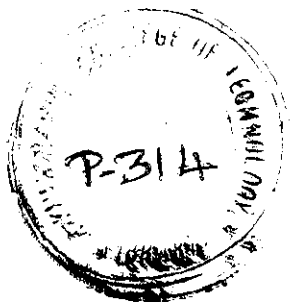
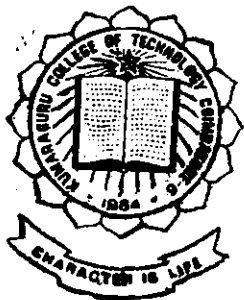


Interactive Website - Cybershopping

Project Report 1997-'98



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Certificate

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1998

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SYNOPSIS

Cybershopping is, essentially, advertising a range of products on the Web and giving a potential customer the choice and convenience to view the entire range and even place orders, all within the confines of his home, at his discretion, 24 hours a day.

Cybershopping is, basically, an Interactive Website which simulates a virtual shop. A user who wishes to purchase any of the available products in the store, can browse through the product list, obtain requisite details if necessary and make a purchase with the click of a button. Some of products implemented in our store are audio and videotapes and CDs, books and magazines. The highlight of cybershopping is that the user gets to hear demo tracks from selected albums, view sample video clips of various movies, read book reviews and make orders if required, any time of the day.

Cybershopping has been implemented using MS FrontPage'97 for the Web creation and design, MS Access for the store database, MS PowerPoint for Web page enhancement and presentation, and Creative Labs WaveStudio and XingMPEG for multimedia applications.

INTRODUCTION

“THE WEB”: What’s the Buzz ?

The Net, Information Superhighway, Cyberspace, The Web. Chances are that you already know more than enough about these magic buzzwords which have been splattered across the billboards, TV commercials, and Magazine advertisements lately. What was once only in the domain of the technology elite has become the small talk of everyday people across the nation.

The WWW i.e. the *World Wide Web*, in particular, has exploded into the scene and promises to change the way we work learn and play. The World Wide Web is one of the most significant inventions since the personal computer. The web is actually built upon a much more comprehensive network known as the INTERNET, without which none of the hype and hysteria surrounding the web itself would mean a thing. Without the Internet the World Wide Web would not mean a thing and vice versa.

THE INTERNET: A Brief History.

The Internet is the granddaddy of all the computer networks. It is a vast, globally connected system of computers and the people who use them. Although the Internet has been around for years, it is in the middle of a phenomenal growth spurt.

At the last count, there were over 50 million people or *users*, connected to the Internet, with thousands of people jumping aboard every day. The Internet began as a research project by the United States Government, soon after the World War II. Clearly what the United States government wanted was a flawless communication system. The Internet was originally named as the **ARPANET** -Advanced Research Projects Agency Net.

THE INTERNET PROTOCOL.

Protocols developed for the **ARPANET** made it possible for computer systems and even entire computer networks to communicate and share information with one another. Specifically, two protocols were developed that made it possible for dissimilar

computers to communicate over a network: the *Transmission Control Protocol* (TCP) and the *Internet Protocol* (IP) together known as TCP/IP. With the advent of TCP/IP, the concept of interconnecting a wide range of computers and networks became a reality, and eventually led to the term “Internet” coined in the early 1980s.

The World Wide Web: Graphical Superset of the Internet

The World Wide Web, known fondly to millions as WWW, W3, or simply as “the Web”. The Web is actually a superset of the Internet. It can be thought of as a *graphical interface* to the Internet, providing a revolutionary way of accessing information scattered across millions of computers around the world. Before World Wide Web, the Internet was very difficult to navigate.

WEB PAGES

The Web pages are the most visually captivating aspect of the entire system and what we “tune in” to see. The term “page” refers to nothing more than a World Wide Web document. A Web page is more like a word processing document than a printed page, especially in the way it is viewed. All the information on a page can be viewed by scrolling. In a nutshell, a page refers to all related information in a single Web document.

WEB SITES

A World Wide Web *site* is simply a collection of interlinked web pages, the Web makes it possible to link any number of items, including other pages. Because of the inherent diversity found in the Web, a site might only provide links to pages pertaining to a specific subject.

HOME PAGES

Each site has a *home page*, the official access point into the site. From the home page you can get an overview of the site and begin exploring it. A properly designed home page is, in essence, like a hospitable host. It invites you in and tells you about all the things you can see and do during the visit. It is the most important page of any sites.

WEB BROWSER

The only way you can visually navigate the Web is by using a special type of software known as a browser. A good browser makes it possible to easily navigate and retrieve information on the web, visually presenting each page you connect to.

UNIFORM RESOURCE LOCATORS (URLs)

Uniform Resource Locators, or URLs, are the standard way of locating and retrieving information on the World Wide Web. They tell your browser what piece of information to retrieve, how to get to it, and what protocol to use the process. URLs can be thought of as postal address for the Web. They specify where pages, files, and other piece of information are located, making it possible for browsers to find and display, or even download, that information.

WEB DESIGN

Web Design means taking advantage of the various elements supported by the World Wide Web – including text, images, audio and animation – and orchestrating them to create a Web site that embraces the opportunities actualized by Web technology. Web design is much more than taking a printed page and scanning it, tossing some HTML tags around it, and placing it on a Web server.

Rather, a successful design incorporates the hypertextual, contextual and sensory realms and combines them with effective programming and administrative and marketing strategies. Ultimately, Web design is the creation of high-impact presence for companies and organizations seeking representation on the Internet.

Components of Design :

There are various components involved in Web design. Web designing incorporates, but is not limited to the components described here. It's important to note that while all these elements are part of what a Web Designer needs to understand, how and when they are to be applied are critical choices a Web designer must make.

- **Content and Copy Writing.**

Content is the most fundamental aspect of Web design because without contents to share, the Web would serve little purpose. The Web designer having examined the needs of a given client must decide how to implement the copy within the site's layout. The contents have to be refined and made consistent with the needs of the Web site while addressing the needs of the site's visitors.

- **Design Language.**

Hyper Text Markup Language (HTML) is the language of the Web – the essential component without which nothing else could exist. Contemporary Web design demands a thorough knowledge and skill to use it to cross browser barriers.

- **Graphic Design.**

Graphic designing, on the Net, has become a hot issue -under challenge as being superfluous. Graphic design on the Web has become a necessity in the commercial and competitive realm. Quality Web design means using graphics, learning the programs and the tools that best create them and designing cleverly, meeting a variety of browser and bandwidth requirements.

- **Multimedia.**

Multimedia is used in the Web to enhance the interactive model we already have with hypermedia text and graphics. Audio and video already available is externally viewable media; in fact, they can be viewed right in-line in some browsers. Plug-in technologies and multimedia players incorporate movement, sound and interactivity simultaneously.

INTERACTIVE WEB SITE

Interactivity with regard to Web sites refers to how much the user can affect, change, or influence the form, content or composition of the Web through which the user level communication takes place. The level of interactivity depends on the level of changes a user can make on the Web. The level or quality of this interactivity is what helps to produce a sensorially rich, mediated Web site through which communication can take place.

Unlike the regular static Web sites, an interactive Web site gives the user an opportunity to interact and be involved with the site. He is provided with various options such as sending requests, feedback and suggestions through forms, and gets the requisite responses from the corresponding site, which is where interactivity comes to the fore. In retrospect, the static sites can merely be browsed for information, without eliciting user participation.

CYBERSHOPPING

Cybershopping is, essentially, advertising a range of products on the Web and giving a potential customer the choice and convenience to view the entire range and even place orders, all within the confines of his home, at his discretion, 24 hours a day.

This is a relatively new concept which presents the user with a wide range of products with certain additional features not normally associated with regular stores. Here the user logs in to the Website of the virtual shop, browses through the available products, and clicks on items he wishes to purchase which adds the selected items to the virtual shopping cart. At the end of the shopping session, the user specifies a mode of payment, clicks on the Pay button and the goods arrive at his doorstep in due course, subject to availability of the ordered item. The highlight of this concept of marketing is the 24hour shopping facility.

We have implemented this concept in a store that sells books, magazines, audio CDs and cassettes, video CDs, LDs, DVDs and cassettes. The user can browse through the products

available and obtain the necessary details for a particular item. If, for example, the user is an avid music fan and is interested in purchasing any of the available titles, he can view the music collection based on the artist name or the album name or the music category. Once he has made his choice from the list of albums, he gets to hear demo tracks of any single on that album and if he is satisfied with it, he can place an order. The mode of payment is left to his discretion within the constraints of the store. Doorstep delivery will be made subject to availability at the earliest.

This can also be applied to other products in the store. What sets this type of shopping apart from regular shopping is the hassle-free, interactive 24-hour shopping facility without having to step out of his house.

PRACTICAL IMPLEMENTATION

Software Used :

- **Microsoft FrontPage'97 :**

This is a user-friendly Web designing tool. It can be used to create, design, manage and serve Web sites with relative ease. It has made a significant contribution to the state of Web design in that it completely redefines how an entire Web site can be created. Rather than needing to understand HTML tags, with FrontPage'97 we design on-screen just as the page will appear in a reader's browser window.

FrontPage'97 software includes the following:

FrontPage Explorer - This is used to view and manage a Web site, which is a collection of interlinked Web pages.

FrontPage Editor - This is the heart of the software with which we actually design the Web page.

FrontPage Personal Web Server - This is a capable and simple Web server program.

- **Microsoft Access'97:**

Microsoft Access'97 is a full-featured, Windows'95-based, relational database management system (RDBMS). Its database management programs are designed to store, manipulate and report large volumes of information or data. Access makes use of all the features available to programs designed specifically to run with a 32-bit operating system such as Windows'95 and Windows NT.

Using MS Access we can create and modify database tables, data entry forms, reports and queries (customized requests for information from one or more tables).MS Access supports Object Linking and Embedding(OLE) feature which allows objects from one application to be used in another.

- **Microsoft PowerPoint'97:**

PowerPoint'97 is a full-fledged presentation program which is used to design presentations for a variety of applications. PowerPoint comes with a rich assortment of drawing tools and cliparts and also a wide range of animation and sound tools.

- **Internet Information Server:**

✓ This is used to publish both information and applications. This means that the Web site can contain anything from static pages of information to interactive applications. We can also find and extract information from, and insert into databases.

With the WWW service and the Open Database Connectivity(ODBC) drivers provided with the Internet Information Server(IIS), we can –

- Create Web pages with information contained in a database.
- Insert, delete, update information in the database based on the user input.
- Perform other Structured Query Language(SQL) commands.

Web browsers submit requests to the Internet server by using HTTP. The Internet server responds with a document formatted in HTML. Access to databases is accomplished through a component of the IIS called the Internet Database

Connector(IDC).The IDC, Httpodbc.dll uses ODBC to gain access to databases.

The IDC uses 2 types of files to control how the database is accessed and how the output Web page is constructed. These files are Internet Database Connector(.idc) files and HTML extension(.htx) files.

The IDC files contain the necessary information to connect to the appropriate ODBC data source and execute the SQL statement. This file also contains the name and location of the HTML extension files.

The HTML extension file is a template for the actual HTML document that will be returned to the Web browser after the database information has been merged into it by the IDC.

- **Visual J++ :**

This is one of the hottest tools for creating Java programs. It is a full-fledged, powerful development environment that not only makes it easier to create Java programs but lets one create very complex Java programs. It

also uses the Object-Oriented technology and provides cross-platform development for the Internet.

- **Creative Labs WaveStudio :**

This is the software used to record and playback demo tracks from music albums stored in the database, as Wave files.

- **XingMPEG :**

This software is used to play sample video clips of movies in the database.

- **Internet Explorer :**

This is the Web browser used in association with FrontPage'97.

Software Implementation:

In Cybershopping, we have designed an interactive and dynamic Web site for the store, using FrontPage'97. The store's database, consisting of various products and their necessary details, customer billing and details and purchases,

is created using MS Access. The enhancement and presentation of the Web site are achieved using MS PowerPoint.

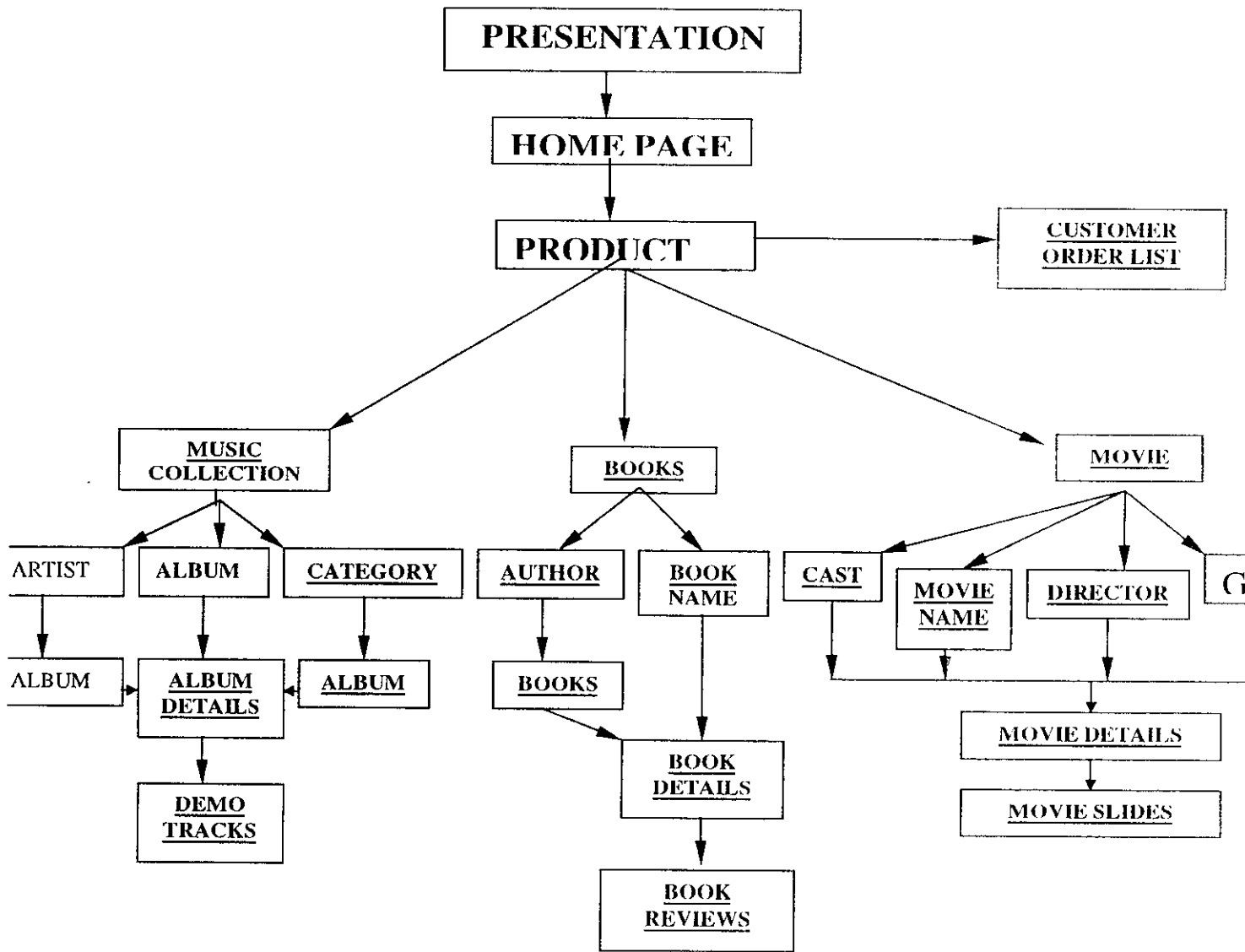
The database connectivity between FrontPage and MS Access is provided by Internet Information Server. For further embellishment of the Web page, Java applets have been created using Visual J++ and have been imported into the Web site. For multimedia applications like playing demo audio tracks and video clips, WaveStudio and XingMpeg have been used.

System Implementation:

The Web site is created, designed and published to a server so that it is accessible to any user on the Net. When the potential customer logs in to our Home page, he is presented with a whole range of products, represented by icons, and is provided with a brief introduction to the concept of Cybershopping and how he can go about making the required purchase.

The user clicks on the product that he is interested in, and a new page furnishes him with various details and options. For example, a user interested in purchasing a music cassette or CD can browse through the music album list, scan through the list of artists or view albums of different music categories, depending on his preference. Once he has made up his mind about the album he wishes to know more about, by clicking on that album, he is presented with the album details and all tracks on the album. Clicking on a particular song title, a demo track of that song is played, and the user gets a feel of the music. Similar options and features have been provided for the other products in the store.

Once the user has made up his mind about purchasing some items from the store, all he has to do is switch to the page meant for placing orders. He, then, has to enter his details such as name, address, e-mail address and has to specify his mode of payment which has to be in compliance with the store. Soon after, he receives his bill and doorstep delivery will be made to his aforementioned address at the earliest.



Database Design :

The store's database, consisting of various products and their necessary details, customer billing and details and purchases, is created using MS Access.

The tables and their description are shown below:

<u>TABLE NAME</u>	<u>DESCRIPTION</u>
PRODUCT	The PRODUCT table has: Product ID, Product Name
BOOK	The BOOK table has: Book ID, Title, Topic ID,ISBN No, Pub Name, Price, Notes, No Copies
PERSON	The PERSON table has: Person ID, Name, Person Type, Notes, Photograph P Type = Author/ Musician/ Actor/ Actress/ Director
TOPIC	The TOPIC table has: Topic ID, Topic Name
BOOK_AUTHOR	The BOOK_AUTHOR table has: Book ID from BOOK table, Person ID from PERSON table where Person Type =Author. These two form a composite key.

MUSIC_COLLECTION	<p>The MUSIC_COLLECTION table has: Recording ID, Title, Category, Album Photo, Year Released, Format, Price, Notes</p> <p>Category = Rap/Pop/Rock/Classic etc.</p>
MUSIC_ARTIST	<p>The MUSIC_ARTIST table has: Recording ID, Person ID</p> <p>Person ID from PERSON table where Person Type = Musician</p>
TRACK_DEMO	<p>The TRACK_DEMO table has: Recording ID, Track NO, Track Name, Demo Track</p> <p>Where Recording ID and Track NO form the composite key.</p>
VIDEO_COLLECTION	<p>The VIDEO_COLLECTION table has: Video ID, Title, Year, Rating, Genre, Review, video Clip, Price, Format</p>
ACTOR	<p>The ACTOR table has: Video ID, Person ID Person Type =Actor</p>
ACTRESS	<p>The ACTRESS table has: Video ID, Person ID Person Type =Actress</p>
DIRECTOR	<p>The DIRECTOR table has: Video ID, Person ID</p> <p>Person Type = Director</p>
CUSTOMER	<p>The CUSTOMER table has: Customer ID, Name, Address, City, State, Postal Code, Country, Phone, Fax, Email</p>

CUSTOMER_CREDIT_CARD	The CREDIT_CARD table has: Customer ID, Credit Card Name, Credit Card No, where all three fields form the composite key.
ORDER	The ORDER table has: Order ID, Customer NO, Date, Mode Of Payment Here Order ID and Customer No form the Composite Key
INVOICE	The INVOICE table has: Order ID, Invoice ID .Both form the Composite key.

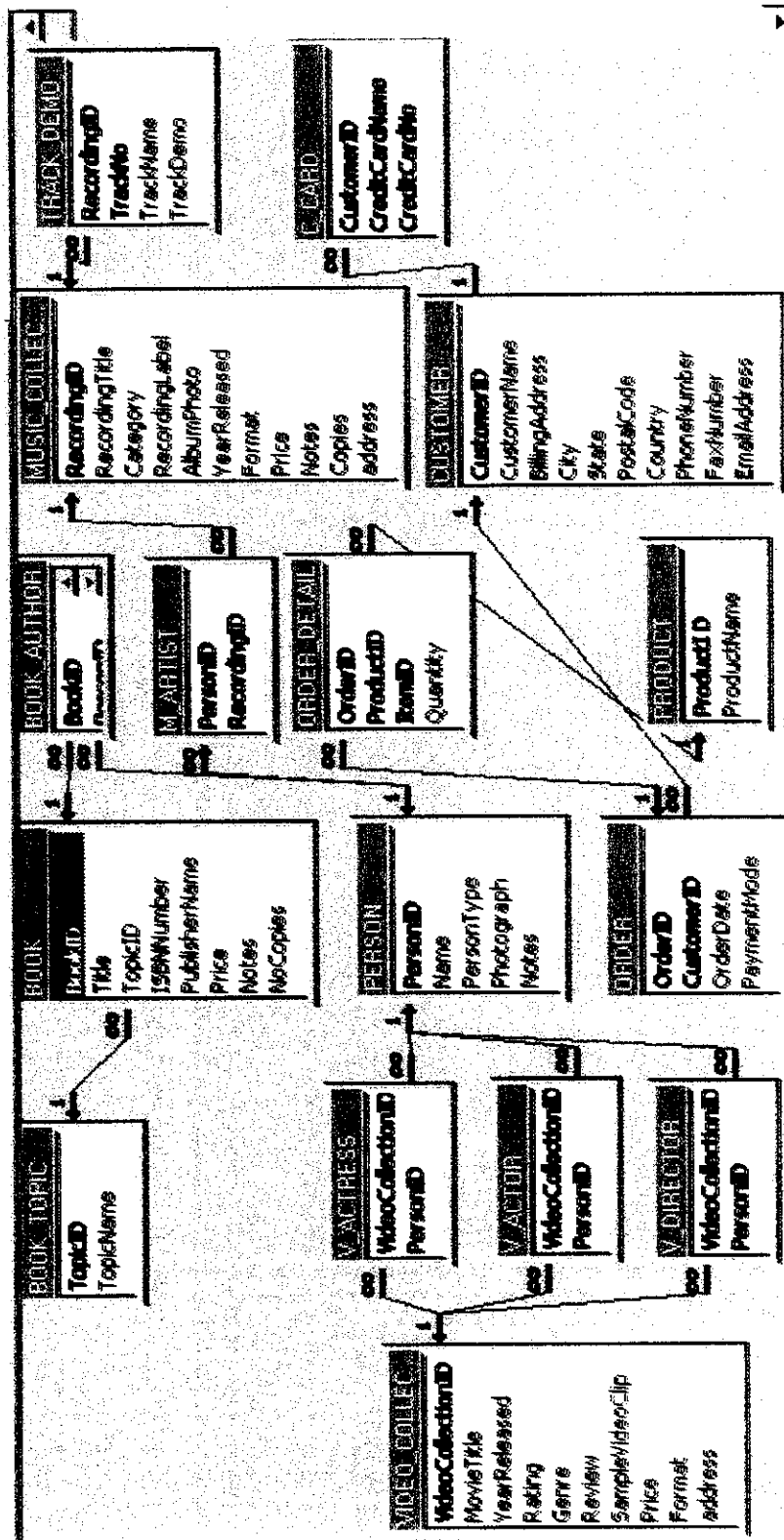


TABLE RELATIONSHIP DIAGRAM

CONCLUSION – FUTURE SCOPE

With the world bracing itself for the new millenium, the emergence of the World Wide Web as a major, bona fide communication medium will lead to a surge in the design of Web pages and Web sites for a myriad applications. This would in all certainty lend a new perspective to the futuristic concept of Cybershopping and marketing.

Many other features and options can be incorporated in future Cybershopping packages. It will provide an electronic commerce framework standardizing Computer Aided Shopping(CASH) and also provide a rich infrastructure for making the shopping experience seamless, intuitive and secure.

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