network, the servlet security model and servlet sandbox protect your system from unfriendly behavior.
- Servlets can harness the full power of the core Java APIs: networking and URL access, multithreading, image manipulation, data compression, database connectivity, Internationalization, remote method invocation, CORBA connectivity and object serialization.
- Servlets are efficient and scalable
- Servlet code is clean, object oriented, modular and amazingly simple.
- Servlets are tightly integrated with the server. This integration allows a servlet to cooperate with the server in many ways.
- Servlets are portable both across the operating systems as we are used to java and also across web servers.
- They can expand any sort of server.

4. SYSTEM DESIGN & DEVELOPMENT

4.1 INPUT DESIGN:

Input design is the part of the overall system design that requires very careful attention and is the most expensive phase. It is the point of contact for the users with the computer system and so it itself is prone to error. If data going into the system is incorrect then processing and output will magnify these errors. Objective during input design are as follows:

- Produce cost effective method input.
- Achieve high-level accuracy.
- Ensure that input is free of ambiguity.

Several stages of our input design are:

- Data Recording.
- Transfer of data to input form.
- Data verification.
- Transmitting data to computer.
- Data correction.

The input design involves converting the user-originated inputs into a computer-based format. The aim of input design is to make the data entry easier, logical error free. It helps us to filter errors in the input data that otherwise entered into the database might have brought in a lot of inconsistency.

It involves procedures for capturing data, verifying it and then passing them on to the computers database. After choosing the input medium, attention is given to the careful design of input stages for error handling, controls, grouping and validation procedures.

During application development, care has been taken to make our system extremely user-friendly and organize our screens such that the possibilities of making errors are minimized.

List of possible values, list box, text area etc. are provided to the user for selecting the inputs. This makes the system less prone to errors as the input texts are to be selected rather than to be typed in by the users.

Alerts for wrong entries such as primary key duplication, letters in numeric data, wrong data format, range exceed have been provided in the application. Upon this, a well-documented instruction set and navigation maps, have been also provided for the non-frequent and first-time users to familiarize them with our web site.

Maximum care has been taken to ensure that users type in only minimum data into the system, as all he or she will have to do is to move and click the mouse or strike a key to select the desired data

Input Types:

One of the early activities of input design is to determine the nature of input data. The different types of input data handled by our system are:

- **External:** Prime input to the system.
- **Internal:** Communication with the system.
- **Operational:** Computer departments communicate to the system
- **Computerized:** Inputs to the computer media from the other internal Systems.
- **Interactive:** Inputs entered during a dialog.

Static Pages:

- Login Page
- User Registration Page
- Home Page
- Jewelry Catalogue
- Fashion Apparel Catalogue
- Fast moving item catalogue
- Feedback form
- Contact Section

★ Login Page:

This is the initial page of to give access to the valid members. This page asks for the User id and Password to enter the site. This also has an option to allow the new users to register to the site.

★ User Registration Page:

This page allows the new users to register to the site. The user is asked to enter his personal as well as login details to register himself as a member. Java script is used for validating the entries made in this page.

★ Home Page:

This the home page for the site. This gives hyperlinks to Jewelry Section, Fashion apparel section , Fast moving item section, Feedback & Contact Section.

★ Jewellery Section:

This displays the jewelry catalogue based on category The category includes earrings, pendants, bracelets, chains and rings. This page also displays the image of each of the jewelry item.

★ Fashion Apparel Section:

This displays the fashion apparel catalogue based on category The category includes saris, churidars, pant suits, doti suits, kurta suits, shararas and t-shirts. This page also displays the image of

★ Feedback Form:

This form gets the feedback from the user such that, improvements can be made in the design of this site.

★ Contact Us Section:

Batonline.com , a limb of Bharath Group of companies has a highly successful jewelry and a fashion store with a regular database of nearly 300customers. Their R & D Group is working day and night to bring in revolutionary changes in the field of information technology.

Within a very few years of establishment, this group has started many centers in India. The strengths for this massive growth of the company are the long standing relationship with the customers and commitment to the work they perform. They expect their customers to give their valuable suggestions for the improvement of the facilities.

Email: suggestions@batonline.com

★ Fast Moving item Section:

This page displays some of the fast moving items of jewelry and fashion apparel collection. This page also displays a search option whereby the user can makes a serach based on category.

4.2 OUTPUT DESIGN:

An inevitable activity in the system design is the proper design of input and output in a form acceptable to the user. Outputs from the system are required primarily to communicate the result of processing to users.

Outputs also provide a permanent copy of the results for later consultation. An intelligible output design will improve system relationships with the user and help in the decision-making process. The various types of outputs required by most systems are:

- **External Outputs:** Whose destination is outside the organization and which require special attention.
- **Internal Outputs:** Whose destination is within the organization and which require careful design because they are user's main interface with the computer.
- **Operational Outputs:** Whose use is purely within the computer department.
- **Interactive Outputs:** Which involve the user in communicating with the computer.

The approach to output design is very dependent on the type of output and nature of data. Special attention has to be made to data editing. The choice of appropriate output medium is also an important task.

The selection may be affected by the following kinds of considerations.

- Response time.
- Location of users.
- Cost.
- Software/Hardware.
- Suitability of the device for application concerned.

The output design must be specified and documented; data items have to be accurately defined and arranged for clarity and easy comprehension. The other two objectives that were taken care of were:

- The interpretation of the results of the computer part of the system to users in a form that they can understand meets their requirements.
- The output design specification is made in such a way that it is unambiguous, comprehensive and capable of being translated into a programming language.

Screens, which are a major form of output, are designed in various modules in the system. Screens generated are :

- User Registration acknowledgement Page
- Feed Back acknowledgement Page
- Search Results of jewelry based on category
- Search Results of dress items based on category

- Details Page for fashion dresses
- Cart display with the total cost of purchase
- Screen for Validation of Credit Cards
- Page for collecting the shipping address and messages if any.
- Bill of Items Purchased

★ Acknowledgement Page:

This page is to confirm the registration of the new user.

★ Details page for jewelry

This page displays the various details of the item. This also prompts the user to enter the number of item he wishes to add to the cart.

★ Details page for Fashion apparel

This page displays the various details of the item. This also prompts the user to enter the number of item he wishes to add to the cart.

★ Search Results of Jewelry items:

This gives the search results of the jewelry items based on category

★ Search Results of Fashion Apparel:

This gives the search results of the fashion apparel items based on category

★ Screen displaying the Contents of the Cart:

This page displays the contents of the Cart. It is here where the customer has to decide what he has to purchase. This page also has the option for removing the items from the displayed cart.

★ Screen for Validation of Credit Cards:

This page prompts the user to confirm his purchase by entering the credit card number .This site accepts credit cards such as Visa Cards, American Express & Master Card.

★ Details on shipping information:

This page gets the details such as shipping address and messages if any.

★ Bill of Items Purchased:

This will generate the invoice copy of the items purchased .

4.3. DATABASE DESIGN

Database design is one of the most important step in system design phase of system development. A good design of the database can reduce the problems like redundancy and anomalies and at the same time enforces integrities like referential integrity and domain integrity , etc.. Normally databases are implemented by Data Base Management System. The concept called Relational Data Base Management System (RDBMS) is easier to design a database that can enforce all the securities and integrities which leads to a secured and consistent database.

Database Management Concepts:

Databases are normally implemented by database management system (DBMS).

DBMS fall into two broad categories:

- Pointer-driven systems.
- Table-driven systems.

Pointer-driven DBMS uses techniques such as partitioning and training. These are normally host – language that use high-level language verbs coded within application programs. The design of database using such systems will have a crucial effect on the performance and flexibility of the end result.

Table-driven Systems are inverted-file systems that allow the user to setup and maintain a database , which may be searched using a wide range of different keys. These systems are generally straight forward to implement.

The users specify the records and fields, indicates which of the fields will be the keys, and supplies these parameters to the DBMS, which will then setup the database. The effort needed at the design stage is much lesser in this system than pointer-driven systems.

Relational Database Management Systems

In RDBMS , the data is organized consisting of rows and columns. There is an explicit pointer stored in the rows. Each table has unique name. To identify a particular row in a table, a column or combination of columns are used. This is called as the Primary key.

The relational model stores every information in terms of rows and columns of data. By storing this way the relation is automatically established and so in RDBMS, relation is implicitly understood.

There is no need to explicitly relate entities. This tabular form of representation forms the basis of implementation of relation in RDBMS.

Features of RDBMS:

Some of the features and advantages of using the relational model are :

- Redundancy can be reduced.
- Inconsistency can be avoided.
- Data can be shared.
- Standards can be enforced.
- Security restrictions can be applied.
- Integrity can be maintained.
- Conflicting requirements can be balanced.

An important step in the database design is the process of *Normalization*. It is the process of breaking up of data and storing them in tables in order to reduce redundancy. Though *Normalization* reduces redundancy of data, it is desirable to have some degree of redundancy in some cases. In such cases, we deliberately introduce some elements of redundancy for a highly improved performance. This can be regarded as *Denormalization*.

After analyzing all the requirements and inputs, the tables of the system are designed to store the data in a relational manner. Most of the tables in the system are normalized to the extent possible, but a few tables are denormalized in order to reduce the query time and the access time.

Indexes are formed on the combination of keys normally used in queries. The MS Access database maintains the indexes on primary keys or unique keys and uses implicitly whenever a query is fired.

TABLES:

The various tables used are:

- Registration details
- Jewelry Master
- Fashion apparel Master
- Jewelry category
- Fashion Apparel category
- Jewelry quantity
- Fashion dresses quantity
- Jewelry make
- Fashion apparel Brand
- Credit card
- Invoice
- Customer bill details
- Billed Items
- Feedback Details

Table Description

★Table 1: Registration details

Description: This records the customer details. Whenever a user registers, a record is entered here.

★Table 2: Jewelry Master

Description: This records the details of the various items available.

★Table 3: Fashion apparel Master

Description: This records the details of the various items available.

★Table 4: Jewelry category

Description: This records the categories of item available.

★Table 5: Fashion Apparel category

Description: This records the categories of item available.

★Table 6:Jewelry quantity

Description: This records the quantity .

★Table 7:Fashion Apparel quantity

Description: This records the quantity .

★Table 8:Jewelry Make

Description: This records the information about the various makers of the item.

★Table 9:Fashion Apparel Brand

Description: This records the information about the various brands of the item.

★Table 10:Credit Card

Description: This records the credit card details.

★Table 11:Invoice

Description: This records the invoice details.

★Table 12:Customer

Description: This records the order details.

★Table 13:Bill Items

Description: This records the bill details.

★Table 14: Feedback

Description: This records the feedback given by the customer.

Whenever a customer enters suggestions, a record is entered here.

4.4. PROCESS DESIGN

A detailed study of the existing system and its problem has been made, and an outline of the new system is drawn. A thorough study of the system revealed the structure of the databases involved. The tables were created after *normalizing* the fields to the maximum extent possible. Sample values were inserted into the database is designed and the various input and output modules are created, the various screens are designed, and thus the web pages. The necessary lists, messages, links, etc., are created for making the modules more users friendly. The web site has one master module and has different sub- modules. Of these some involves a lot of interaction with the users while others is more procedure oriented and does more internal processing.

There are two modules which are designed with functionalities like:

- New
- Add
- Find
- Modify/Update
- Delete
- Save
- Clear

The data manipulation and maintenance is done with the help of these functionality. They are all interfaced to the user with the help of buttons and can be accessed with mouse clicks. In order to make navigation through the site easier, navigational links are provided. Using them the surfers can move forward or backward through one or more pages with abundant ease.

All pages associated with the module have similar interfaces that are extremely user friendly . All facilities are easily accessible and shown explicitly. The utilities provided involve internal calculations and manipulations of data. But these intricate details are transparent to the user thus providing both data and logical abstraction.

In all reports, the data required for the report generation is accepted and with these the appropriate database tables are searched. The selected data is filtered into a form acceptable by modules. They are often moved over to the work tables and the reports are generated on the data from the work tables.

The activities at hand are:

- Login
- Registering
- Search
- Order
- Feedback
- Contact

★ Login

A static page is provided for allowing the user to enter his username and password. Login will start with the connection to the site. Fill the login form and submit the form. If the form is error free , browser will submit the form. An HTTP request is sent to the web server. Web server receives the request and collects the variables and values. Then it will create a query and execute the query with the database server. The Query result is sent back as an HTTP Response. If the result is not an error the login will be permitted. Otherwise user will be prompted to fill the login form again and continue the process.

★ Registration

A static page is provided for allowing the user to enter his login and profile information. The customer fills the form with requested details. The form will be checked at the client browser by scripts and form is submitted. An HTTP request is send to the web server. The web server receives the request and collects the form data. A query is created to check whether any duplicate login information exists in the database. If there is any duplicate information, an HTTP response will be generated and sent to the client browser. This displays an error page prompting the user to re-enter the registration details. Otherwise the database is updated with the new user's registration information. The server sends a response to acknowledge the user's request for registration.

★ Search Activity

Examining the Search activity there must be a result for the search. We can form a well formed servlet which displays the results of the search. But results doesn't need any updating. Searching is done based on category. The user can select the category based on which search is to be performed. The HTTP request is sent to the server. The web server collects the information and creates the query. The query will then be sent to the database server which fetches the required information and sends a response to the server. With this web server will redirect to the required page.

★ Order Activity

In case of order activity the process is slightly complex. Were I needs timely updating since server has to process and reply back to the client. To carry out this activity , available item must be displayed. The user also has the option to search the database based on category. The first process in this activity is connecting the user to the shop site. The user must login to the site. The access is restricted to the registered users. After successful login, the user can view all the items available. The user can also search based on category. The selection must be done before the user can proceed to ordering activity. The user can make a selection by activating the add to cart process by clicking a button. The request is sent as an HTTP request to the web server.

The Web server checks whether the quantity is available or not. If the item is available the user can specify the number of items to be added to the cart. Once items are added, the user can view all the items that are added to the cart. Once this is over, the user can confirm his order. When this order is submitted, servlet will be generated to check this for errors.

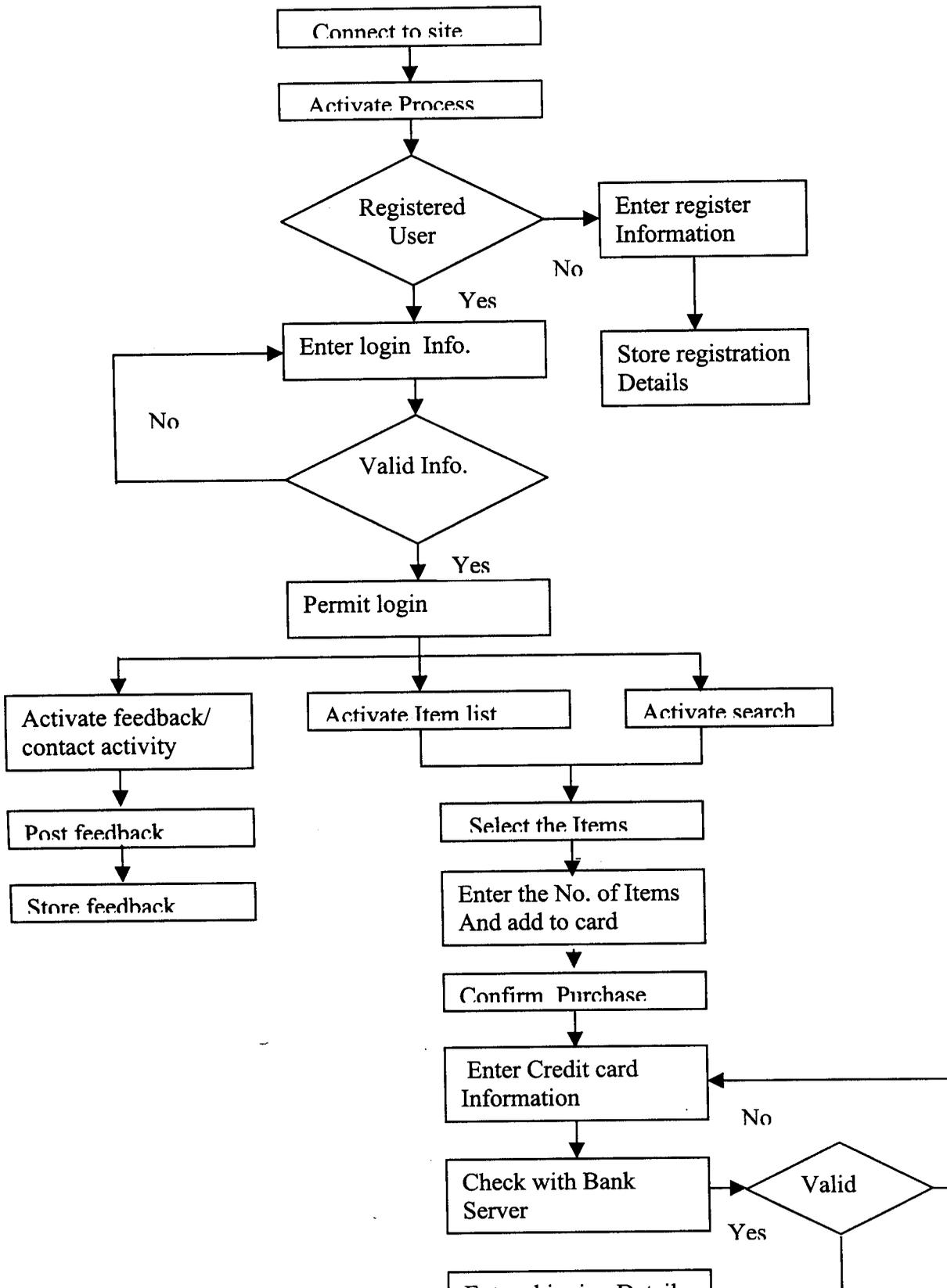
The servlet will create an HTTP request which will be sent to the web server. The web server accepts the request. It collects the data and proceeds to the credit card form which will accept the credit card details. This details are collected from the customer by the server and it will call some external service to access bank database to check the status of the credit card. Since security is a big issue in online payments, the credit card is sent through secure socket Layer (SSL). SSL is an encryption protocol built into current browsers and supported by most Web servers. SSL is enabled and Web page references are changed to https:// instead of http://. Thus the credit card details sent will validate the status of customer's payment data. A response will be sent to the server depending on the status of the credit card.

Once the payment activity is over, the user can proceed to the form which accepts the shipping address and other information. This information are accepted and the database is updated with these details. after updating the database , servlet is generated to display the bill.

★ **Contact / Feedback Activity**

Through this activity, the customer can send the suggestions and feedback to the administrator. He can either send a mail or can submit it online through the form available in the site. Based on the suggestions, the administrator can check whether any new enhancements can be made for the site.

Process flow Diagram



5. SYSTEM IMPLEMENTATION AND TESTING

5.1 SYSTEM IMPLEMENTATION

A crucial phase in the system development is the successful implementation of the new system. Implementation is the process of converting a new system design into an operational one. This involves creating computer compatible files to store the data, converting the data flow diagrams into coding and documentation.

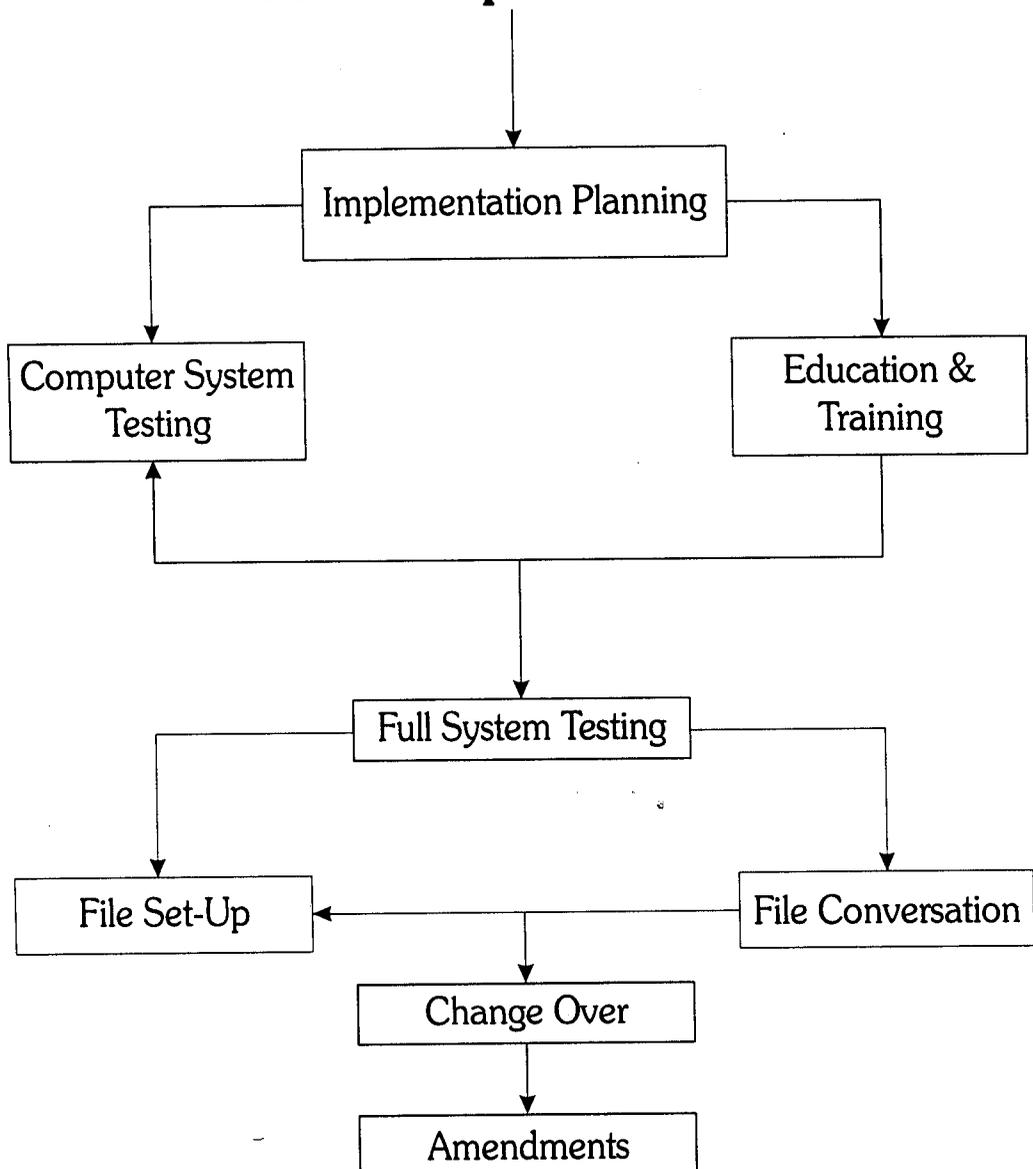
Implementation is the stage of the project when the theoretical design is turned into a working system. At this stage the main workload, the upheaval and the major impact on the existing practice shifts to the user department. If the implementation stage is not carefully planned and controlled, it can cause chaos. Thus it can be considered to be most crucial stage in achieving a new successful system and in giving the users confidence that the new system will work and be effective. Implementation involves careful planning, investigation of the current system and its constraints on implementation, design of the methods to achieve the changeover, training of staff in the changeover procedures and evaluation of

changeover methods. The first task is implementation planning, i.e., deciding on the methods and time scale to be adopted.

Once the planning has been completed, the major effort in computer department is to ensure that the programs in the system are working properly. At the same time the user department must concentrate on training user staff. When the staff has been trained, a full system test can be carried out, involving both the computer and clerical procedures. Education involves creating the right atmosphere and motivating the user. Staff education section should encourage participation from all sides.

The analysis and design is converted into implementation with the help of language coding conventions. The depth of implementation is found out with the help of output from the implemented software. The main source for testing its accuracy is with the help of testing methodologies.

Task of Implementation



Implementation task of the project includes integrating and implementing the various activities that are required for the smooth and effective running of the system. The various activities include

- Login activity
- Registration activity
- Search activity
- Order activity
- Feedback/contact activity

The various activities are carried out with well formed servlets which interacts with the server by creating requests and response. The Database server is used to store the data. The output screens are generated as and when required corresponding to the input given.

5.2 SYSTEM TESTING

The system on a whole were tested for the following:

- Validation of inputs
- Referential integrity test
- Sequential tests
- Consistency of the application

System testing makes a logical assumption that if all the parts of the system are correct, the system will be successfully achieved. The objective of testing is to discover errors. To fulfill these objectives a series of tests were planned and executed.

Software testing can be looked upon as one among many processes. This is the last opportunity to correct any possible flaws in the developed system. Software testing includes selection tests data that have more probability of finding errors.

System is the stage of implementation that is aimed at ensuring that the system works accurately and efficiently before live operation commences. In principal, system proving is an on-going activity throughout the project.

The logical design and the physical design should be thoroughly and continually examined on paper to ensure that they will work when implementation should be a confirmation that all is correct and an opportunity to show the users that the system works.

The first step in system testing is to develop a plan that tests

all the aspects of the system. Completeness, correctness, reliability and maintainability of the software are to be tested for the best quality assurance-an assurance that the system meets the specification and requirements for its intended user and performance. System testing is most useful practical process of executing a program with explicit intention of finding errors that make the program fail. The following phases were developed.

★ **Module Testing:**

Each individual programs module is tested for any possible errors. They were also tested for specifications, i.e., to see whether they are working as per what the program should do and hoe it should perform under the various conditions.

★ **Concurrence Testing:**

Since the system is a mutli-user it was tested for concurrence problems. The system worked perfectly since the table locking and other security measures were taken with care by the database itself.

★ **Login Testing:**

The login process was tested with both authorization and unauthorized login.Access was denied for invalid login ids and incorrect passwords. Passwords were changed and addition and

★ Insert/Update Testing:

The insertion and updations were tried on all tables in the database. Checking was done to see whether the corresponding entries were made in the different tables when a new record was created. Updation of non-existing records and duplicate values were tried. The system was found to check and disallow invalid attempts.

★ Display Testing:

The display procedures were tested since the data displayed is of much importance. The data was input in the different modules and it was checked whether the information is properly displayed in the other dependent modules. The consistency of the display and attractiveness of the display were also tested.

A testing is an examination with the intent of finding the errors. Concentration was more on errors than resting on the glory of apparently perfect outputs. Comments and suggestions from the reviewers during the test run were later considered. Special care was given to user interface comments. The list of possible values, the attractiveness and user-friendliness of the software was well appreciated.

★ Unit testing:

Here, each individual program was tested using the test data. The outputs as per the requirements were found satisfactory. Thus it was possible to conclude that every program in the software was

functionally correct. The interrelated modules were also tested in an exhaustive fashion that will make the whole software work properly.

★ Integrated testing:

The individual programs are combined together to form modules. Integrated tests were performed on each of the modules and again the validity was checked. After that, all modules were brought under a single module and the integrity test was found to be successful.

This system was validated in such a way that even the slightest deviation in inputting the data will invoke error messages and provide guide lines regarding the input. Before the software is being released, testing is done by the developers to by implementing the commercial security package for security. This ensures that the software works properly.

5.3 REFINEMENTS BASED ON FEEDBACK

The feedback from the operators of the system and all visitors of the web site is of great importance since it is they who are ultimately going to use the system. This particular web site that has been developed has a large user base that are well educated and are capable of recommending valuable suggestions. A positive approach was made to all the suggestions made by the technical and non-technical reviews of our project. All the valid suggestions were taken into account and solutions were made found for them. The reasons for discarding the other recommendations were properly examined.

A change in the design of the site was requested. After a detail discussion a more attractive a user-friendly interface was implemented. The search facility was included for searching the items based on category.

The feedback that we received from the viewers of our project were very encouraging and appreciative, their suggestions were made worthwhile and so also were to be seriously considered. To improve our web site even after its implementation, we have included a feedback page with all modules developed. User comments and suggestions are most welcome.

6. CONCLUSION

With the birth of the new millennium the emergence of the World Wide Web as a major communication medium will lead to a surge in the database of web pages and web sites for myriad applications. This would in all certainly lend a new perspective to the futuristic concept of shopping.

The Web site has been developed and the stated objectives were achieved. All the operations are invoked with the click of a mouse or with a combination of minimum keystrokes, making the users feel the ease of operation. The development and publishing of the site on the World Wide web needs substantial effort from the developer's side.

The project has been developed to take care of the customers and extend help to them. This has removed the difficulty of the customers personnel visit to the shop and has brought the shops to their home through internet. Thus this site plays a major role in a customer's life and provides information to all those who visit the site.

The past few years have seen a number of portals or web-sites building online shopping centers. These centers provide customers with a variety of items and also allow the customer to search for specific items. The payment modes are also very flexible such as- credit cards

Of course, the digital shopping centers could fit in the convenience

couple of negative points to this viz. one had to wait for the delivery of the item. And also, If the product delivered suffered in quality, the customer had to go through the hassle of returning it which entailed a waiting period of few days, weeks and sometimes running into months. But, with guarantees and assurances of adequate compensation given by the site regarding products, it would definitely be acceptable to customers .

Maximum justification has been done to the master module in the allotted time span. The system gave the results as it was proposed in the earlier stages and it was designed in such a way that it could be enhanced in future with no problem. This project is expected to cater to the requirements of all users at BAT and the future visitors of this web site.

The design and development of such a real time project concerned with Web Design and Publishing has been really a wonderful experience for me. I discovered new and interesting facts in the world of Internet, increased my degree of skills of programming, gained immense knowledge on the Web designing and got well exposed to the really powerful scripting environment. I had an excellent first hand experience under the guidance of able and experience scholars in a reputed concern like Bharath Advanced Technologies that turned out to be very interesting and informative.

7. SCOPE FOR FUTURE ENHANCEMENT

The project has been completed successfully and all the requirements have been met. However, the possibilities for renovation are infinite and scope for development innumerable. The project is designed in such a way that innumerable amount of updated information can be added to, if required, without redesigning the software.

Future extensions can be made in order to provide more options like Auction facility, Mail Facility and chat facility.

Another enhancement that can be made is providing more security to the users since security is a big issue in online payments. This is achieved using a 'trusted third party' which begs its own questions. The TTP is a public company which provides a vendor with a digital certificate. This confirms to the customer that the company they think they're dealing with is who it claims to be. Digital certificates can be bought from many companies including Verisign .

The site can also be extended to support multiple payment instruments including purchase cards, debit cards, electronic checks and ACH payments. It can be enhanced to provide back-end connectivity to all leading payment processing networks .

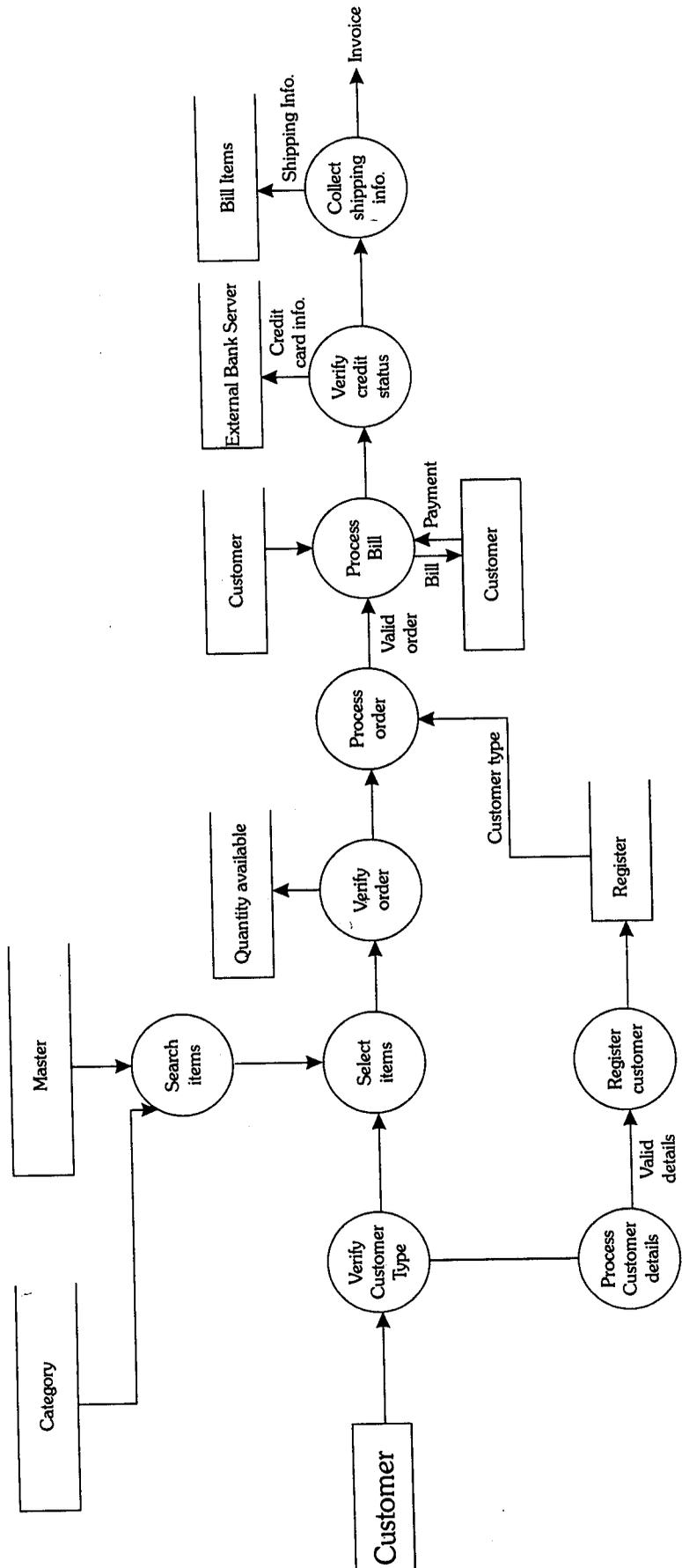
The application of web in the chosen areas is becoming an absolute necessity in the present day environment. The need for faster

great extent but to say whether the system can satisfy all the possible options in the areas concerned is actually very difficult, as the fields taken into consideration do not have rigid definitions. But the system is extremely adaptive to all such situations that may arise in future.

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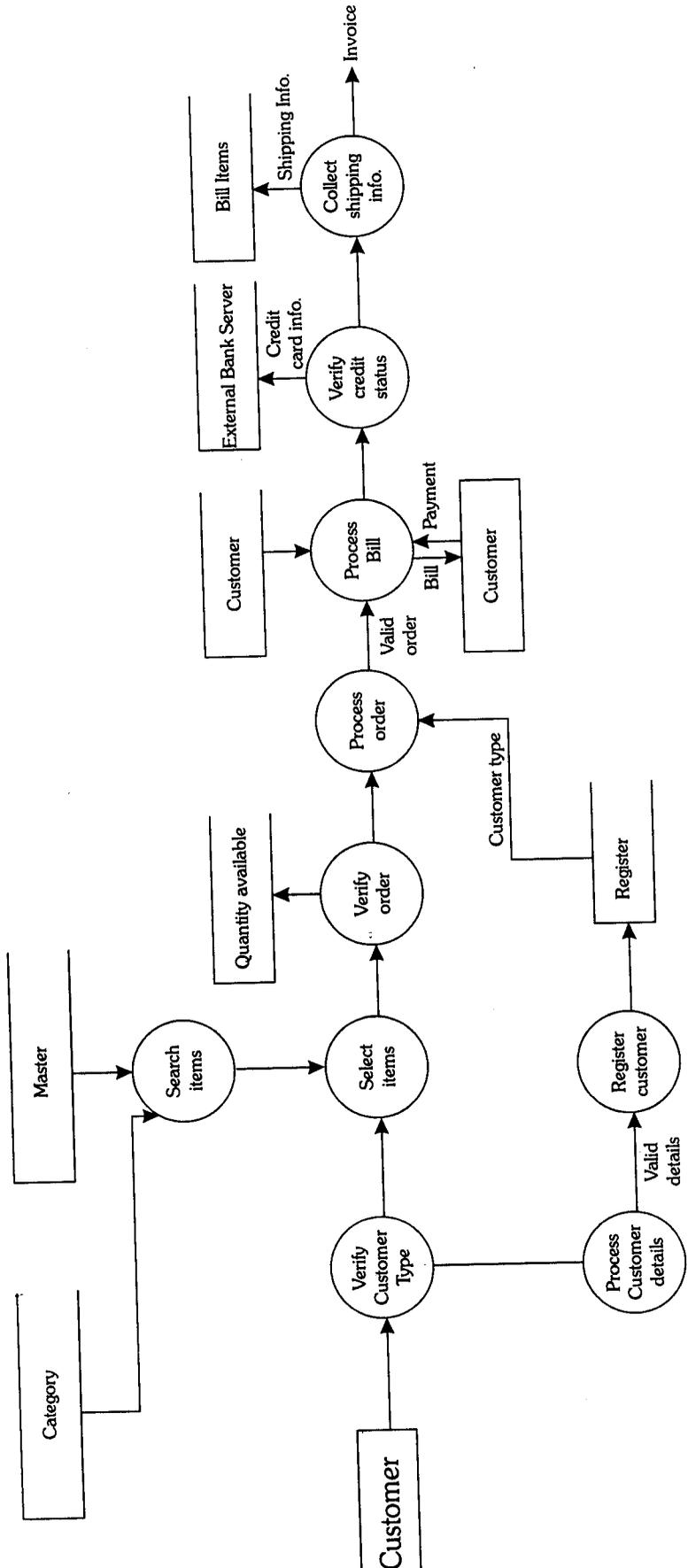
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BAT JEWELRY



SCREENS

BAT FASHION WORLD



Please fill in the form completely below to enable us to process your order.

1. Select a payment method.

We accept VISA, MasterCard and American Express. Please select the credit card and type in the number.



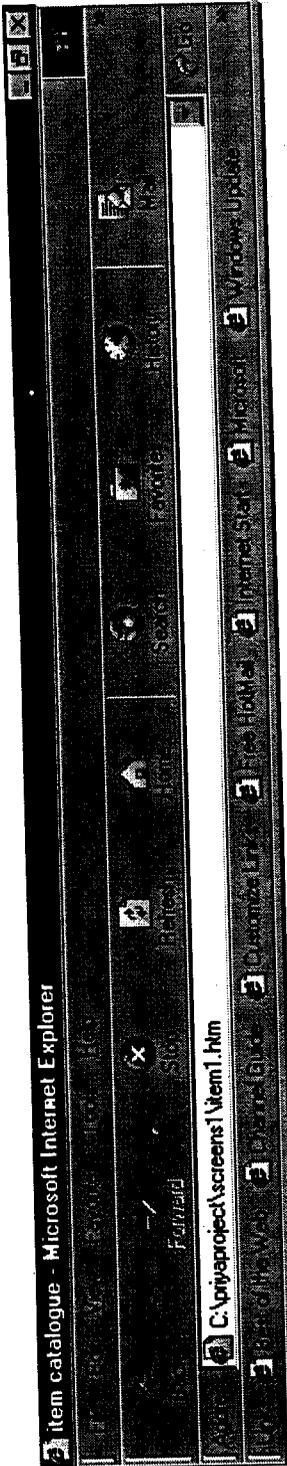
Credit Card Number : 1234675678907890

Enter the Password :

2. Personal details for billing.

Please enter your name :





1. Please Enter Your name and email address where the item should be sent.

Priya
Priya_warrier@hotmail.com

2. Please type in any message, which will be printed on the packing slip :

Wish you a very Happy Birthday

IMPORTANT: Press this button to to the next page.



CONTACT US

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INDIA .

Mail us at :

suggestions@batonline.com



Forward

C:\JavaWebServer2\0\public_html\Feedback1.htm

Feedback Form

Name

vaishnavi

Registration ID

vaishna

@batonline.com

Suggestions

Very good site!
Please add more categories

Submit

Reset

Forward
<http://localhost:8080/servlet/feedback1>

Business Link | Local Home | Microsoft | Winos Update

Thank You for your valuable suggestions for our improvement.

