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# Auction & Bidwatching

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# AUCTION & BIDWATCHING

A graduate project submitted to Dakota State University in partial fulfillment of the requirements for the degree of

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IN

**INFORMATION SYSTEMS**

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BY

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# PROJECT APPROVAL FORM

We certify that we have read this project and that, in our opinion, it is satisfactory in scope and quality as a project for the degree of Master of Science in Information Systems.

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# ABSTRACT

**Auctions** are among the oldest economic institutions in place. They have been used since antiquity to sell a wide variety of goods, and their basic form has remained unchanged. In this dissertation, we explore the efficiency of common auctions when values are interdependent- the value to a particular bidder may depend on information available only to others-and asymmetric. In this setting, it is well known that sealed-bid auctions do not achieve efficient allocations in general since they do not allow the information held by different bidders to be shared.

**Auction & Bid Watching** concept deals with the Online Auction & Bidding concept. It is used to bid from the comfort of one's own home has seen a change like never seen before. This is done through JAVA technologies. It includes WINDOWS XP as the Operating System, SQL SERVER as Database. The front end deals with GUI and source code deals with SQL SERVER (Backend).

With the point and click of the mouse, one can view all the product information for the auction like the product code, product name, initial bid amount, quantity etc, and in moments they find that either they are the top bidder or someone else wants it more, while meeting the needs of its users. . When the bidding time is over the product is held in reserve (sold) to the member who had made the highest bid amount. The information about the product and their minimum bidding amount are updated by the customs bureaucrat who is responsible for all these types of administrative works.

# DECLARATION

I hereby certify that this project constitutes my own product, that where the language of others is set forth, quotation marks so indicate, and that appropriate credit is given where I have used the language, ideas, expressions or writings of another.

I declare that the project describes original work that has not previously been presented for the award of any other degree of any institution.

Signed,

_____

SIDDHARTH MACHIRAJU

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# 1. INTRODUCTION

The Auction and Bid task is used for viewing the product information with the bidding amount. Moreover, the customer can interact with the task for bidding the amount of the particular product. The main purpose of the project is to make the interface simple to be used for the user. This task is used to reduce the customer transaction-time as well as user can access easily.

## 1.1. VISION

"The interface has to be simple to use, as the target end-users for the system are non-technical persons. Our system also aims to provide a complete IT solution for Bidding."

## 1.2. MISSION

The mission of this project is

- Any user can see the details of the product.
- Only the registered user can participate in auction.
- Bid winner can pay the money through credit/debit card.
- The users can see their purchased products and posted items.

## 1.3. AIM

The process of an online auction is much the same as a live auction. This means that users place bids for items, and the goods get sold to the highest bidder. The customer gets notified through email on the status of the bids, which is when the customer places a bid, when the customer has been outbid and when the customer has won an item. Our system aims to provide powerful functionalities to the user by making use of simple easy-to-easy interface.

# 2. SCOPE

## 2.1. EXISTING SYSTEM

The existing system is the harder one to bid the product. The blue-collar (manual) system is prone to blunder. It is time consuming. There are odds for changing the scheme testimony and do malpractice. This system engages a lot of blue-collar entries with the appliance to achieve the preferred task. This existing system is intricate to be aware of.

Usage of documents in the imbursement process leads to less competence, less accuracy and less productivity.

### 2.1.1 Disadvantages of the Existing System

The shortcomings in blue-collar system are as follows

- Increased disbursement for papers shuffle and storage.
- Less control of amounts.
- Personnel who are sited in poles apart of the world cannot transact resourcefully.

## 2.2. ANTICIPATED SYSTEM

The anticipated system is designed by keeping to eradicate the negative aspect of the offered system in order to afford an enduring solution to the tribulations. The opportunity to shop from the comfort of one's own home has seen a change like never seen before. Within the span of a few short years, what may have began as an experimental idea has grown to an immensely popular hobby, and in some cases, a means of livelihood, the online auction gathers tremendous response every day, all day. With the point and click of the mouse, one may bid on

an item they may need or just want, and in moments they find that either they are the top bidder or someone else wants it more, and you're outbid. This system is used to trim down the difficulties. On the whole the anticipated system is very constructive and is trouble-free. Our anticipated system also meets up the desires of the patron who can bid all the way through online.

### 2.2.1 Features of the Anticipated System

- User friendly.
- User can get the Timely Information from the database without any delay regarding the query.
- This reduces the delay of response given to the Customer.
- User can generate reports very easily.

### 2.2.2 Steps drawn in Anticipated System

The Auction and Bid watching is a task, used for displaying all product information including the bid amount. In this page, if the member selects the particular product codes, then it will shows all information concerning that particular product, as well as member can bid the amount of the product. The administrator can launch the new product and they can set the initial auction amount of the product. Administrator can view all information of members.

This section encloses two categories of computation. They are as follows:

1. Based on the Time and the other one
2. Based on the Bidding amount.

**Step 1**: Only members are allowed in this module with using authentication.

**Step 2**: New User can request the membership by registering their personal information including Banking information.

**Step 3**: Member's can access and can decide on the particular product which they are interested to bid by selecting their codes, and they can initiate the bidding of the selected product.

**Step 4:** All information's were maintained in the separate database tables.

**Step 5:** As a final point, When the bidding time is over the bidding product is held in reserve (sold) to the member who had made a premier bid amount.

### 2.2.3 Advantages of the Anticipated System

- The proposed system is automated that is faster than the existing manually maintained system and can handle data easily.
- Computerization of the details of the buyers and sellers.
- Maintenance time and cost are greatly reduced.
- Accurate information can be generated easily and quickly at different levels.
- Report can be generated easily and quickly.

### 2.2.4 Threats to the Anticipated System

With the present opportunity to buy sight unseen also comes the opportunity to be scammed sight unseen as well. There are over 30 million 'hits' each month on the online auction sites, and that is opportunity waiting to be taken for those with the criminal intent of defrauding others. However with a little care and caution, one can have a positive experience doing business on an

online auction, and each party can leave satisfied with their 'deal', whether they are the buyer, the seller, or the conveyance that brought it all together.

# 3. FEASIBILITY REPORT

## 3.1. TECHNICAL FEASIBILITY

Evaluating the technical feasibility is the trickiest part of a feasibility study. This is because at this point in time, not too many details on the design of the system are known, making it difficult to access issues like performance, costs on (on account of the kind of technology to be deployed) etc. A number of issues have to be considered while doing a technical analysis.

We must try to understand what are the different technologies involved in the anticipated system before commencing the project, we have to be very clear about what are the technologies that are to be required for the development of the new system. We must also find out whether the organization currently possesses the required technologies and if the required technology is readily available with the organization?

## 3.2. OPERATIONAL FEASIBILITY

Proposed projects are beneficial only if they can be turned into information systems that will meet the organizations operating requirements. Simply stated, this test of feasibility asks if the system will work when it is developed and installed. Are there major barriers to Implementation? Here are questions that will help test the operational feasibility of a project:

Is there sufficient support for the project from management from users? If the current system is well liked and used to the extent that persons will not be able to see reasons for change, there may be resistance.

Are the current business methods acceptable to the user? If they are not, users may welcome a change that will bring about a more operational and useful systems.

Have the user been involved in the planning and development of the project?

Early involvement reduces the chances of resistance to the system and in general and increases the likelihood of successful project.

Since the proposed system was to help reduce the hardships encountered. In the existing manual system, the new system was considered to be operational feasible.

## 3.3. ECONOMIC FEASIBILITY

Economic feasibility attempts to weigh the costs of developing and implementing a new system, against the benefits that would accrue from having the new system in place. This feasibility study gives the top management the economic justification for the new system.

A simple economic analysis which gives the actual comparison of costs and benefits are much more meaningful in this case. In addition, this proves to be a useful point of reference to compare actual costs as the project progresses. There could be various types of intangible benefits on account of automation. These could include increased customer satisfaction, improvement in product quality better decision making timeliness of information, expediting activities, improved accuracy of operations, better documentation and record keeping, faster retrieval of information, better employee morale.

# 4. SOFTWARE & HARDWARE REQUIREMENTS

## 4.1. HARDWARE REQUIREMENTS

- Processor — PENTIUM IV
- RAM — 128 MB
- Hard Disk — 40 GB
- Cache Memory — 11,011,968 Bytes
- Virtual Memory — 32 MB
- Display Card — Super Video Graphics Adapter (SVGA)
- Mouse — Logitech Serial Mouse
- Keyboard — Standard 104 Enhanced Keyboard

## 4.2. SOFTWARE REQUIREMENTS

- Web Server — Apache Tomcat Server 6.0
- Browser — Internet Explorer 7.0
- Server side scripting — JSP, Java Beans
- Database — SQL Server
- Language — J2EE
- Client side scripting — HTML

# 5. SYSTEM DESIGN

The word System is possibly the most overused and abused term in the technical lexicon. System can be defined as the "a set of fact, principles, rules etc., classified and arranged in an orderly form so as to show a logical plan linking the various parts" here the system design defines the computer based information system. The primary objective is to identify user requirements and to build a system that satisfies these requirements.

Design is much more creative process than analysis. Design is the first step in the development of any system or product. Design can be defined as "the process of applying various techniques and principles for the purpose of defining a device, a process or a system in sufficient detail to permit its phyŝical realization".

It involves four major steps they are

- Understanding how the system is working now.
- Finding out what the system does now.
- Understanding what the new system will do.
- Understanding how the new system will work.

In Auction and bid watching System, when it was maintained manually, it involves lot of inconveniences to customer when transact of the auction item using bid amount the money from member person to customs. User does not view his member details such that available bidder's, only customs officer can view all member details as well as the all product information. Then the member can also view only the auction product information, select and perform the bidding operation.

So as to avoid these difficulties, a new system was designed to keep these requirements in mind. Therefore the manual process operation has been changed into GUI based environment, such that the user can retrieve the records in a user-friendly manner and it is very easy to navigate to the corresponding information.

## 5.1. FUNCTIONAL REQUIREMENTS

The functional Requirement includes Auction, Bid, and Win.

### a. Auction

An auction is a sale in which a seller presents his product on a public platform/ forum. The selling price in an auction is determined by the bids made by interested buyers. The price they bid is based on their own valuation of, and need for, the product. The product is sold to the highest bidder. A potential buyer participates by bidding on an item that a seller has listed. The person who has offered the highest bid at close of auction wins the right to purchase the item at that price.

### b. Bid

A bid is the amount of money proffered for an item that has been put on sale in an auction. The bidder competes with other potential buyers, keeping in mind that the buyer with the highest bid is obliged to complete the purchase with the seller. In other words, your bid tells other buyers, "I want to buy this item at this price."

### c. Win

You win an auction by placing the winning (read highest) bid and obtaining the item on auction. The person with the highest bid is the winner of the auction. Now that you're familiar with how an auction generally works.

## 5.2. EVENTS DESCRIPTION

### Before an auction

The process of an online auction is much the same as a live auction. This means that users place bids for items, and the goods get sold to the highest bidder. You are notified through email on the status of your bids, which is when you place a bid, when you've been outbid and when you've won an item.

To bit for an item, there is a bidding form through which you may place bids on the item. To bid on an item, enter your bid amount. While entering your bid, you need to consider the bid increment. The bid increment is the amount by which each bid increases. The seller sets this amount. The bid amount should be one bid increment or more above the current leading bid specified on the item page.

Bids need not be exact multiples of the bid increment amount. Bids will only have to be one increment or more above the current bid to be accepted.

**Example**

***Bid increment amount is 20$***

***Starting price is 1$***

***Current highest bid is 21$***

**Now in order to bid:** You can bid at anywhere above or equal to the current highest bid amount for your bid to be accepted, i.e. you can bid at anywhere between 21 $ to 41 $ (or more) for the bid to be accepted. This means that you can bid at say 23$ and the next current minimum bid will

get adjusted to 43 $ (since the Bid Increment level is set to 20). If you wish to place a higher bid, you may do so.

**Example:** You can place a bid of 45$. This would incorporate the current bid at 21$ and the minimum bid increment of 20$. The remaining 4$ is the additional amount you have bid. Therefore the user who bids after you would have to bid at least 65$ (45$ of your bid and 20$ of the bid increment)

To find more information about the product the description of that product has to be referred. A description of every item is put up on the item page. If it is convenient for you and the seller, you can also arrange to personally inspect the item.

To bid on a multiple items is considered to be a special auction where a seller has more than one quantity of the item he or she wants to sell/bid. The seller selects the starting bid amount and indicates how many of these items are available for the auction.

**AFTER AN AUCTION**

At the end of every auction, you would receive an email (if your bid is the highest at that point of time) with your seller's contact details. You would then need to contact your seller to arrange for the delivery and complete the deal offline.

A bidder can know about the item he/she won in an auction once the auction of an item you have bid on has ended. You will receive an auto-generated email if your bid was the highest and the reserve price (if any) had been met. The mail will include item details and the seller's contact details. The seller too will receive an email providing them with your contact details. You will need to contact your seller to inspect the goods and arrange delivery and payment. Once the auction is ended, both the seller and the buyer are notified through email and given

each other's contact details. They need to contact each other and work out payment as per the terms of payment mentioned by the seller on the item page.

### Transaction

The transaction between the buyer and the seller can be carried out manually if the buyer and seller are in a reachable distance. In other case the transaction is carried out over the net via E-commerce Secured transaction systems.

## 5.3. Module Description

### Administrator

AUCTION & BIDWATCHING provides the complete information related to products for sale and the buyers can bid for the products and can own them all this has to be provided and maintained by the admin, because the complete auction process is to be kept under control till the product sale gets confirmed. It has to verify the details given by the buyer and seller then it has to confirm all the things furnished by the both buyer and seller.

### Seller

Sellers want a place where they can sale their products at a higher price and get maximum benefit out of that. This is the place where seller can display all his products and sell them. Seller can display all the possible products for sale and can call the people for the auction then after receiving the final bidding who so ever bids the highest bid owns the product. Seller can have the benefits directly without the involvement of a third party.

## Buyer

People always like to purchase various kinds of products available in the market, but in the local market they only have access to the local products only, but in this application buyer can buy any product from any part of the world at a very best competitive price and own the product. Buyer has to just furnish their details and can participate in the bidding to acquire the product, which is for sale.

### 5.4. INPUT DESIGN

Input design is the bridge between users and information system. It specifies the manner in which data enters the system for processing and it can ensure the reliability of the system and produce reports from accurate data or it may result in output of error information.

In E-Auction, a form which has inputs in the system is discussed below.

1. Registration
2. Member Login
3. Product Information
4. Customs Login
5. Member Details
6. New Launch Product

## Registration Form

New customer gives their information like, Name, password, credit card number, working details, date of birth, sex, address and contact details like e-mail id, phone number etc.

### Member Login Form

The member gives the inputs for their login into the system. Inputs are user name and password. If they are valid, then only he/she can enter into the system.

### Customs Login Form

The customs officer gives the inputs for their login into the system. Inputs are customer id and password. If they are valid, he/she can enter into the system.

### Product Details

This module is used by both member and customs officer with which they can view all auction product details. Member can bid the amount of the product by just clicking on the product.

### Member Details

This module is used by customs officer; officer can view all member details.

### New Launch Product

This module is used by customs officer for launching the new Product.

## 5.5. OUTPUT DESIGN

Outputs from the computer system are rewired primarily to communicate the results of processing to the users. They also used to provide a permanent copy of these results for later consultation / verification. The main points on designing an output are deciding the media, designing layout and report to be printed. The outputs are designed from the system, and are simple to read and interpret.

According to the requirements of the system, various types of outputs as desired are designed as follows

**Product Details** are used to display the auction product details.

**Member Details** are used to displays the member details.

Member can bid the product amount from the initial amount. The last bid amount can be set between the exceed time.

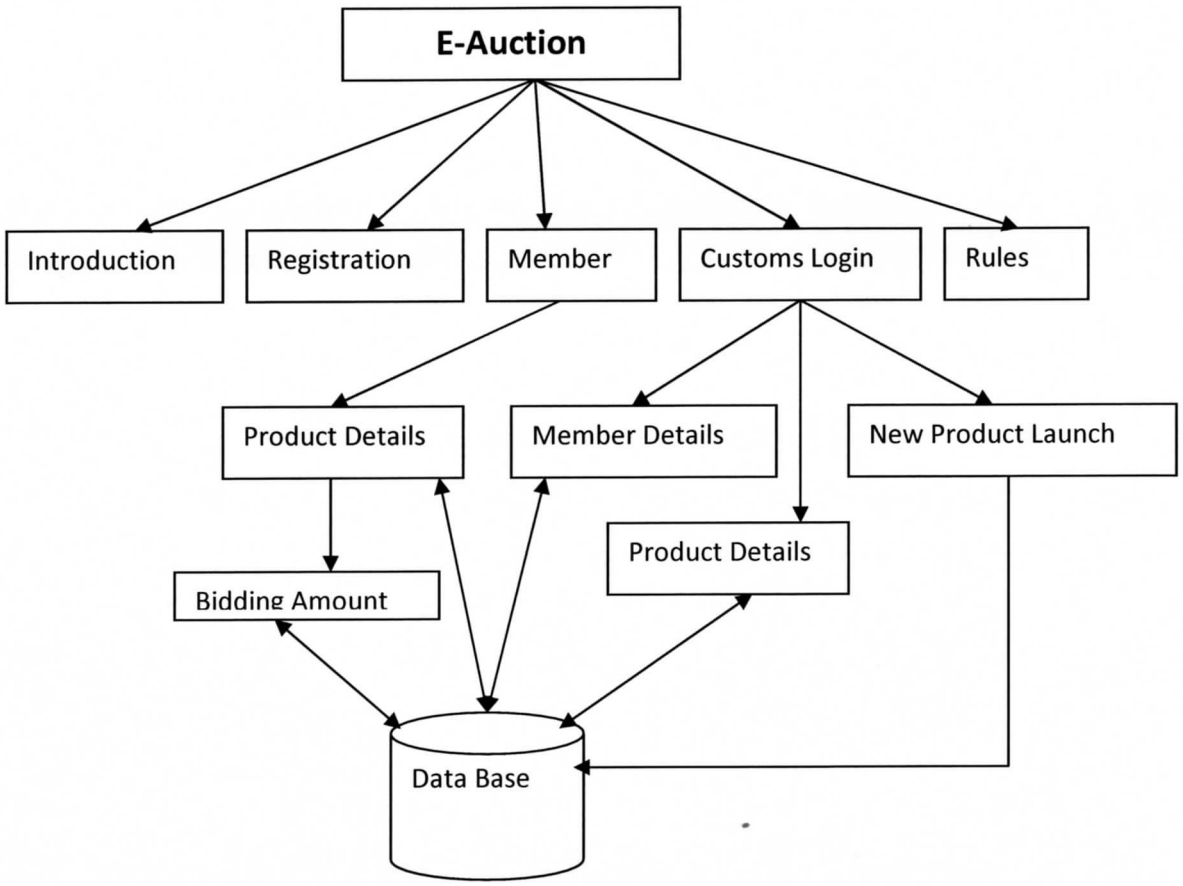



**Figure 1 Data Flow Diagram**

## TABLE STRUCTURE

### Customs Table

| Field name | Data type | Size |
|---|---|---|
| Officer Name | Varchar | 50 |
| Customs ID | Varchar | 10 |

**Table 1.Customs Table**

### Member Table

| Field name | Data type | Size |
|---|---|---|
| Name | Varchar | 50 |
| Father's name | Varchar | 50 |
| DOB | Date/time | 10 |
| Sex | Varchar | 6 |
| Organization | Varchar | 10 |
| Designation | Varchar | 10 |
| Address | Varchar | 50 |
| Mobile | bigint | 10 |
| Email-id | Varchar | 20 |
| Credit card No | bigint | 16 |

**Table 2. Member Table**

## Product Table

| Field name | Data type | Size |
|---|---|---|
| Product Name | Varchar | 50 |
| Product code | Varchar | 10 |
| Qty | Int | 5 |
| Initial price | Int | 10 |
| Expiry date | Date/time | 10 |
| Launch date | Date/time | 10 |

**Table 3. Product Table**

## Bidding Table

| Field name | Data type | Size |
|---|---|---|
| Officer code | Varchar | 10 |
| Member code | Varchar | 10 |
| Product code | Varchar | 10 |
| Initial price | int | 10 |
| Current time | Date/time | 10 |
| Current date | Date/time | 10 |
| Bidding Amount | Int | 10 |
| Status | Varchar | 10 |

**Table 4. Bidding Table**

### 5.6. Security Methods

## Steganography

The word Steganography literally means covered writing as derived from Greek and includes a vast array of methods of secret communications that conceal the very existence of the message. In June this year, USA Today reported that the encrypted blueprints of the next terrorist attack on the U.S. and its allies may lie hidden behind the X-rated pictures on several pornographic web sites and the posted comments on sports chat rooms.

A snake makes itself invisible in a bed of grass by natural subterfuge. For all visible signs one sees just a stretch of grass but not the snake hiding beneath. The word Steganography literally means covered writing as derived from Greek. It includes a vast array of methods of secret communications that conceal the very existence of the message. Invisible inks, microdots, character arrangement, digital signatures, covert channels and spread-spectrum communications and other artifacts of day-to-day use in communications have thus been converted into potent tools of Steganography.

As with other simple and casual things, Internet and the web have added to the might of such simple procedures. Bits and bytes have provided a powerful medium for the exchange such masqueraded messages in an unlimited and anonymous environment. Software like White Noise Storm and S-Tools, can use the `least significant' bits of any digitized file to hold covert information, without changing it in any manner perceptible to the human sensory organs of sight or hearing as the case may be.

So far paranoid privacy advocates have touted Steganography, albeit openly for communication without the powers that be breathing down your shoulders. It has been quite

common to hide copyright messages behind digitized files so that it may be used in civil disputes. Software professionals found another tool in Steganography apart from `Easter Eggs' to record their contributions to a software product, when they were afraid that their employers might not give them title credits.

## Protection

With Steganography `Stego Analysis' is the natural offshoot. Stego Analysis provides means to detect and destroy steganographic messages. Any image can be manipulated with the intent of destroying some hidden information whether an embedded message exists or not. However, they suggest that detection should precede destruction to target such hidden messages, which are not just innocuous copyright or ownership related info (known as `digital watermarks'). Detection may also save wasted effort Steganography and cryptography.

Steganography is different from cryptography. Cryptography uses encryption to change the contents of digitized files using some known algorithm into something totally different. The same algorithm can be used to restore it to its original form. Steganography does not alter the message in any way. It simply hides it. To make detection almost impossible, encrypted messages can be hidden using Steganography.

**Example: Dead drops**

`Dead drop' is a Cold War-era slang connoting a place where spies left information. Cops and security experts feel that the Internet provides virtually limitless supply of `dead drops'. Officials and experts say the messages scrambled using free encryption programs set up by groups that advocate privacy on the Internet are hidden in an existing images on selected web sites. The e-mails and images can only be decrypted using a `private key' or code, selected by the

recipient. Thus you very well could have a photograph and image with the time and information of an attack, say on an International airport, sitting on your computer, and you would never know it! Unlike the good old `dead drop' the Internet, is proving to be a much more secure way to conduct clandestine warfare.

# 6. SOFTWARE & HARDWARE IMPLEMENTATION

## About Java

The Java programming language is robust and versatile, enabling developers to

- Write software on one platform and run it on another.
- Create programs to run within a web browser.
- Develop server-side applications for online forums, stores, polls, processing HTML forms, and more.
- Write applications for cell phones, two-way pagers, and other consumer devices.

The Java programming language is a high-level language that can be characterized by all of the following buzzwords:

| | |
|---|---|
| Simple | Architecture neutral |
| Object oriented | Portable |
| Distributed | High performance |
| Interpreted | Multithreaded |
| Robust | Dynamic |
| Secure | |

The Java platform differs from most other platforms in that it's a software-only platform that runs on top of other hardware-based platforms.

The Java platform has two components:

- The *Java Virtual Machine* (JVM)

- The *Java Application Programming Interface* (Java API)

Java technology is a portfolio of products that are based on the power of networks and the idea that the same software should run on many different kinds of systems and devices.

### 6.1. Client Server

## Over view

Client Server is one, which has generated more heat than light, and also more hype than reality. This technology has acquired a certain critical mass attention with its dedication conferences and magazines. Major computer vendors such as IBM and DEC; have declared that Client Servers is their main future market. A survey of DBMS magazine revealed that 76% of its readers were actively looking at the client server solution. The growth in the client server development tools from $200 million in 1992 to more than $1.2 billion in 1996.

Client server implementations are complex but the underlying concept is simple and powerful. A client is an application running with local resources but able to request the database and relate the services from separate remote server. The software mediating this client server interaction is often referred to as MIDDLEWARE.

The typical client either a PC or a Work Station connected through a network to a more powerful PC, Workstation, Midrange or Main Frames server usually capable of handling request from more than one client. However, with some configuration server may also act as client. A server may need to access other server in order to process the original client request.

The key client server idea is that client as user is essentially insulated from the physical location and formats of the data needs for their application. With the proper middleware, a client input from or report can transparently access and manipulate both local database on the client

machine and remote databases on one or more servers. An added bonus is the client server opens the door to multi-vendor database access indulging heterogeneous table joins.

## What is a Client Server?

Two prominent systems in existence are client server and file server systems. It is essential to distinguish between client servers and file server systems. Both provide shared network access to data but the comparison dens there! The file server simply provides a remote disk drive that can be accessed by LAN applications on a file-by-file basis. The client server offers full relational database services such as SQL-Access, Record modifying, Insert, Delete with full relational integrity backup/ restore performance for high volume of transactions, etc. the client server middleware provides a flexible interface between client and server, who does what, when and to whom.

### Why Client Server?

Client server has evolved to solve a problem that has been around since the earliest days of computing. During mainframe era choices were quite limited. A central machine housed both the CPU and DATA (cards, tapes, drums and later disks). Access to these resources was initially confined to batched runs that produced departmental reports at the appropriate intervals. A strong central information service department ruled the corporation. The role of the rest of the corporation limited to requesting new or more frequent reports and to provide hand written forms from which the central data banks were created and updated. The earliest client server solutions therefore could best be characterized as "SLAVE-MASTER".

Time-sharing changed the picture. Remote terminal could view and even change the central data, subject to access permissions. And, as the central data banks evolved in to

sophisticated relational database with non-programmer query languages, online users could formulate ad hoc queries and produce local reports without adding to the MIS applications software backlog. However remote access was through dumb terminals, and the client server remained subordinate to the Slave\Master.

## Front end or User Interface Design

The entire user interface is planned to be developed in browser specific environment with a touch of Intranet-Based Architecture for achieving the Distributed Concept. The browser specific components are designed by using the HTML standards, and the dynamism of the designed by concentrating on the constructs of the Java Server Pages.

## Communication or Database Connectivity Tier

The Communication architecture is designed by concentrating on the Standards of Servlets and Enterprise Java Beans. The database connectivity is established by using the Java Data Base Connectivity. The standards of three-tier architecture are given major concentration to keep the standards of higher cohesion and limited coupling for effectiveness of the operations.

### 6.2. Features of the Language Used

In my project, I have chosen Java language for developing the code. Initially the language was called as "oak" but it was renamed as "Java" in 1995. The primary motivation of this language was the need for a platform-independent (i.e., architecture neutral) language that could be used to create software to be embedded in various consumer electronic devices. Java is a programmer's language. Java is cohesive and consistent. Except for those constraints imposed by the Internet

environment, Java gives the programmer, full control. Finally, Java is to Internet programming where C was to system programming.

## Importance of Java to the Internet

Java has had a profound effect on the Internet. This is because; Java expands the Universe of objects that can move about freely in Cyberspace. In a network, two categories of objects are transmitted between the Server and the Personal computer. They are: Passive information and Dynamic active programs. The Dynamic, Self-executing programs cause serious problems in the areas of Security and probability. But, Java addresses those concerns and by doing so, has opened the door to an exciting new form of program called the Applet.

## Java can be used to create two types of programs

Applications and Applets: An application is a program that runs on our Computer under the operating system of that computer. It is more or less like one creating using C or C++. Java's ability to create Applets makes it important. An Applet is an application designed to be transmitted over the Internet and executed by a Java –compatible web browser. An applet is actually a tiny Java program, dynamically downloaded across the network, just like an image. But the difference is, it is an intelligent program, not just a media file. It can react to the user input and dynamically change.

## Features of Java Security

Every time you that you download a "normal" program, you are risking a viral infection. Prior to Java, most users did not download executable programs frequently, and those who did scanned them for viruses prior to execution. Most users still worried about the possibility of

infecting their systems with a virus. In addition, another type of malicious program exists that must be guarded against. This type of program can gather private information, such as credit card numbers, bank account balances, and passwords. Java answers both these concerns by providing a "firewall" between a network application and your computer. When you use a Java-compatible Web browser, you can safely download Java applets without fear of virus infection or malicious intent.

## Portability

For programs to be dynamically downloaded to all the various types of platforms connected to the Internet, some means of generating portable executable code is needed .As you will see, the same mechanism that helps ensure security also helps create portability. Indeed, Java's solution to these two problems is both elegant and efficient.

## The Byte code

The key that allows the Java to solve the security and portability problems is that the output of Java compiler is Byte code. Byte code is a highly optimized set of instructions designed to be executed by the Java run-time system, which is called the Java Virtual Machine (JVM). That is, in its standard form, the JVM is an interpreter for byte code.

Translating a Java program into byte code helps makes it much easier to run a program in a wide variety of environments. The reason is, once the run-time package exists for a given system, any Java program can run on it.

Although Java was designed for interpretation, there is technically nothing about Java that prevents on-the-fly compilation of byte code into native code. Sun has just completed its Just

in Time (JIT) compiler for byte code. When the JIT compiler is a part of JVM, it compiles byte code into executable code in real time, on a piece-by-piece, demand basis. It is not possible to compile an entire Java program into executable code all at once, because Java performs various run-time checks that can be done only at run time. The JIT compiles code, as it is needed, during execution.

## Java Virtual Machine (JVM)

Beyond the language, there is the Java virtual machine. The Java virtual machine is an important element of the Java technology. The virtual machine can be embedded within a web browser or an operating system. Once a piece of Java code is loaded onto a machine, it is verified. As part of the loading process, a class loader is invoked and does byte code verification makes sure that the code that's has been generated by the compiler will not corrupt the machine that it's loaded on. Byte code verification takes place at the end of the compilation process to make sure that is all accurate and correct. So byte code verification is integral to the compiling and executing of Java code.

## Overall Description

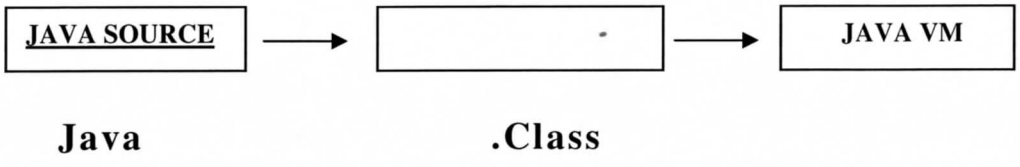



**Figure 2 Picture showing the development process of JAVA Program**

Java programming uses to produce byte codes and executes them. The first box indicates that the Java source code is located in a. Java file that is processed with a Java compiler called javac. The Java compiler produces a file called a. class file, which contains the byte code.

The class file is then loaded across the network or loaded locally on to the machine into the execution environment is the Java virtual machine, which interprets and executes the byte code.

## Java Architecture

Java architecture provides a portable, robust, high performing environment for development. Java provides portability by compiling the byte codes for the Java Virtual Machine, which is then interpreted on each platform by the run-time environment. Java is a dynamic system, able to load code when needed from a machine in the same room or across the planet.

## Compilation of code

When you compile the code, the Java compiler creates machine code (called byte code) for a hypothetical machine called Java Virtual Machine (JVM). The JVM is supposed to execute the byte code. The JVM is created for overcoming the issue of portability. The code is written and compiled for one machine and interpreted on all machines. This machine is called Java Virtual Machine.

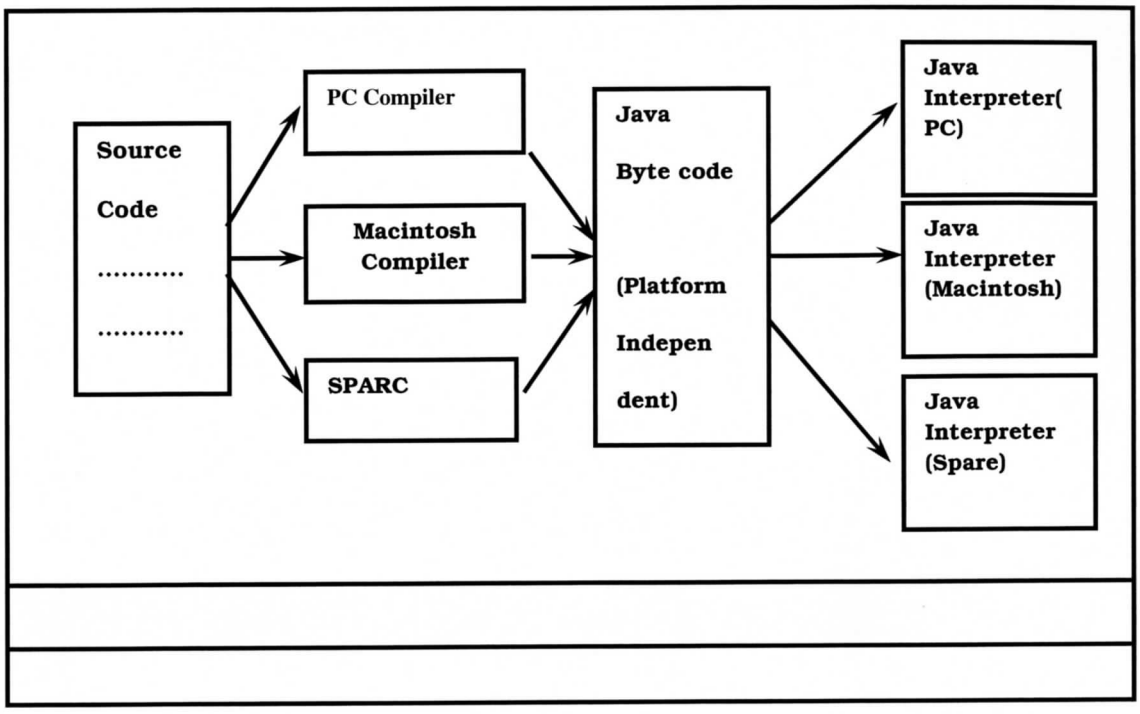



**Figure 3 Compiling and interpreting Java Source Code**

During run-time the Java interpreter tricks the byte code file into thinking that it is running on a Java Virtual Machine. In reality this could be a Intel Pentium Windows 95 or Sun SARC station running Solaris or Apple Macintosh running system and all could receive code from any computer through Internet and run the Applets.

Java was designed to be easy for the Professional programmer to learn and to use effectively. If you are an experienced C++ programmer, learning Java will be even easier. Because Java inherits the C/C++ syntax and many of the objects oriented features of C++. Most of the confusing concepts from C++ are either left out of Java or implemented in a cleaner, more approachable manner. In Java there are a small number of clearly defined ways to accomplish a given task.

## 6.3. SERVLETS

### Introduction

The Java web server is Java Soft's own web Server. The Java web server is just a part of a larger framework, intended to provide you not just with a web server, but also with tools. To build customized network servers for any Internet or Intranet client/server system. Servlets are to a web server, how applets are to the browser.

### About Servlets

Servlets provide a Java-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.

For example, an HTTP Servlets can be used to generate dynamic HTML content. When you use Servlets to do dynamic content you get the following advantages

- They're faster and cleaner than CGI scripts.
- They use a standard API (the Servlets API).

- They provide all the advantages of Java (run on a variety of servers without needing to be rewritten).

## Attractiveness of Servlets

There are many features of Servlets that make them easy and attractive to use. These include

- Easily configured using the GUI-based Admin tool
- Can be loaded and invoked from a local disk or remotely across the network.
- Can be linked together, or chained, so that one Servlets can call another Servlets, or several Servlets in sequence.
- Can be called dynamically from within HTML pages, using server-side include tags.
- Are secure - even when downloading across the network, the Servlets security model and Servlets sandbox protect your system from unfriendly behavior.

## Features of Servlets

Servlets are persistent. Servlet are loaded only by the web server and can maintain services between requests.

- Servlets are fast. Since Servlets only need to be loaded once, they offer much better performance over their CGI counterparts.
- Servlets are platform independent.
- Servlets are extensible. Java is a robust, object-oriented programming language, which easily can be extended to suit your needs
- Servlets are secure.
- Servlets can be used with a variety of clients.

## Loading Servlets

Servlets can be loaded from three places

From a directory that is on the CLASSPATH. The CLASSPATH of the Java Web Server includes service root/classes/ which is where the system classes reside.

**From the <SERVICE_ROOT /Servlets/ directory**: This is *not* in the server's class path. A class loader is used to create Servlets from this directory. New Servlets can be added - existing Servlets can be recompiled and the server will notice these changes.

**From a remote location**: For this a code base like http: // nine.eng / classes / foo / is required in addition to the Servlets class name. Refer to the admin GUI docs on Servlet section to see how to set this up.

Loading Remote Servlets

Remote Servlets can be loaded by:

Configuring the Admin Tool to setup automatic loading of remote Servlets

Setting up server side include tags in. shtml files

Defining a filter chain configuration

## Invoking Servlets

A Servlet invoker is a Servlet that invokes the "service" method on a named Servlet. If the Servlet is not loaded in the server, then the invoker first loads the Servlet (either from local disk or from the network) and the then invokes the "service" method. Also like applets, local Servlets

in the server can be identified by just the class name. In other words, if a Servlet name is not absolute, it is treated as local.

## A client can invoke Servlets in the following ways:

- The client can ask for a document that is served by the Servlet.
- The client (browser) can invoke the Servlet directly using a URL, once it has been mapped using the Servlet Aliases section of the admin GUI.
- The Servlet can be invoked through server side include tags.
- The Servlet can be invoked by placing it in the Servlets/ directory.
- The Servlet can be invoked by using it in a filter chain.

### 6.4. JAVASCRIPT

JavaScript is a script-based programming language that was developed by Netscape Communication Corporation. JavaScript was originally called Live Script and renamed as JavaScript to indicate its relationship with Java. JavaScript supports the development of both client and server components of Web-based applications. On the client side, it can be used to write programs that are executed by a Web browser within the context of a Web page. On the server side, it can be used to write Web server programs that can process information submitted by a Web browser and then update the browser's display accordingly.

Even though JavaScript supports both client and server Web programming, we prefer JavaScript at Client side programming since most of the browsers supports it. JavaScript is almost as easy to learn as HTML, and JavaScript statements can be included in HTML documents by enclosing the statements between a pair of scripting tags.

<SCRIPTS>.. </SCRIPT>.

<SCRIPT LANGUAGE = "JavaScript">

JavaScript statements

</SCRIPT>

Here are a few things we can do with JavaScript:

- Validate the contents of a form and make calculations.
- Add scrolling or changing messages to the Browser's status line.
- Animate images or rotate images that change when we move the mouse over them.
- Detect the browser in use and display different content for different browsers.
- Detect installed plug-ins and notify the user if a plug-in is required.
- We can do much more with JavaScript, including creating entire application.

## Advantages of Java Scripts

- JavaScript can be used for Sever-side and Client-side scripting.
- It is more flexible than VBScript.
- JavaScript is the default scripting languages at Client-side since all the browsers supports it.

### 6.5. HYPER TEXT MARKUP LANGUAGE (HTML)

Hypertext Markup Language (HTML), the languages of the World Wide Web (WWW), allows users to produces Web pages that include text, graphics and pointer to other Web pages (Hyperlinks).

HTML is not a programming language but it is an application of ISO Standard 8879, SGML (Standard Generalized Markup Language), but specialized to hypertext and adapted to the Web. The idea behind Hypertext is that instead of reading text in rigid linear structure, we can easily jump from one point to another point. We can navigate through the information based on our interest and preference. A markup language is simply a series of elements, each delimited with special characters that define how text or other items enclosed within the elements should be displayed. Hyperlinks are underlined or emphasized works that load to other documents or some portions of the same document. HTML can be used to display any type of document on the host computer, which can be geographically at a different location. It is a versatile language and can be used on any platform or desktop.

HTML provides tags (special codes) to make the document look attractive. HTML tags are not case-sensitive. Using graphics, fonts, different sizes, color, etc., can enhance the presentation of the document. Anything that is not a tag is part of the document itself.

**Here are some of the basic HTML tags:**

<! -- --> Specifies comments

<A>.....</A> Creates hypertext links

<B>.....</B> Formats text as bold

<BIG>.....</BIG> Formats text in large font.

<BODY>...</BODY> Contains all tags and text in the HTML document

<CENTER>...</CENTER> Creates text

<DD>…</DD> Definition of a term

<DL>...</DL> Creates definition list

<FONT>…</FONT> Formats text with a particular font

<FORM>...</FORM>Encloses a fill-out form

<FRAME>...</FRAME> Defines a particular frame in a set of frames

<H#>…</H#>Creates headings of different levels

<HEAD>...</HEAD> Contains tags that specify information about a document

<HR>...</HR> Creates a horizontal rule

<HTML>…</HTML> Contains all other HTML tags

<META>...</META>Provides meta-information about a document

<SCRIPT>…</SCRIPT> Contains client-side or server-side script

<TABLE>…</TABLE> Creates a table

<TD>…</TD> Indicates table data in a table

<TR>…</TR> Designates a table row

<TH>…</TH> Creates a heading in a table

## Advantages of HTML

- A HTML document is small and hence easy to send over the net. It is small because it does not include formatted information.

- HTML is platform independent.
- HTML tags are not case-sensitive.

### 6.6. JAVA DATABASE CONNECTIVITY

## What Is JDBC?

JDBC is a Java API for executing SQL statements. (As a point of interest, JDBC is a trademarked name and is not an acronym; nevertheless, JDBC is often thought of as standing for Java Database Connectivity. It consists of a set of classes and interfaces written in the Java programming language. JDBC provides a standard API for tool/database developers and makes it possible to write database applications using a pure Java API.

Using JDBC, it is easy to send SQL statements to virtually any relational database. One can write a single program using the JDBC API, and the program will be able to send SQL statements to the appropriate database. The combinations of Java and JDBC lets a programmer write it once and run it anywhere.

## What Does JDBC Do?

JDBC makes it possible to do three things.

- Establish a connection with a database
- Send SQL statements
- Process the results.

## Two-tier and Three-tier Models

The JDBC API supports both two-tier and three-tier models for database access. In the two-tier model, a Java applet or application talks directly to the database. This requires a JDBC driver that can communicate with the particular database management system being accessed. A user's SQL statements are delivered to the database, and the results of those statements are sent back to the user. The database may be located on another machine to which the user is connected via a network. This is referred to as a client/server configuration, with the user's machine as the client, and the machine housing the database as the server. The network can be an Intranet, which, for example, connects employees within a corporation, or it can be the Internet.

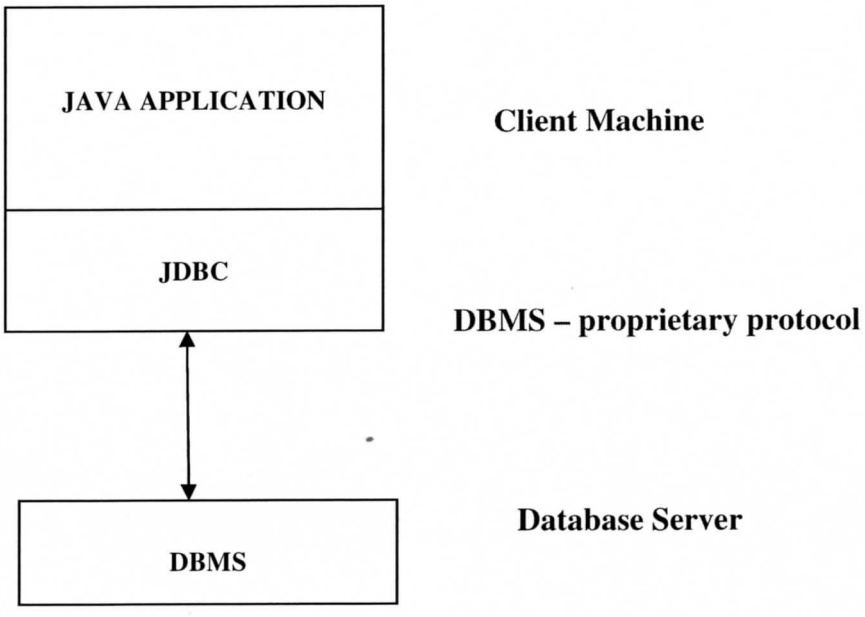



**Figure 4 Two tier Model**

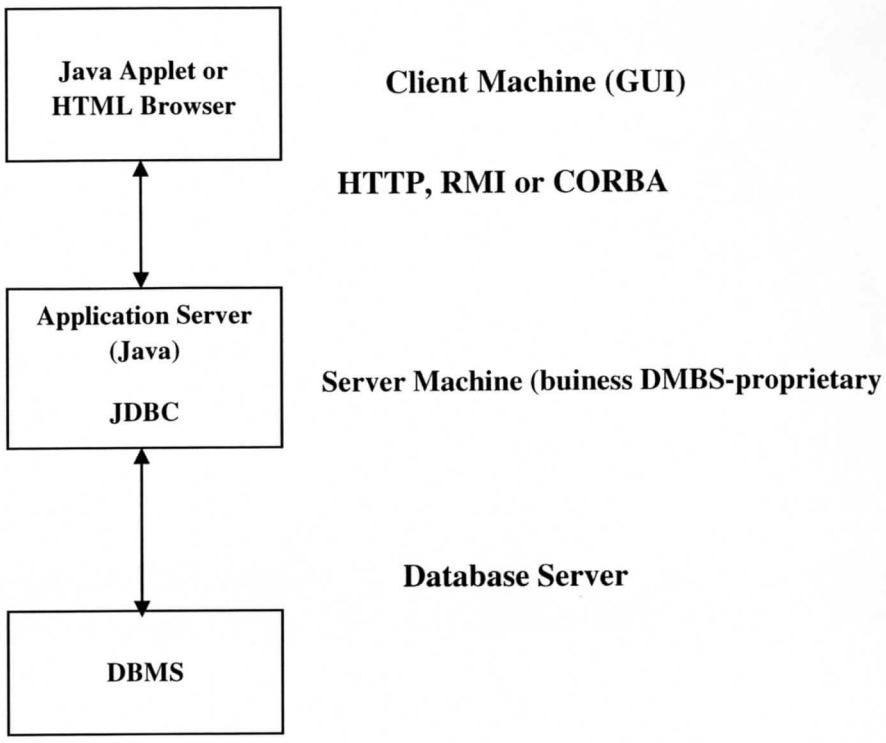



**Figure 5 Three Tier Model**

In the three-tier model, commands are sent to a "middle tier" of services, which then send SQL statements to the database. The database processes the SQL statements and sends the results back to the middle tier, which then sends them to the user. MIS directors find the three-tier model very attractive because the middle tier makes it possible to maintain control over access and the kinds of updates that can be made to corporate data. Another advantage is that when there is a middle tier, the user can employ an easy-to-use higher-level API which is translated by the middle tier into the appropriate low-level calls. Finally, in many cases the three-tier architecture can provide performance advantages.

Until now the middle tier has typically been written in languages such as C or C++, which offer fast performance. However, with the introduction of optimizing compilers that translate Java byte code into efficient machine-specific code, it is becoming practical to

implement the middle tier in Java. This is a big plus, making it possible to take advantage of Java's robustness, multithreading, and security features. JDBC is important to allow database access from a Java middle tier.

## JDBC-ODBC Bridge

If possible, use a Pure Java JDBC driver instead of the Bridge and an ODBC driver. This completely eliminates the client configuration required by ODBC. It also eliminates the potential that the Java VM could be corrupted by an error in the native code brought in by the Bridge (that is, the Bridge native library, the ODBC driver manager library, the ODBC driver library, and the database client library).

## What Is the JDBC- ODBC Bridge?

The JDBC-ODBC Bridge is a JDBC driver, which implements JDBC operations by translating them into ODBC operations. To ODBC it appears as a normal application program. The Bridge implements JDBC for any database for which an ODBC driver is available. The Bridge is implemented as the Sun.jdbc.odbc Java package and contains a native library used to access ODBC. The Bridge is a joint development of Innersole and Java Soft.

## Java Server Pages (JSP)

Java server Pages is a simple, yet powerful technology for creating and maintaining dynamic-content web pages. Based on the Java programming language, Java Server Pages offers proven portability, open standards, and a mature re-usable component model .The Java Server Pages architecture enables the separation of content generation from content presentation. This separation not eases maintenance headaches; it also allows web team members to focus on their

areas of expertise. Now, web page designer can concentrate on layout, and web application designers on programming, with minimal concern about impacting each other's work.

## Features of JSP

## Portability

Java Server Pages files can be run on any web server or web-enabled application server that provides support for them. Dubbed the JSP engine, this support involves recognition, translation, and management of the Java Server Page lifecycle and its interaction components.

## Components

It was mentioned earlier that the Java Server Pages architecture can include reusable Java components. The architecture also allows for the embedding of a scripting language directly into the Java Server Pages file. The components current supported include Java Beans, and Servlets.

## Processing

A Java Server Pages file is essentially an HTML document with JSP scripting or tags. The Java Server Pages file has a JSP extension to the server as a Java Server Pages file. Before the page is served, the Java Server Pages syntax is parsed and processed into a Servlet on the server side. The Servlet that is generated outputs real content in straight HTML for responding to the client.

## Access Models

A Java Server Pages file may be accessed in at least two different ways. A client's request comes directly into a Java Server Page. In this scenario, suppose the page accesses

reusable Java Bean components that perform particular well-defined computations like accessing a database. The result of the Beans computations, called result sets is stored within the Bean as properties. The page uses such Beans to generate dynamic content and present it back to the client.

In both of the above cases, the page could also contain any valid Java code. Java Server Pages architecture encourages separation of content from presentation.

**Steps in the execution of a JSP Application:**

- The client sends a request to the web server for a JSP file by giving the name of the JSP file within the form tag of a HTML page.
- This request is transferred to the JavaWebServer. At the server side JavaWebServer receives the request and if it is a request for a jsp file server gives this request to the JSP engine.

JSP engine is program which can understand the tags of the jsp and then it converts those tags into a Servlet program and it is stored at the server side. This Servlet is loaded in the memory and then it is executed and the result is given back to the Java Web Server and then it is transferred back to the result is given back to the Java Web Server and then it is transferred back to the client.

## JDBC Connectivity

The JDBC provides database-independent connectivity between the J2EE platform and a wide range of tabular data sources. JDBC technology allows an Application Component Provider to

- Perform connection and authentication to a database server
- Manager transactions
- Move SQL statements to a database engine for preprocessing and execution
- Execute stored procedures
- Inspect and modify the results from Select statements

## Purpose

The generated application is the first version upon the system. The overall system is planned to be in the formal of distributed architecture with homogeneous database platform. The major objective of the overall system is to keep the following components intact.

- System consistency
- System integrity
- Overall security of data
- Data reliability and Accuracy
- User friendly name both at administration and user levels
- Considering the fact of generality and clarity
- To cross check that the system overcomes the hurdles of the version specific standards

## Web Application Archives

Web clients are packaged in Web application archives. In addition to Web components, a Web application archive usually contains other files, including the following

- Server-side utility classes (database beans, shopping carts, and so on). Often these classes conform to the JavaBeans component architecture.
- Static Web content (HTML, image, and sound files, and so on).
- Client-side classes (applets and utility classes).

The top-level directory of a WAR is the *document root* of the application. The document root is where JSP pages, client-side classes and archives, and static Web resources are stored. The document root contains a subdirectory called WEB-INF, which contains the following files and directories

- **web.xml:** The Web application deployment descriptor
- Tag library descriptor files.
- **classes:** A directory that contains server-side classes: servlets, utility classes, and JavaBeans components
- **lib:** A directory that contains JAR archives of libraries (tag libraries and any utility libraries called by server-side classes).

## 6.7. STRUCTURED QUERY LANGUAGE (SQL)

SQL (Pronounced Sequel) is the programming language that defines and manipulates the database. SQL databases are relational databases; this means simply the data is stored in a set of simple relations. A database can have one or more tables. We can define and manipulate data in a table with SQL commands. We use the data definition language (DDL) commands to create and alter the databases and tables. We can also update, delete or retrieve data in a table with data manipulation commands (DML). DML commands include commands to alter and fetch data.

The most common SQL commands include commands is the SELECT command, which allows us to retrieve data from the database.

In addition to SQL commands, the oracle server has a procedural language called PL/SQL. PL/SQL enables the programmer to program SQL statement. It allows you to control the flow of a SQL program, to use variables, and to write error-handling procedures.

# 7. IMPLEMENTATION

Once the system has been designed, the next step is to convert the designed one in to actual code, so as to satisfy the user requirements as expected. If the system is approved to be error free it can be implemented.

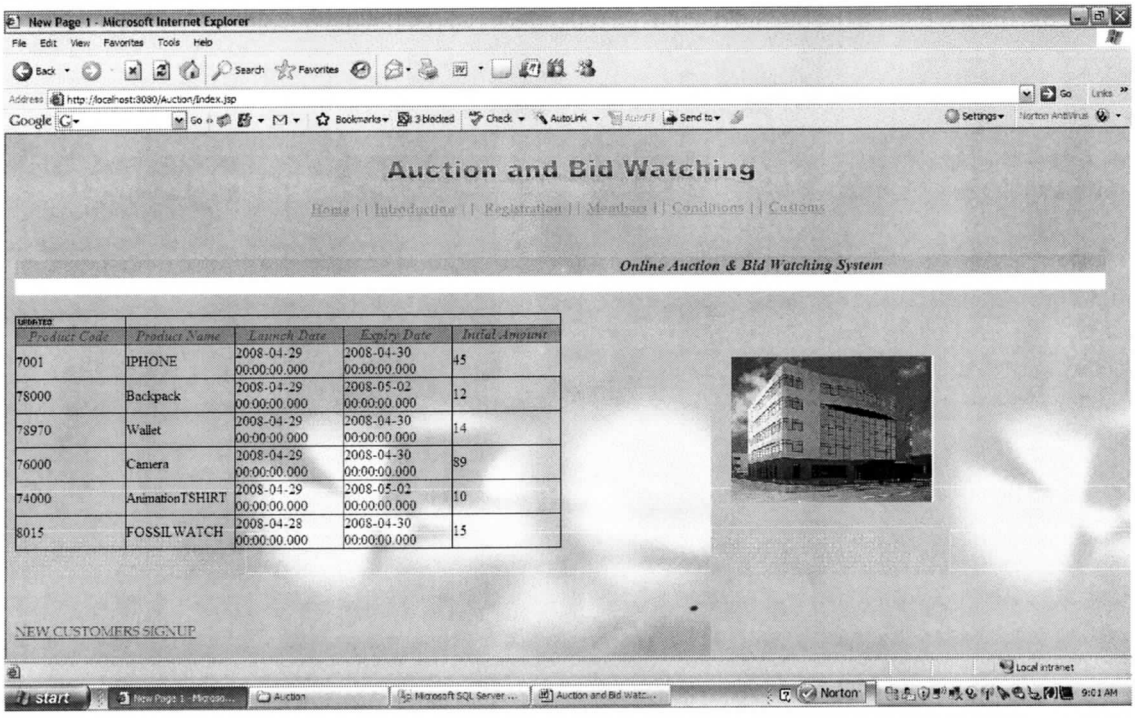
When the initial design was done for the system, the department is consulted for acceptance of the design so that further proceedings of the system development can be carried on. After the development of the system a demonstration was given to them about working of the system. The aim of the system illustration was to identify any malfunctioning of the system.

Implementation includes proper training to end-users. The implemented software should be maintained for prolonged running of the software. Initially the system runs parallel to the manual system. The system has been tested with data and has proved to be error-free and user-friendly. Training was given to end -user about the software and its features.

# 8. SCREEN SHOTS

Below is the Home page of the project. It helps the user to see the updated product list and if the user wants to buy a desired product then he can go ahead and register in to the system by which he can bid on a certain product. If the user is a customs officer then he can go directly to the customs login page in order to retrieve members and product list.

Index page: http://localhost:8080/Auction/Index.jsp




| Product Code | Product Name | Launch Date | Expiry Date | Initial Amount |
|---|---|---|---|---|
| 7001 | IPHONE | 2008-04-29 00:00:00.000 | 2008-04-30 00:00:00.000 | 45 |
| 78000 | Backpack | 2008-04-29 00:00:00.000 | 2008-05-02 00:00:00.000 | 12 |
| 78970 | Wallet | 2008-04-29 00:00:00.000 | 2008-04-30 00:00:00.000 | 14 |
| 76000 | Camera | 2008-04-29 00:00:00.000 | 2008-04-30 00:00:00.000 | 89 |
| 74000 | AnimationTSHIRT | 2008-04-29 00:00:00.000 | 2008-05-02 00:00:00.000 | 10 |
| 8015 | FOSSILWATCH | 2008-04-28 00:00:00.000 | 2008-04-30 00:00:00.000 | 15 |

**Figure 6 Auction & Bid Watching System**

## 8.1.INTRODUCTORY PAGE

This page explains about the E-Auction and bidding a product and it also gives rules for registration.

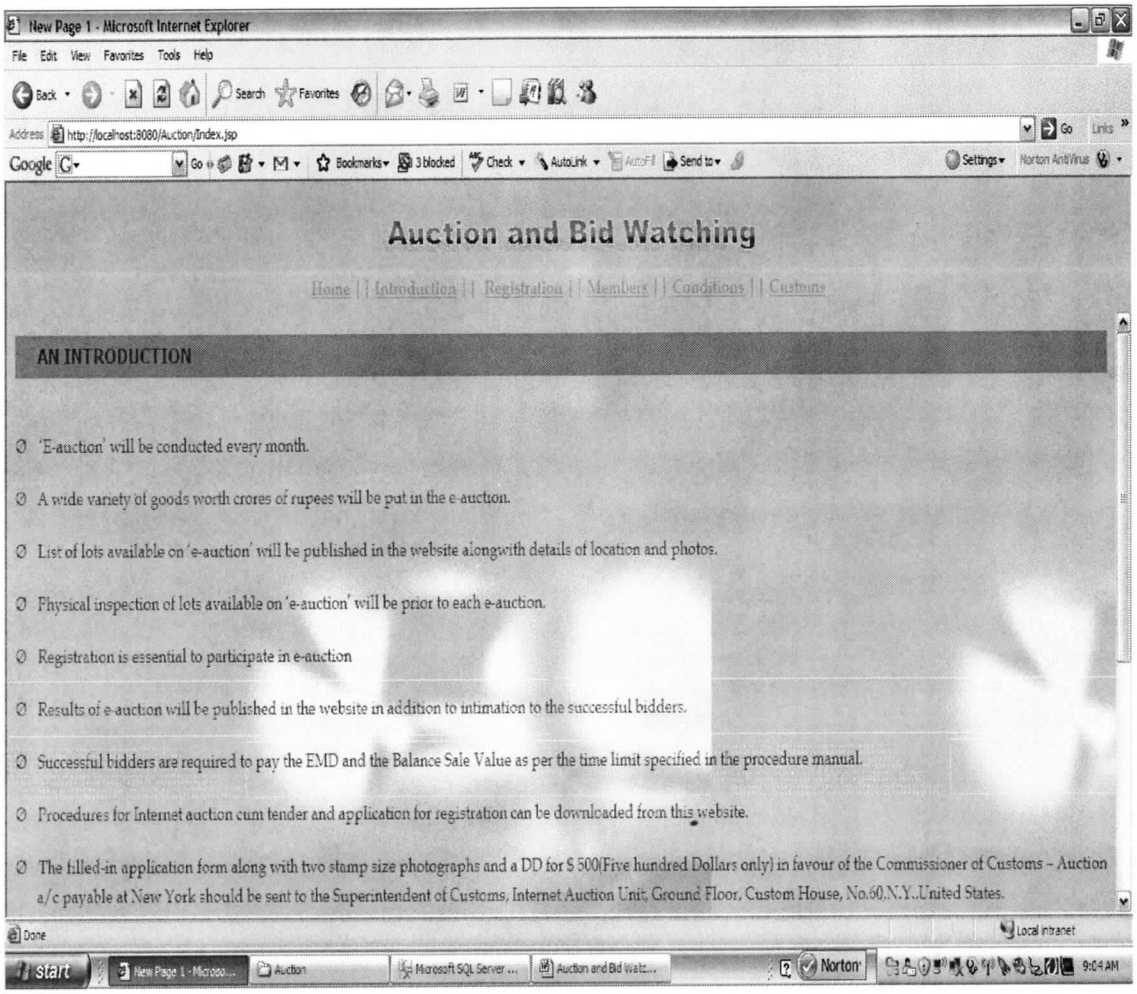



**Figure 7 Introductory Page**

## 8.2. REGISTRATION

When a user clicks on registration link, the following page will be displayed. Most of the fields are mandatory. Username and password are used to access the system. The Credit card number field is very important that member has to give the proper size.

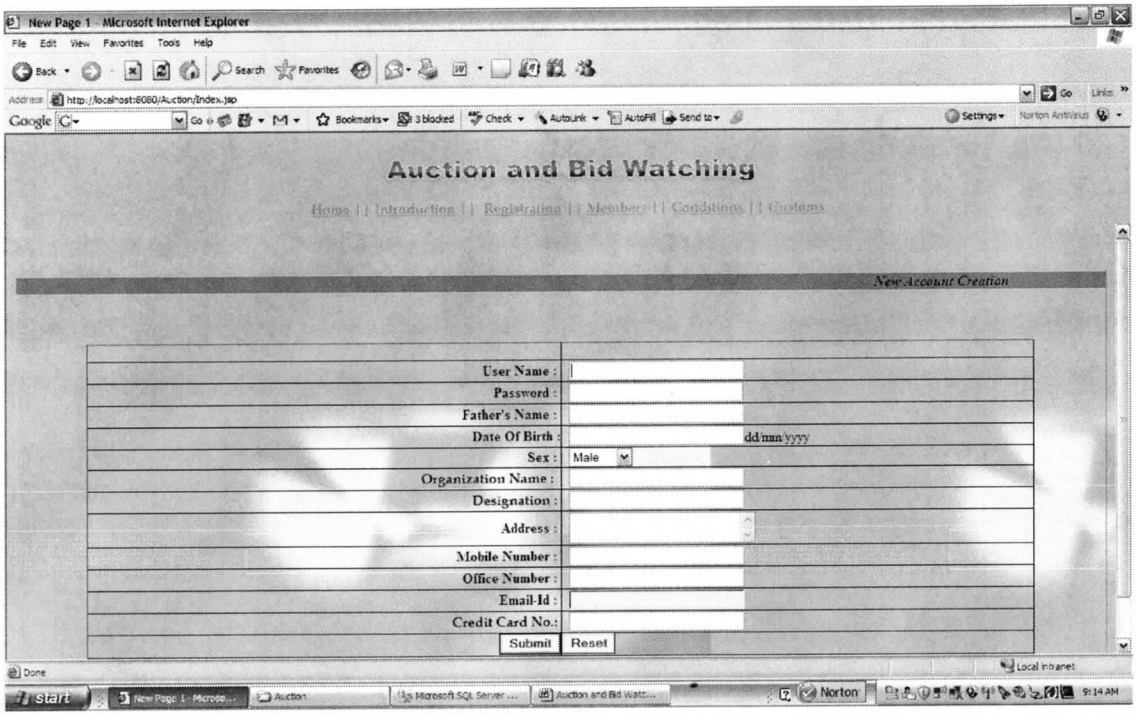



**Figure 8 Registration Page**

Once submit button is pressed, a succeeded validation page will be displayed.

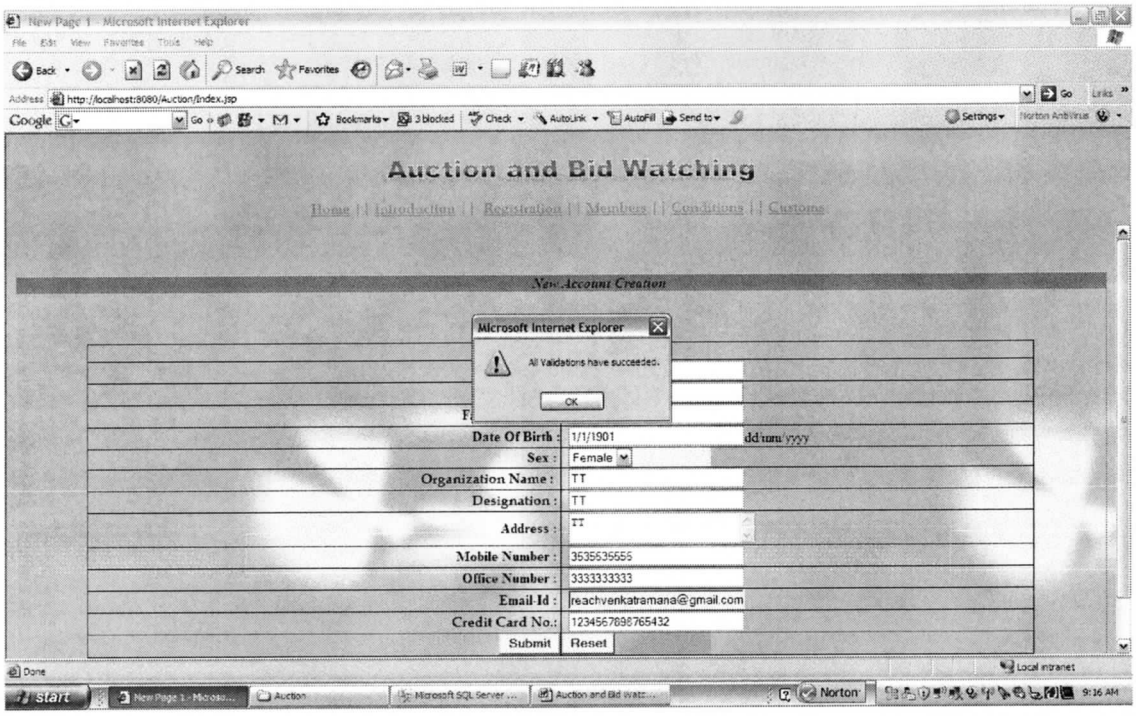



**Figure 9 New Account Validation Successful**

After Validations, a confirmation message will be displayed with an option to login to the members' page.

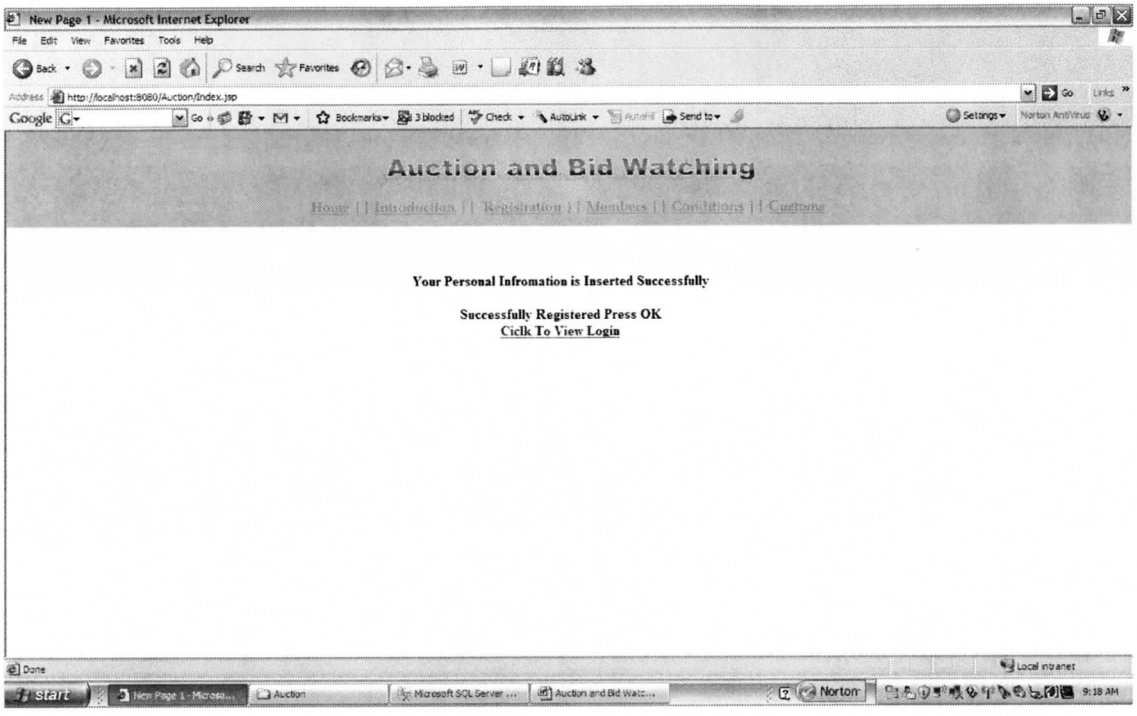



**Figure 10 Validation Confirmation Page**

## 8.3. LOGIN PAGE

By entering valid username and password, a user can login.

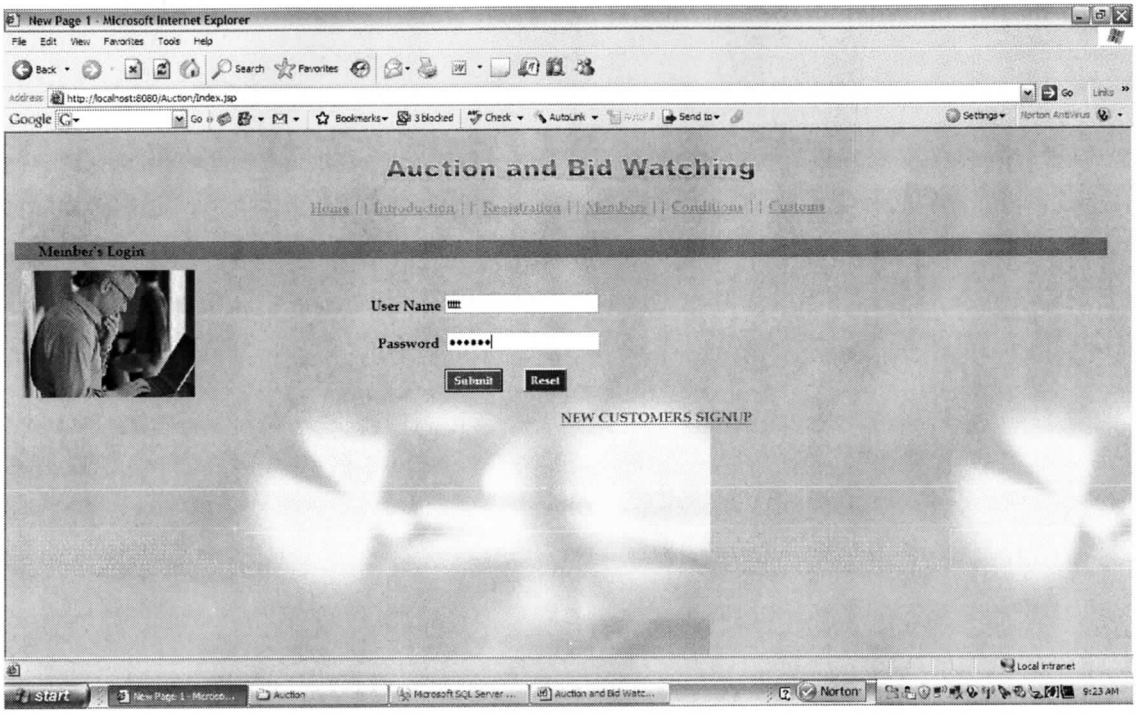



**Figure 11 Login Page**

## 8.4. PRODUCT LIST PAGE

This page gives information about the products, expiry date and initial amount.

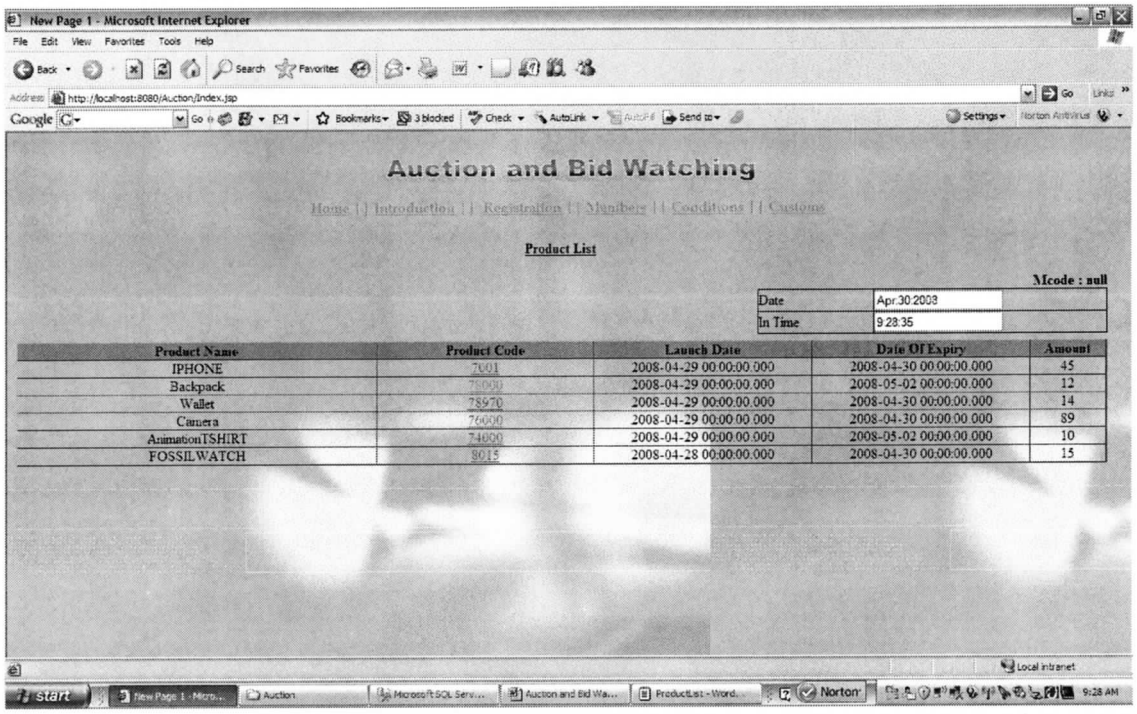



**Figure 12 Product List Page**

## 8.5. BIDDING PAGE

If we click on a certain product code, then details of the product page will be displayed. A bidding operation that is seen on the bottom of the page helps users to bid an amount.

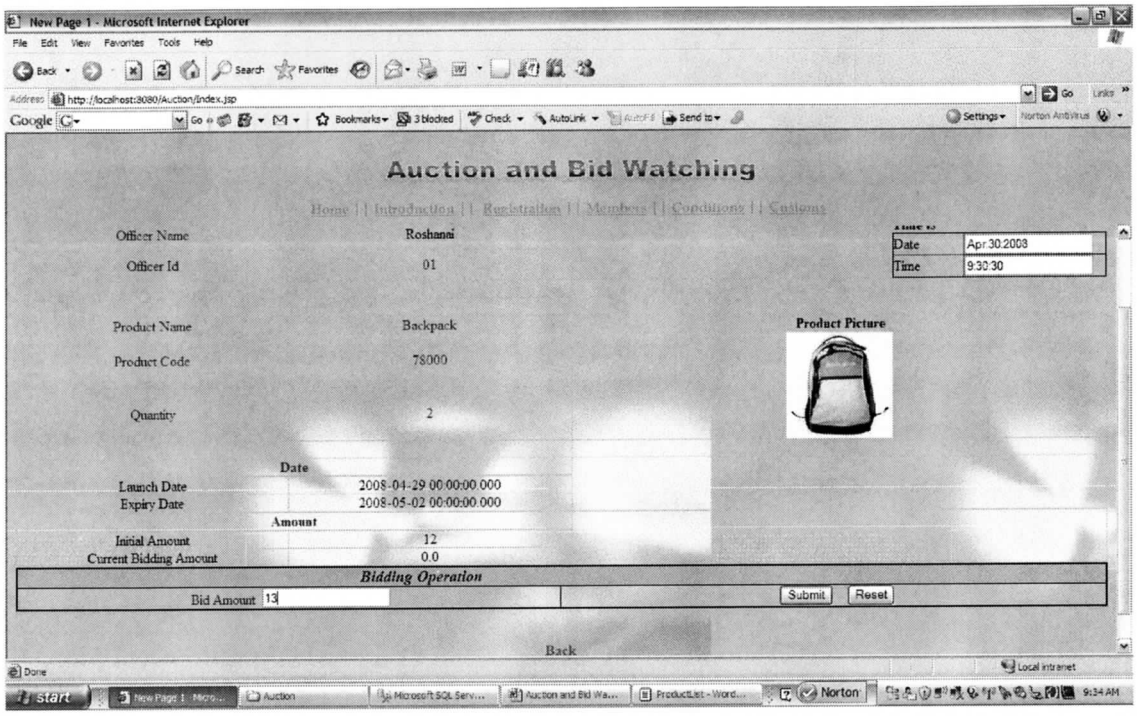



**Figure 13 Bidding Page**

Once a submit button is pressed, a confirmation message is displayed-"**OPERATION IS SUCCESSFULL "**

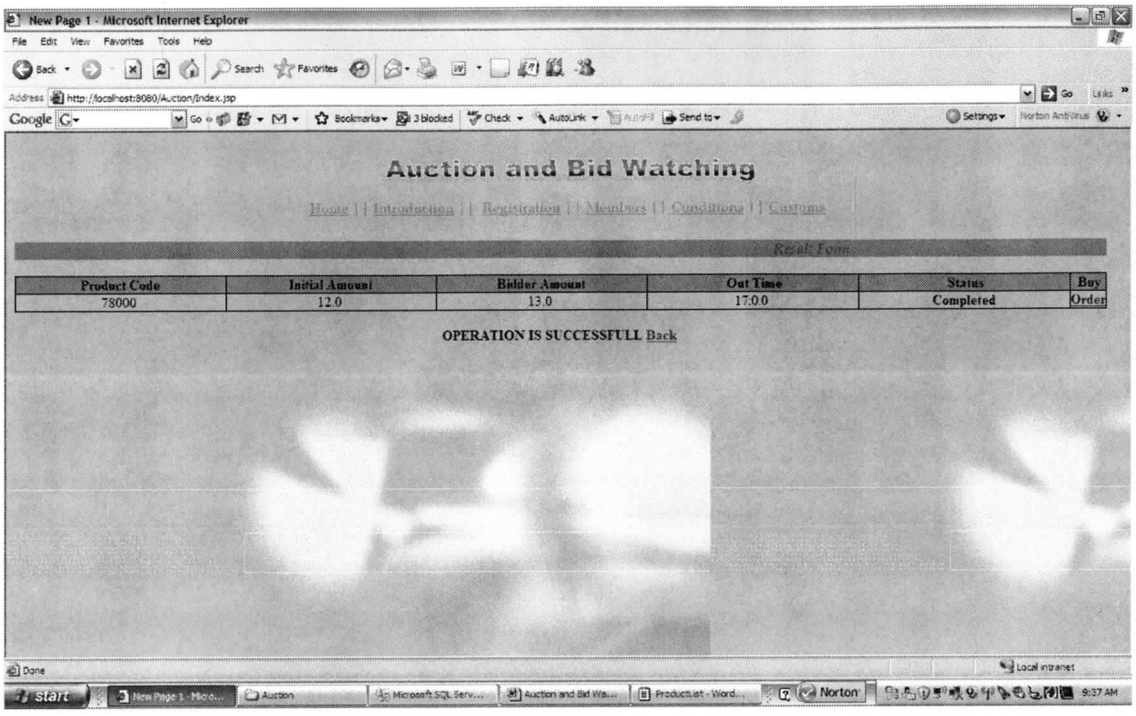



**Figure 14 Bidding Successful Confirmation Page**

If the member finds the product is with a better price then he can go ahead and order for the product by clicking on the order link displayed on the right hand side corner of the page.

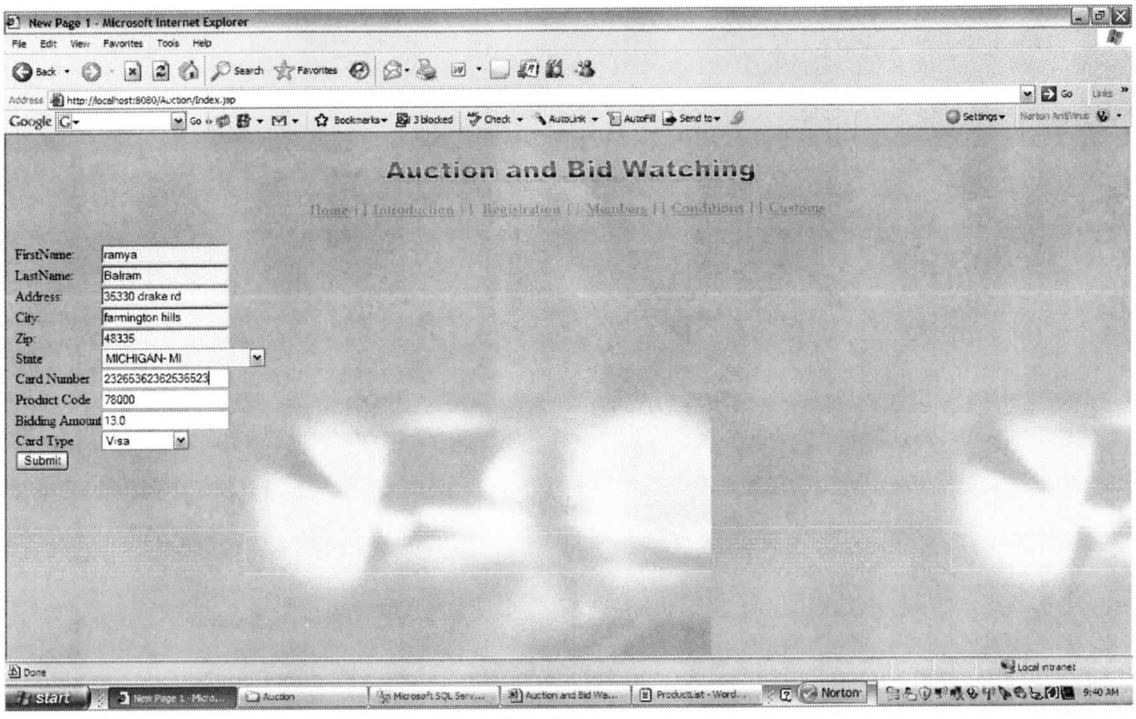



**Figure 15 Order Link Page**

After entering all the information of the user like full name, address, card details and the bidding amount. Once a submit button is pressed, a confirmation message is displayed- **"Transaction Completed ".**

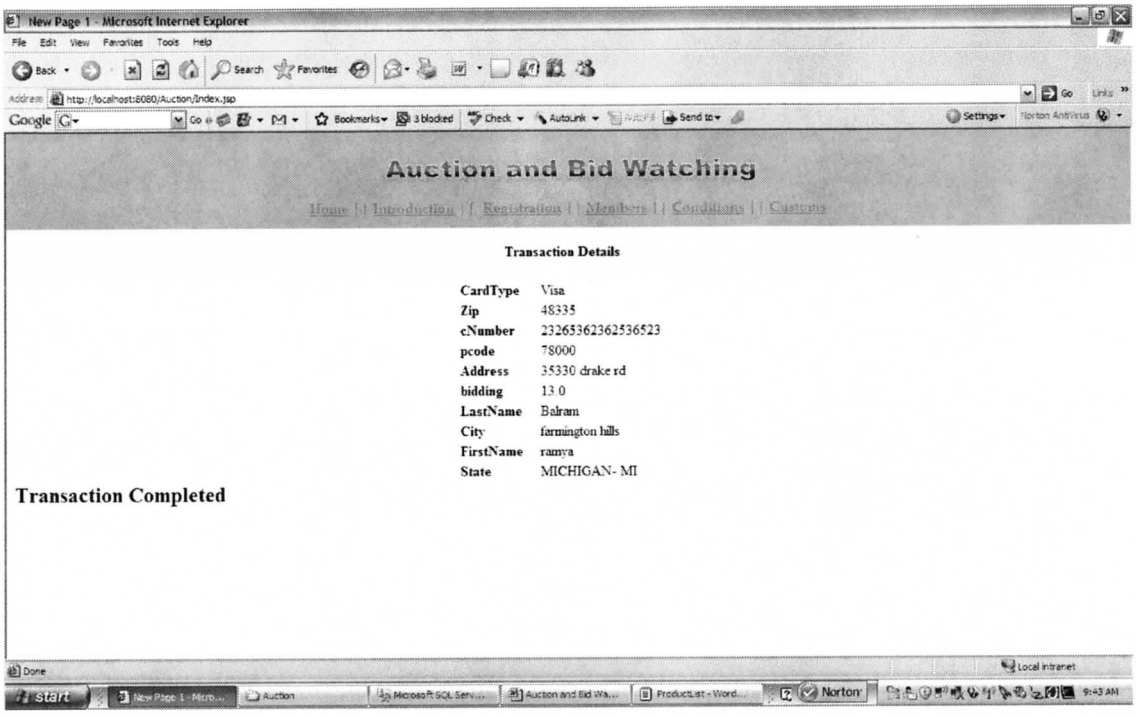



**Figure 16** Transaction Completed Page

## 8.6. CUSTOMS OFFICER LOGIN

By using valid officers' user name and password, he/she can login to the system and can view the Product Details, Member Details and Launch new product.

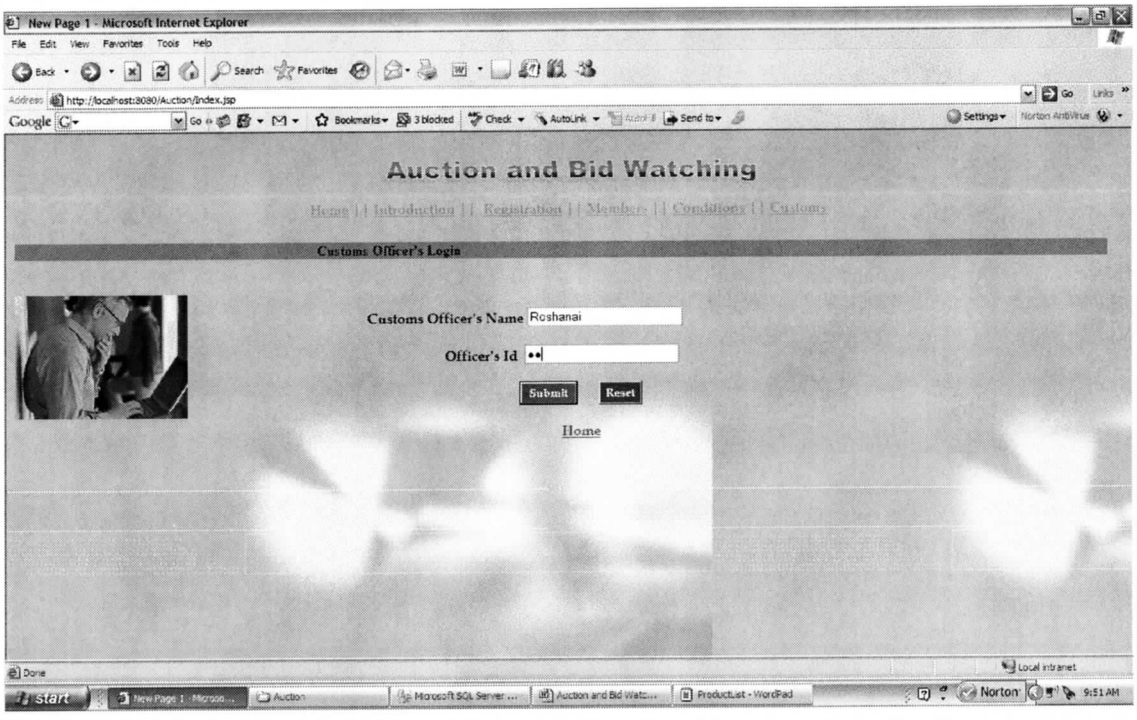



**Figure 17 Customs Officers Page**

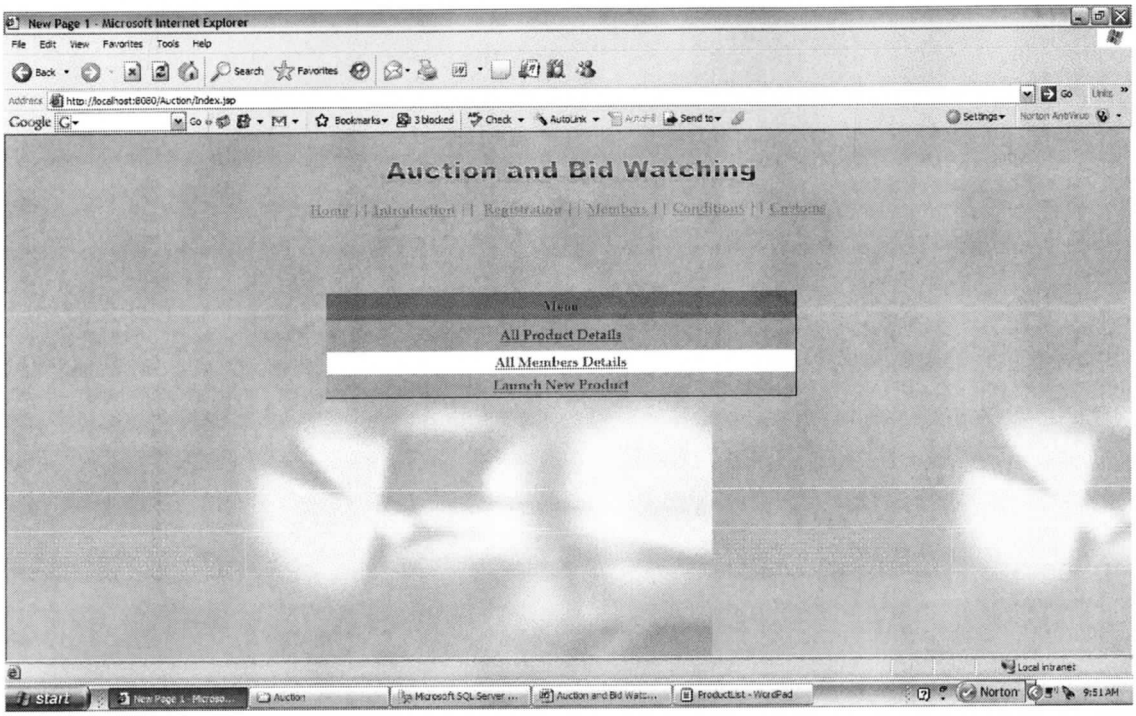



**Figure 18 Menu Page**

## 8.7. PRODUCT DETAILS

This page gives the details of the product like product name, Quantity, Launch and expiry dates, initial amount and options to modify/delete the product.

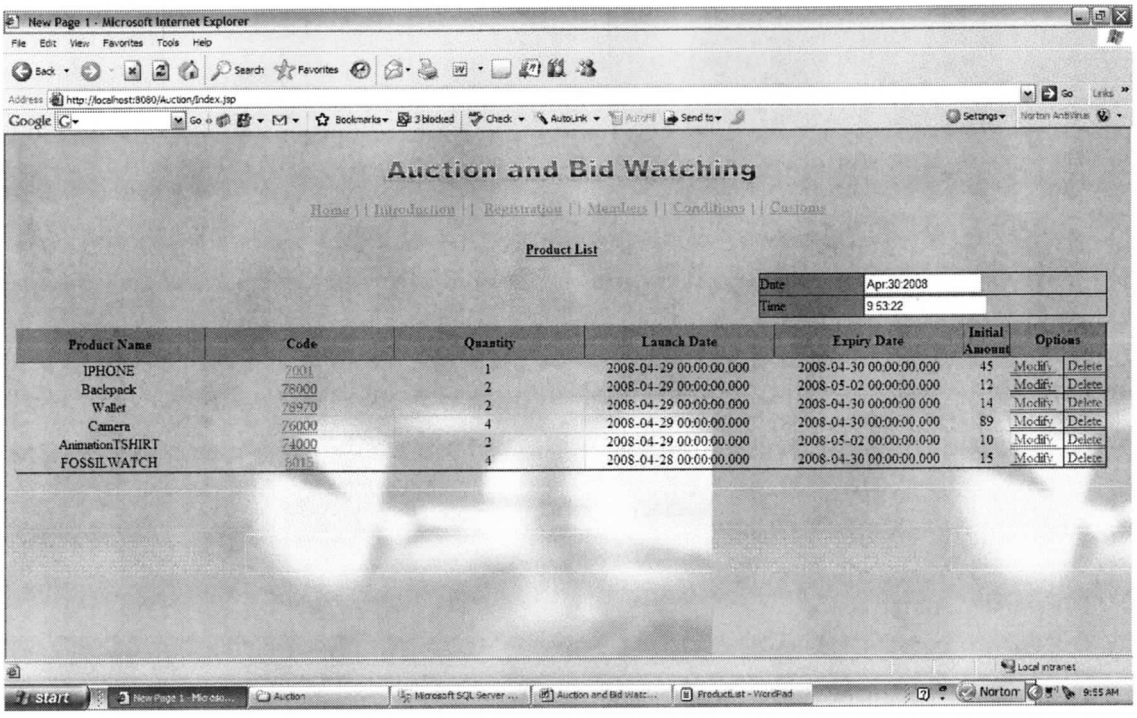



**Figure 19 Product Details Page**

## 8.8. MEMBERS DETAILS

This page gives the details of the members like members name, ID, Organization, contact information, card details and option to modify/delete the member.

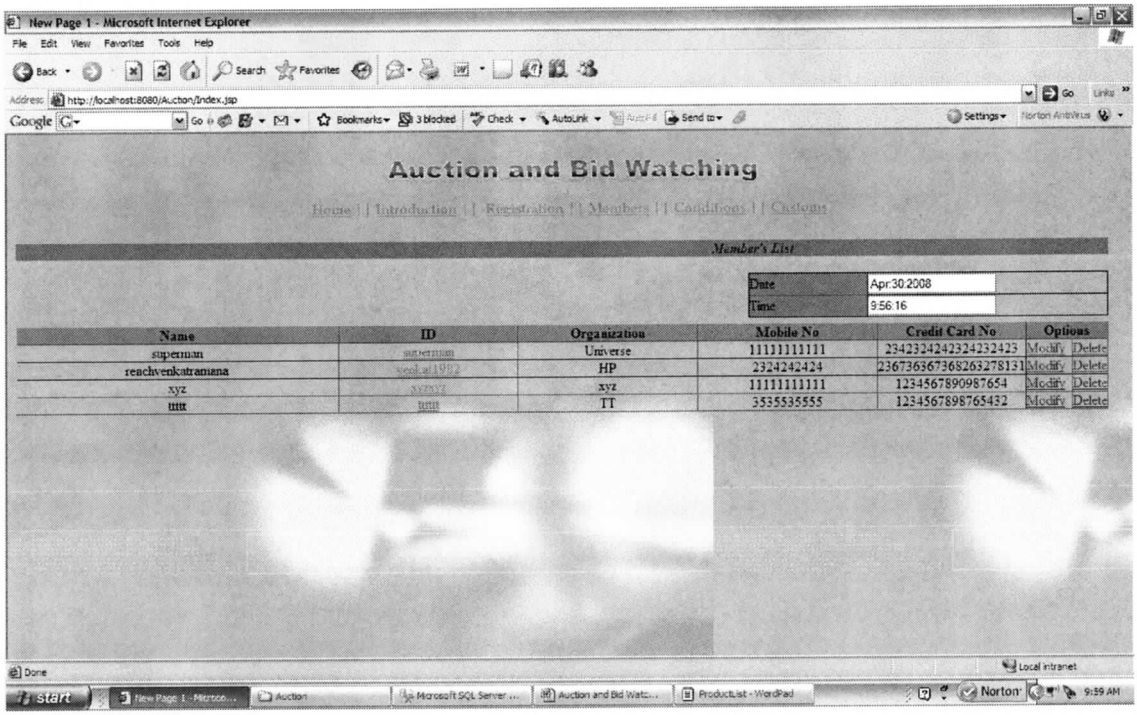



**Figure 20 Member Details Page**

## 8.9. LAUNCH NEW PRODUCT

This page helps to launch new product by customs officer.

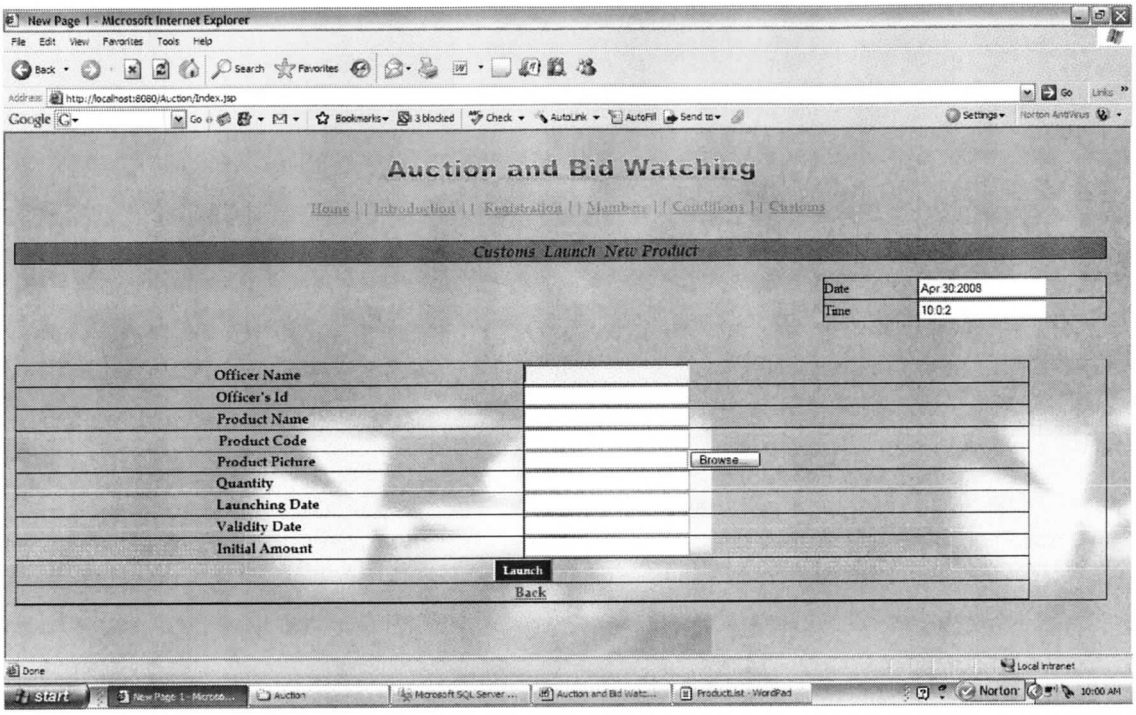



**Figure 21 Launch New Product Page**

# 9. TESTING

Software testing is a critical element of software quality assurance and represents the ultimate reviews of specification, design and coding. Testing represents interesting anomaly for the software. During earlier definition and development phases, it was attempted to build software from an abstract concept to tangible implementation.

The testing phase involves the testing of the developed system using various test data. Preparation of the test data plays a vital role in the system testing. After preparing the test data the system under study was tested using those test data. While testing the system, errors were found and corrected by using the following testing steps and corrections are also noted for future use. Thus, a series of testing is performed for the proposed system, before the system was ready for the implementation. The various types of testing done on the system are:

## 9.1.Unit Testing

Unit testing focuses verification effort on the similar unit of software design the form. This is known as form testing. Since the proposed project has 120 forms, the testing is done individually on each form. Using the unit test plans, prepared in design phase of the system development as a guide, important control paths are tested to uncover error within the boundary of the module. In this testing step, each module is found to be working satisfactorily, as regard to the expected output from the module.

# 10. CONCLUSION

In the present situation where the technology is the buzzword and has revolutionized the way we work and live, we would be the losers if we do not keep up with the changing world. Moreover, it makes a world of difference and a whole of sense to break-up from the age old work culture and embrace the effective, cost, and time saving ways of looking and working at things.

This is precisely where the E-Auction supports and improves many of the core functionality of the organization i.e. bidding also helps in quick easy monitoring of the reports that have been automatically generated as and when the user performs some transactions in the system. Using such a system helps the organization in minimizing the time consumed in fulfilling the day-to-day functionalities and cutting down the expenses incurred with the same.

In conclusion, the **Auction and Bid Watching** system is well structured system which helps an individual to bid on a desired product in an easy manner. Bidding a product online also helps members in minimizing the consumption of time. By this system even the management can quickly monitor the reports that have been automatically generated as and when the user performs some transactions in the system. Using such a system helps the organization cut down the expenses incurred.

The application has been computed successfully and was also tested successfully by taking "test cases".

Finally I would like to list down the goals which we have achieved through the Auction & Bid Watching project

- Instant access.
- Improved productivity.
- Optimum utilization of resources.
- Efficient management of records.
- Simplification of the operations.
- Less processing time and getting required information.
- User friendly.
- Portable and flexible for further enhancement.

# 11. FUTURE ENHANCEMENTS

It is not possible to develop a system that meets all the requirements of the user. User requirements keep changing as the system is being used. Some of the future enhancements that can be done to this system are

- As the technology emerges, it is possible to upgrade the system and can be adaptable to desired environment.
- Because it is based on object-oriented design, any further changes can be easily adaptable.
- Based on the future security issues, security can be improved using emerging technologies.

# 12. REFERENCES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# Appendix A: System Technical Documentation

## JAVA INSTALLATION

### System Requirements:

#### Software:

Java 2 SDK Standard Edition, 1.4.2 is supported on i586 Intel and 100% compatible platforms running Microsoft Windows. For a list of supported operating systems and desktop managers, see System Configuration.

#### Hardware:

Intel and 100% compatible processors are supported. A Pentium 166MHz or faster processor with at least 32 megabytes of physical RAM is required to run graphically based applications.

### Installation Procedure

In this procedure, you will run the self-installing executable to unpack and install the Java 2 SDK software bundle. As part of the Java 2 SDK, this installation includes the Java Plug-in and Java Web Start, as well as an option to include the public Java 2 Runtime Environment. After the Java 2 SDK software has been installed, you may be asked to reboot your system.

### Setting the path

- **Microsoft Windows 98**

To set the PATH permanently, open the AUTOEXEC.BAT file and add or change the PATH statement as follows

PATH C:\WINDOWS;C:\WINDOWS\COMMAND;

**C:\J2SDK1.4.2_<version>\BIN**

And then execute the following:

C :> **c:\autoexec.bat**

- **Microsoft Windows NT, 2000, and XP**

To set the PATH permanently, choose Start, Settings, Control Panel, and double-click System. On Microsoft Windows NT, select the Environment tab; on Microsoft Windows 2000 select the Advanced tab and then Environment Variables. Look for "Path" in the User Variables and System Variables. If you're not sure where to add the path, add it to the right end of the "Path" in the User Variables. A typical value for PATH is:

**C:\j2sdk1.4.2_<version>\bin**

## Apache Jakarta Tomcat

Apache Jakarta Tomcat is a Java application server, the open-source equivalent to BEA's Web Logic Server. It's also the official reference implementation for Sun's JSP and Servlet technologies. Tomcat is a pure Java web server.

## Tomcat 5.0.x.

Tomcat 5.0 improves over other versions in many ways, including:

- Performance optimizations and reduced garbage collection.
- Refectory application deplorer, with an optional standalone deplorer allowing validation and compilation of a web application before putting it in production.
- Complete server monitoring using JMX and the manager web application.
- Scalability and reliability enhancements.
- Improved Taglibs handling, including advanced pooling and tag plug in.
- Improved platform integration, with native Windows and Unix wrappers.
- Embedding of Tomcat using JMX.
- Enhanced Security Manager Support.
- Integrated session clustering.
- Expanded documentation.

## Installing and Running Tomcat

Tomcat is distributed as a ZIP archive, available from the Apache Jakarta Project. I saved it to a root-level directory, *c:\Tomcat*.

Tomcat itself is written in Java. To run Tomcat you'll need to tell it where to find your J2SE installation. To do this, put the location of your J2SE installation in the JAVA_HOME environment variable. On my machine, the variable has the value c:\j2sdk1.4.0.

To run Tomcat, open a command window. Change directories to Tomcat's *bin* directory. Type startup and stand back. A new window will open up and display copious initialization messages.We can use a browser to test if Tomcat is really running. Try to open the URL

*http://localhost:8080/* and see what happens. If Tomcat is running correctly you'll see a default page from Tomcat with links to some servlet and JSP examples.

**SQL SERVER INSTALLATION**

Although SQL Server 2000 and 2005 can exist side by side on the same machine, they have to be installed as separate named instances.

1. Insert the DVD into the DVD drive and double-click on the icon
2. The installation screen should appear.
3. For most installations, if installing on standard 32 bit Windows XP Professional, click on the x86-based operating systems option. Click on Server components, tools, Books online and samples.
4. Read the terms and conditions of the license agreement and click the check box to accept them.
5. Then click next. The Installing Prerequisites screen appears.
6. Click on the Install button and wait whilst the system components are configured. This may take 10-20 seconds. Once the prerequisites are installed, click on the Next.
7. Wait for a few seconds for the following screen to appear, and then click on Next

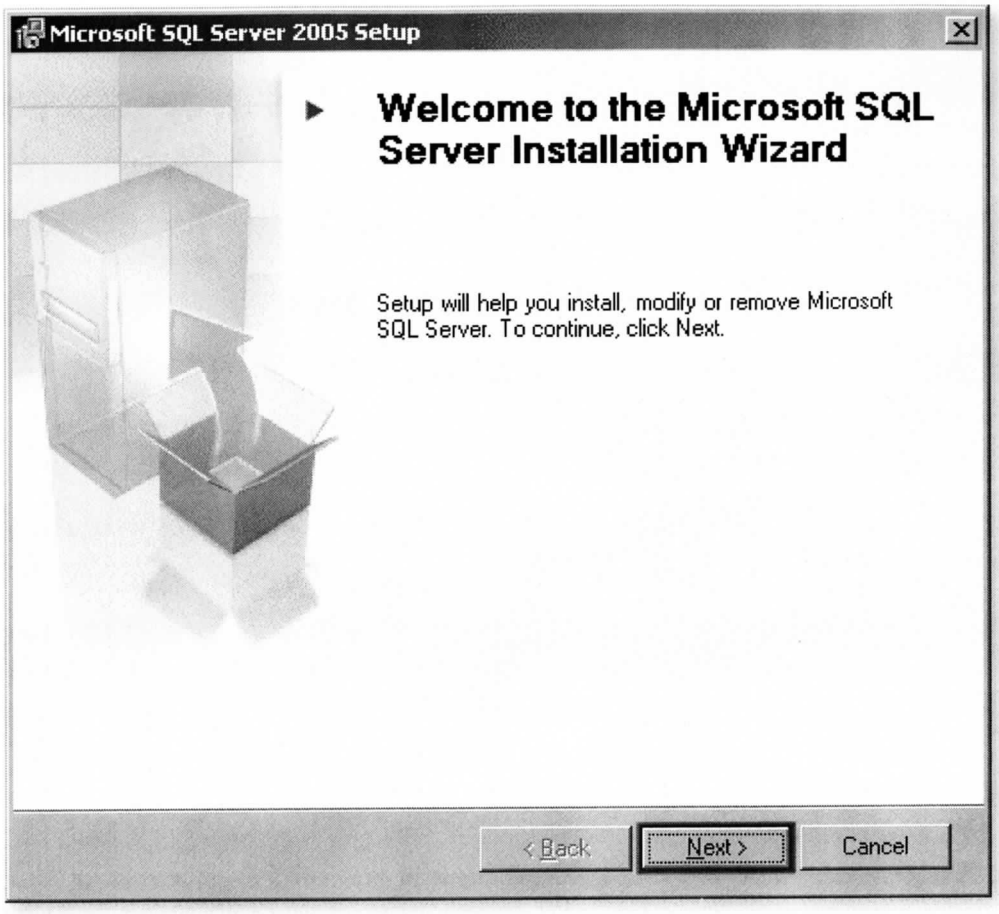


**Figure 22 Microsoft SQL Server Installation Wizard**

8. The System Configuration Check screen appears.
9. If the configuration check completes successfully (Success appears in the top panel, all ticks in the Details panel), click on Next. Fill in the Registration Information details.
10. Click on Next. Select the components to install.
11. Click on Next. Select the Default instance.
12. Select the radio button "Use the built-in System account"
13. Change Authentication Mode to Mixed Mode and set a password for the sa logon. The user's NT logon name could be used as an initial password, but note that whatever is

used, it should NOT be the same for each machine as the sa account gives sysadmin privileges to any user who uses it

14. Keep the default collation settings, UNLESS the DBA for the project specifies that they should be changed. Be aware that certain applications require non-default settings
15. Select Error Reporting and Usage options – it does not matter what these are set to, as they are completely at your discretion.
16. Click on Next. The pre-installation screen will now appear.
17. The Setup Progress screen will appear, informing you of installation progress. This step usually takes 10-30 minutes. The Setup steps have completed.
18. The **"Completing Microsoft SQL Server 2005 Setup"** screen will now appear. SQL Server 2005 setup is now complete.