BANNER AUCTION SYSTEM IN ASP MODEL

BY

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FINAL APPROVAL

This is to certify that we have read the project report submitted by Mr. Shuja Ud Din Khawar and it is our judgement that this report is of sufficient standard to warrant its acceptance by the Quaid-i-Azam University, Islamabad for the degree of Master of Science in Computer Science.

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In the name of
Allah
The Most Merciful
The Most Beneficent

Dedicated To

My Sweet Mother

PROJECT BRIEF

Project Title	:	Banner Auction System in ASP Model
Organization	:	Marriala Technologies inc. Islamabad.
Undertaken By	:	Shuja-ud-din Khawar
Supervised By	:	Dr. Masud Ahmad Malik Computer Science Department Quaid-I-Azam University Islamabad
Completion Date	:	August 2001
Source language	:	Java Server Pages
Operating System	:	Windows 2000 Professional.
System used	:	Pentium-III 550 MHZ

ABSTRACT

The report describes the work done to develop a website in ASP model where an auction cab be held for buyers and sellers of web spaces for advertisement through banners. The buyer can buy web spaces online with the help of credit card. The seller can sell his web space on the website for banners. Our system will keep track of banner information and banner charging. The platform used during the development of software is Windows 2000, Weblogic Server as web server, SQL Server for database and languages used are Java Server Pages, JavaScript, Java, servlets and HTML and for development environment FrontPage 2000 is used.

Acknowledgement

All praises for ALLAH, The creator of the Universe, who guides us in darkness and helps us in difficulties and all my respect for his Holy Prophet (PBUH). First of all, I owe my deepest gratitude to almighty ALLAH; the Most Merciful and Compassionate, Most Gracious and Beneficent Whose favor made it possible for me to accomplish this project work.

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SHUJA-UD-DIN KHAWAR

Preface

This report is organized as seven chapters and four appendices. Chapter 1 describe the introduction to organization,introduction to problem, existing system and its drawbacks. Chapter 2 describes the over view of proposed system, scope of system and its objectives. Chapter 3 describes planning of project in the sense that either project can be completed within limited resources or not. Chapter 4 covers the functional and non-functional requirements of system.

Chapter 5 is about the analysis and design of the system. Here is the detailed description of the analysis and design of the system. This chapter also deals with issues and characteristics of good design.

Chapter 6 is about the system development tools, technologies and implementation. Here is the brief description of the system components and working of the system. Chapter 7 is about the testing and evaluation of the system. In it, it is also described what are the features of the system and what further enhancements are possible. Appendix A contains the ERD of the system. Appendix B contains the Bachman Diagram of the system. Appendix C shows the components of the system. Appendix D shows the input form.

Contents

Chapter 1

Introduction

1.1 INTRODUCTION TO ORGANIZATION

Marriala technologies Inc is a well-reputed software company in Islamabad. The company has also a branch in the USA. The company is currently working on scientific projects, Internet and E-commerce solutions.

1.2 PROBLEM DEFINITION

It is a new idea. Our problem is to develop software that will provide services for buying and selling of web spaces for advertisement through banners. User who has web spaces and wants to sell its web spaces will post its web spaces to our site in auction. User who wants to buy these web spaces for advertisement through banner will participate in the auction and will place a higher bid against the web space from where he wants to run his banner, if its bid is high then he will give a banner that will be displayed from that web space, each time that web space is loaded. An auto mail will be sent to the user whose banner was currently running informing him that his banner will be stopped because a higher bid than his is placed, so that he can respond back to run his banner again.

Our software will provide auction facility and will also keep track of, which banner will run from which web space, and also charging against each banner each time that banner is displayed and/or clicked. Software will also keep track of banners information according to banner category, that is, random banner, auction enable banner, targeted random or targeted auction enable banner.

1.3 EXISTING SYSTEM

There are sellers of web spaces which have there sites on the internet and on their sites they have web spaces where banners can run for advertisement purpose. Sellers want to sell these web spaces for advertisement through banners. For this they charge fixed amount for fixed number of impressions or time. Business of these sites is only through banners which are post to there web spaces for advertisement purpose. When a buyer wants to buy a web space for running his banner from any web site. He visits the site or contract them as desired. Where he asks for the specific web space from where he wants to run his banner for the advertisement purpose. Now if any other banner is already running from that web space then he has to wait until that banner stopped after his desired impressions or time. This means once a buyer has bought a web space for banner no other buyer can buy that web space even for higher amount of money until the time duration of the first buyer is not finished, that is no concept of auction.

1.4 DRAWBACKS OF EXISTING SYSTEM

- No auction is maintained for the sell and buy of web spaces. If a buyer wants to run his banner from a specific web space and from that web space another banner is already running then he can not run his banner even for higher amount until that banner is not stopped after its desired impressions or time.
- Buyer has to spend extra time in search of web spaces because he has to visit every site one by one.
- Form the business point of view of seller it is not good that if a buyer want to run his banner for higher amount than the other banner's amount that is currently running.
- Buyer cannot see any type of his banner report. Like at what time and where this banner is seen.

- This is not good for infamous sites because buyers do not visit them for advertisement purpose.

Chapter 2

Proposed System

2.1 INTRODUCTION

The proposed system is basically for providing services like selling and buying of webspaces for advertisement through banners. Proposed system has following two parts

- Buying of web spaces
- Selling of web spaces

2.2 Buying of web spaces

2.2.1 Main features

Some of the main features of the proposed system for buying of web spaces are as follows

Maintenance of database

The database of a large number of web spaces and banners is maintained in the system. Any buyer can buy a web space by searching the database and then placing a higher bid for that web space. Also the database of buyer is maintained.

Dynamic and interactive website

A dynamic and interactive website will be developed through colorful and interactive interface, this website will provide facility to all users who want to buy web spaces for advertisement through banners online. The complete searching facility will be provided in the website.

Use of standard tools

The most popular and standard tools are used in the development of the website. With the help of these tools very efficient and interactive website is developed.

2.2.2 Working

Buyer can buy web space in five Steps.

- Registration
- Search for web space.
- Place a bid.
- Give a banner
- Advance charging for banner.

Registration

When a buyer will visit our site for the very first time then He has to register by filling the registration form. He will select his own login name and password. This login name and password will be used whenever he wants to buy web spaces next time. Then at that time he need not to fill the registration form again but simply he has to enter his login name and password to proceed further.

Searching the web space

First of all the web sites will be shown to the buyer from where the buyer will select a web site then all the web spaces in the selected web site will be shown to the buyer. And also all the information about the web space will be shown to the buyer. From these web spaces buyer will select a web space on which he wants to run its banner. Buyer can also do an advance search if he already now a website by search for that specific website.

Place a bid

Information about the current bid of the selected web Space will be shown to the buyer then the buyer will place a higher bid

than the current bid if he wants to run his banner from that web space.

Give a banner

If the buyer has placed a higher bid than the current bid then buyer has to give a banner that will run on that web space and also a banner campaign in case of web spaces where random banner will run. But in case of auction enable banners no campaign will be given. Buyer can give a banner and a campaign by selecting from previously given banners and campaigns. Buyer can also give a new banner that can be uploaded from client side or buyer can give SRC for the banner.

Advance charging

Before the buying of web space is completed buyer has to verify its credit card information that we have taken by him at the time of registration buyer can change the credit card information at this time. Here again credit card information is validated and charging for running banners from web space is taken from this credit card. Here we will do some advance charging for that banner. An auto mail will be sent to the buyer whose banner was currently running on this web space informing him that a higher than his bid has been placed so his banner will stop, so that he can response back.

2.3 Selling of web spaces

2.3.1 Main features

Some of the main features of the proposed system for selling are as follows

Maintenance of database

The database of every seller, who has added his web spaces for sell through auction, is maintained. The seller can add, delete and update sites and web spaces and banners that is all done in database.

Dynamic and interactive website

A dynamic and interactive website will be developed through colorful and interactive interface, this website will provide facility to all users who want to sell there web spaces on line.

Use of standard tools

The most popular and standard tools are used in the development of the website. With the help of these tools very efficient and interactive website is developed.

2.3.2 Working

The working of the proposed system of selling is divided into following steps.

- Registration
- Addition, modification of web sites and web spaces
- Addition of banners

Registration

If a seller is new on the web site and want to sell his web spaces. He has to fill the registration form. He will select his own login name and password. That seller can only use this login name and password and no other seller can use it. Next time when he wants to enter in the system he has no need to fill registration form. He has to enter his login name and password to enter in the system.

Addition, modification of web sites and web spaces

After filling the registration form he has to enter the information about his web site and then information about the web spaces in the web site. Seller can also change the information of added web sites or web spaces.

Addition of banners

After the seller has added a web space he then give a default banner for that web space, that is, if no buyer has buy that web space still then that default banner will run from that web space. The seller can change the banner and also banner information at any time.

2.4 SCOPE OF THE SYSTEM

The system is developed to provide services like selling and buying of web spaces for advertisement through banner, keeping track of banners information, that is, which banner will run on which web space and banners charging, that is, charging against banner when it is displayed and/or clicked from the web space. Any user who has web spaces and any user who has banners can use the services of the system. More than one user can use the system at the same time.

2.5 OBJECTIVES

There are some objectives, which are to be accomplished by the proposed system these objectives are designed after interviewing the users of the system and also from my own understanding and analysis of the system.

- To make information accessible to maximum number of peoples.
- To authenticate information to user.

- To minimize time that is spent in searching of web spaces.
- To increase the business and market of sellers.
- To provide equal chance of business to all sellers.
- To provide the buyer chance to run his banner from any web space at any time.
- To provide the buyer reports about his banner.
- To provide all sorts of views of information to user.
- To minimize date entry efforts.
- To store the information in such a way that space is not wasted.
- To provide maximum information to user in minimum navigations through the web pages.
- The proposed system should be user friendly as possible so that untrained user can easily familiar to it.
- The database design of the proposed system should be in such a way that there are no anomalies and duplication of data.

Chapter 3

Planning the Project

3.1 INTRODUCTION

Planning the project is very important phase. While planning the project it is necessary to keep in mind whether the purpose of project may be achieved within limited resources available skills, technologies, cost and according to schedule or not. It should also keep in mind which type of users will use the system, so here i would explain following three things

- Purpose of Project
- Users
- Feasibility Study

3.2 PURPOSE OF PROJECT

The purpose of the project is to develop an interactive and user friendly web site, which will provide services for buying and selling of web spaces for running banners from web spaces. The project will provide services like held an auction for buying and selling of web spaces and will keep track of which banner will run from which web space and will also keep track of banner's information.

3.3 USERS OF SYSTEM

There are two types of users who can use the system after authentication.

- Sellers of the web spaces
- Buyers of the web spaces

Sellers of web spaces

The seller can use the system in the following ways.

- He can add new web sites in the system.
- He can update his already added web sites.
- He can add new web spaces in the system.
- He can update his already added web spaces.
- He can add banners to the system.

- He can update the banner's information.
- He can change banners.
- He can see auction history for any of his web space.

Buyers of the web spaces

The buyer can use the system in the following ways.

- He can search a web space on which he wants to run his banner.
- He can participate in the auction.
- He can win the auction.
- He can add banners to the system.
- He can update the banner's information.
- He can change banner.
- He can add campaign for a banner.
- He can see any of his banner log.

3.4 FEASIBILITY STUDY

Feasibility study is usually divided into three parts, which are described below:

- Economical Feasibility
- Technical Feasibility
- Operational Feasibility

Economical Feasibility

While planning the project, it should be determined whether the benefits accruing from the new system will be greater than the investment needed to implement the system.

The proposed system is economically feasible because all the requirement of software and hardware are available within Marriala Technologies Inc For example,

- Marriala Technologies have license of all software that are being used for this proposed system.

- Marriala Technologies has also the required capabilities to do the necessary hardware and software maintenance.
- No extra budget will be required for professional data entry operators as the resources are available within the organization.

Technical Feasibility

Technical feasibility means whether technology required to develop the proposed system does exist or not. I would like to say that this project is technically valid, because many necessary software development tools are available from the Marriala Technologies Inc. to develop the desired system.

- For back end database development SQL Server 7.0 is used.
- Web Logic is used as web server.
- For front-end website development Java Server Pages (JSP) is used.
- For Scripting Java Scripts are used.

So technically development is feasible.

Operational Feasibility

This system will be launched on the web and is accessible to the authenticated users all aver the world at any time, so users can use the system at any time. Proposed system will be operational in the following way.

- System will be user friendly.
- System will provide all the required services.
- System will provide graphical user interface.
- System will guide the user through proper messages.
- System will also provide online help so that user can get help if he is finding difficulties to use the system.
- System will be made more operational by the feedback of the user, which the user will send to us with suggestions to improve the system.
- No prior knowledge of computer will be required for operating the system.

Chapter 4

Requirement Analysis

4.1 INTRODUCTION

Requirement analysis is an important phase of software development. It involves to with customers and system end users to find about the application domain, what services the system should provide, the required performance of the system, the hardware constraint and so on.

Requirement analysis is an import process. The acceptability of the system after it has been delivered depends on how well it meets the customer's needs and the work to be automated. If the analyst does not discover the customer's real requirements, the delivered system is unlikely to meet their expectations.

4.2 FUNCTIONAL REQUIREMENTS

The functional requirements of the proposed system are as follow.

Registration

When a user will visit our site for the very first time then he has to register by filling the registration form. He will select his own login name and password. This login name and password will be used whenever he wants to use the services of the system next time. Then at that time he need not to fill the registration form again but simply he has to enter his login name and password to proceed further

Change password

System will provide the facility of changing the password if the user is already registered.

Change profile

User can change its profile if he is already registered.

Add web sites

Seller can add new web sites.

Modify web sites

Seller can also modify the information of already added web sites.

Add web spaces

Seller can add web spaces in a web site. In a web site there can be more than one web spaces. Seller will give the banner's information that will be the default banner for the added web space and initial bid for the added web space.

Modify web spaces

User can modify the information of already added web space.

Banners

Seller will give that on which web space which type of banner will run that is targeted with auction, targeted random, random or auction enable banner.

Targeted banners

Targeted banners are those banners that can run against keywords. Multiple banners can run against one keyword.

Random banners

Random banners are those banners that do not run against any keyword. Against one web space there are many random banners in the database and at any one time only one banner will be randomly selected from the database and will run on the web space. No auction will be held for random banners.

Auction enable banners

There are some web spaces where banners will run after winning an auction by placing a higher bid such banners are auction enable banners. For auction enable web spaces there will be only one banner in the database for that web space.

Multiple banners against one site

In one sits there are multiple web spaces and hence against one site multiple banners can run.

Banner selection

System will provide the facility that user can select a banner from their already given banners.

Add banner

User can add a banner against a web space if he has won an auction or he is the owner of the web space in this case this will be the default banner for that web space.

Change banner

User can change the already added banner against any web space at any time if he has won that web space though auction or if he is the owner of the web space.

Edit banner

User can edit the already given information of a banner.

Banner campaign

Banners will run according to some campaign. Campaign may consist of start date, end date, start daytime, end daytime and days in a week. Campaign will be only for random banners.

Auction facility

An auction will be held for selling and buying of web space for advertisement through banners. Seller can post there web space in the auction, buyer of the web space can participate in the auction and can place a bid for its desired web space on which he wants to run his banner. If his bid is higher then he will be the winner of that web space and now his banner will run from that web space.

Dynamic entry for keywords

If a user participates in auction and enters a keyword that is not present in the database then a run time entry will be created for this keyword and an initial value for bid will be set at run time and will be displayed to the user.

Auto mail

If a buyer place a higher bid for a web space than the current bid then a auto mail will go to the buyer whose banner was currently running informing him that a higher bid than his is placed and his banner will be stopped so he can respond again if he is willing to.

Banner upload

System will have the facility to upload the banners from the client side.

Banner SRC

System will have facility to keep track of the SRC of the banner.

Charging

Charging will be according to number of impressions that is how many times a banner is displayed on the web space Also if that banner is clicked then there will be charging for the click on banner.

Credit card transaction

System will have the facility of credit card transaction.

Banner Auction History

System will maintain the banner auction history for the webspaces.

Banner Log

System will maintain the banner log. Log will contain information about the banner like how when and where is this banner is viewed or clicked its charging and type of the banner.

4.3 NON-FUNCTIONAL REQUIREMENTS

The non-function requirements of the system are as follow.

Efficiency

The new system should be efficient. As all the information is kept on the web server and all clients have access to it. The data will be stored on a high-speed web server, and the client would only request to manipulate with data stored in web server.

Correctness

The new system should be error free. The output produced by the new system should be satisfactory. It would be done by some validation checks at all data entry fields.

Flexibility

The new system should much more flexible. It would easily adjust any kind of changes. Also a new field could be easily added.

User friendly

The new system should be easy to use. It is necessary for any application to be self-explanatory because it is also for dummy users. It should provide online services to the user. Data entry and modification processes will be done in a user-friendly environment.

Security

The new system should provide security to all users by giving them their login name and password.

Resources

The resources needed for the system are of two types.

- Hardware
- Software

Hardware

The minimum hardware resources for developing the system are as follows.

- Hard disk 1.5 GB
- RAM More than 64 MB
- Processor 250 MHz

Software

The minimum software requirements for developing the system are as follows.

- Windows 2000 professional.
- Web logic Server.
- SQL Server
- JSP
- HTML
- Java Script
- Java

Chapter 5

System Design

5.1 INTRODUCTION

The most creative and challenging phase of the system life cycle is system design. System design is a solution, a "how to" approach to the creation of a new system. It provides the understanding and procedural details necessary for implementing the system recommended in the feasibility study. Emphasis is on translating the performance requirements into design specification

Proposed system is a client/sever application. Today's client/server application (multi-tier application) is also known as n-tier architecture. In this model, the division between client and server is not as easily discernible, and often the server becomes a client itself. Not surprisingly, the new system model attempts to distribute computing tasks more evenly between the client and server. In the system design I shall describe four important things.

- Database Design.
- Interface Design.
- Procedural Design.
- Input Output Design.

5.2 DATABASE DESIGN

This is the important step in the design of a Database Application. This is done by first analyzing the system and then identifying the data requirement for the system, then different entities present in this system are identified along with their relationship with each other and all this information is transformed into an Entity Relationship Diagram (ERD). ERD is given in Appendix A. Then this ERD is transformed into a Bachman Diagram. I have done all this with complete concentration and under the supervision of my external and internal supervisors. Bachman Diagram of my system is given in Appendix B.

The database is developed in SQL Server. Different tables of database are shown below.

Table name: Users

Primary key: UserId

Foreign key: No

Description: This table stores the information about Users.

Column Name	*Data Type*	*Length*	*Constraints*
UserId	Numeric	9	Not Null
Email	Nvarchar	50	Not Null
Password	Nvarchar	30	Not Null
SecretQuestion	Nvarchar	200	Not Null
Answer	Nvarchar	200	Not Null
FirstName	Nvarchar	30	Not Null
LastName	Nvarchar	30	Not Null
CompanyName	Nvarchar	50	Null
StreetAddress	Nvarchar	60	Not Null
City	Nvarchar	30	Not Null
State	Nvarchar	30	Null
Country	Nvarchar	30	Not Null
ZipCode	Nvarchar	10	Not Null
CurrentBalance	Float	8	Null
CCNo	Nvarchar	10	Not Null
CCHolder	Nvarchar	50	Not Null
ExpiryDate	Datetime	8	Not Null

Table name: Keywords

Primary key: KeywordId

Foreign key: No

Description: This table stores the information of Keywords.

Column Name	*Data Type*	*Length*	*Constraints*
KeywordId	Numeric	9	Not Null
Keyword	Nvarchar	50	Not Null

Table name: BannerSizes

Primary key: BannerSizeId.

Foreign key: No.

Description: This table stores the information of banner sizes.

Column Name	*Data Type*	*Length*	*Constraints*
BannerSizeId	Int	4	Not Null
Width	Int	4	Not Null
Height	Int	4	Not Null
Active	Int	4	Not Null

Table name: Campaign

Primary key: CampaignId

Foreign key: UserId from table Users.

Description: This table stores the information of Banner's Campaign.

Column Name	*Data Type*	*Length*	*Constraints*
CampaignId	Numeric	9	Not Null
CampaignName	Nvarchar	30	Not Null
UserId	Numeric	9	Not Null
StartDate	Datetime	8	Not Null
EndDate	Datetime	10	Not Null
DailyStartTime	Datetime	10	Not Null
DailyEndTime	Datetime	10	Not Null
Mon	Int	4	Null
Tue	Int	4	Null
Wed	Int	4	Null
Thr	Int	4	Null
Fri	Int	4	Null
Sat	Int	4	Null
Sun	Int	4	Null

Table name: WebSites

Primary key: WebSiteId

Foreign key: UserId from table Users

Description: This table stores the information of .web sites

Column Name	*Data Type*	*Length*	*Constraints*
WebSiteId	Numeric	9	Not Null
URL	Nvarchar	60	Not Null
UserId	Numeric	9	Not Null
Approved	Int	4	Not Null
RegisteredDate	Datetime	8	Not Null
Description	Nvarcnar	50	Not Null
Active	Int	4	Not Null

Table name: WebSpaces

Primary key: WebSpaceId

Foreign key: WebSiteId, BannerSizeId, DefaultBannerId from tables WebSites, BannerSizes, Banners respectively.

Description: This table stores the information of web spaces on different web sites.

Column Name	*Data Type*	*Length*	*Constraints*
WebSpaceId	Numeric	9	Not Null
WebSpaceName	Nvarchar	30	Not Null
WebSiteId	Numeric	9	Not Null
WebSpaceDes	Nvarchar	100	Not Null
BannerSizeId	Int	4	Not Null
Active	Int	4	Not Null
DefaultBannerId	Numeric	9	Not Null
SubmittedDate	Datetime	8	Not Null
IsRandom	Int	4	Not Null
ClickedPrice	Float	8	Not Null
AuctionEnable	Int	4	Not Null
DefaultPrice	Float	8	Null
BidIncrement	Float	8	Null
IsTargeted	Int	4	Not Null
TargetCharging	Float	8	Null
RandomCharging	Float	8	Null

Table name: KeywordBanners

Primary key: WebSpaceId, KeywordId, BannerId.

Foreign key: WebSpaceId, KeywordId, BannerId,UserId,CampaignId from tables WebSpaces, Keywords, Banners,Users,Campaign respectively.

Description: This table stores the information of different banners against different keywords on different webspaces.

Column Name	*Data Type*	*Length*	*Constraints*
WebSpaceId	Numeric	9	Not Null
KeywordId	Numeric	9	Not Null
BannerId	Numeric	9	Not Null
UserId	Numeric	9	Not Null
CampaignId	Numeric	9	Not Null
Active	Int	4	Not Null

Table name: WebSpaceBanner

Primary key: WebSpaceId, BannerId.

Foreign key: WebSpaceId, BannerId, UserId, CampaignId from tables WebSpaces, Banners, Users, Campaign respectively.

Description: This table stores the information of different banners on different webspaces.

Column Name	*Data Type*	*Length*	*Constraints*
WebSpaceId	Numeric	9	Not Null
BannerId	Numeric	9	Not Null
UserId	Numeric	9	Not Null
CampaignId	Numeric	9	Not Null
Active	Int	4	Not Null

Table name: KeywordBidding

Primary key: BidId.

Foreign key: WebSpaceId, KeywordId from tables WebSpaces, Keywords, respectively.

Description: This table stores the information of current bid against different keywords on different webspaces.

Column Name	*Data Type*	*Length*	*Constraints*
BidId	Numeric	9	Not Null
KeywordId	Numeric	9	Not Null
WebSpaceId	Numeric	9	Not Null
NewBid	Float	8	Not Null

Table name: WebSpaceBidding

Primary key: BidId

Foreign key: WebSpaceId from table WebSpaces.

Description: This table stores the information of current bid on different web spaces.

Column Name	*Data Type*	*Length*	*Constraints*
BidId	Numeric	9	Not Null
WebSpaceId	Numeric	9	Not Null
NewBid	Float	8	Not Null

Table name: Banners

Primary key: BannerId.

Foreign key: UserId, BannerSizeId from tables Users, BannerSizes respectively.

Description: This table stores the information of banners.

Column Name	*Data Type*	*Length*	*Constraints*
BannerId	Numeric	9	Not Null
UserId	Numeric	9	Not Null
Active	Int	4	Not Null
BannerSizeId	Int	4	Not Null
ClientSideName	Nvarchar	30	Not Null
ServerSideName	Nvarchar	25	Not Null

AltTest	Nvarchar	50	Not Null
OnClickSite	Nvarchar	50	Null
BannerSrc	Nvarchar	50	Null
CostMethod	Int	25	Not Null
Balance	Float	8	Null
SubmittedDate	Nvarchar	25	Not Null

Table name: BannerAuctionHistory

Primary key: AuctionHistoryId

Foreign key: UserId, BannerId, WebspaceId, KeywordId from tables Users, Banners, WebSpaces, Keywords respectively.

Description: This table stores the information auction history.

Column Name	*Data Type*	*Length*	*Constraints*
AuctionHistoryId	Numeric	9	Not Null
UserId	Numeric	9	Not Null
BannerId	Numeric	9	Not Null
WebSpaceId	Numeric	9	Not Null
BidRate	Float	8	Not Null
KeywordId	Numeric	9	Null
BidDate	Datetime	8	Not Null

Table name: BannerClick

Primary key: RecordId.

Foreign key: BannerId, WebSiteId from tables Banners, WebSites respectively.

Description: This table stores the information about banner click.

Column Name	*Data Type*	*Length*	*Constraints*
RecordId	Numeric	9	Not Null
UserIP	Nvarchar	50	Not Null
ClickDateTime	Datetime	8	Not Null
BannerId	Numeric	9	Not Null
ViewOrClicked	Int	4	Not Null
IsTargeted	Int	4	Not Null

RandomOrTargeted	Int	4	Not Null
SearchExpression	Nvarchar	60	Null
Cost	Float	9	Null
WebSpaceId	Numeric	9	Not Null
CostingDone	Int	4	Not Null
CompaignId	Numeric	9	Null

Table name: BannerTransaction

Primary key: TransactionId.

Foreign key: UserId from table Users.

Description: This table stores the information about Amount that user give against banners.

Column Name	*Data Type*	*Length*	*Constraints*
TransactionId	Numeric	9	Not Null
UserId	Numeric	9	Not Null
TransactionDate	Date	4	Not Null
TransactionAmount	Float	9	Not Null
Ccno	Nvarchar	15	Not Null
CardHolderName	Nvarchar	30	Not Null
ExpiryDate	Datetime	8	Not Null

5.3 INTERFACE DESIGN

Interface is an implementation phase of the design phase. It is concerned with the design and layout of the screens, which have to be presented to the user for various data entry and view purpose. In the interface design phase it is essential to design such inputs so that there is a minimum chances of error and maximum performance. Interface pages are shown in Appendix C. The following measures should be considered during design phase.

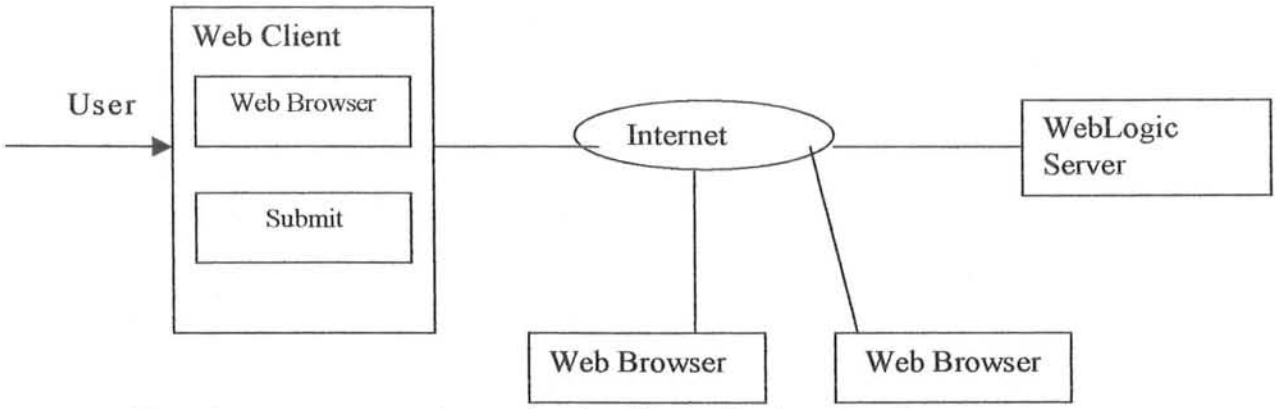
- The screens must be designed to avoid mistakes.
- Use almost the same layout for all screens.

- The screens must suit the purpose for which they have been designed.
- Buttons having meaningful labels should be used so that any user can easily realize what he is going to do.
- Once an error has been detected, the user interface has to do something about it.
- The error messages should be polite.
- Explain what are wrong and what the system is expecting.
- Should continue to be polite however many times the user makes the same mistakes.

The output is also the part of the user interface. The following measures should be considered.

- All the information should be readable.
- The numerical figures presented should be distinguishable.

5.4 PROCEDURAL DESIGN



The above process shown in the figure is done in six steps.

- The user fills the forms and submits proposal.
- The server decodes and validates the request.
- The server accesses the Database with the help of JDBC-ODBC Bridge.

- The actions contained in the request file are performed and form values are inserted updated or deleted into/from the Database.
- The response in form of the HTML form or plain text is returned back to the user.
- The client sends the response to the browser, which shows it to the user.

5.5 INPUTS AND OUTPUTS DESIGN

The inputs to the system can come from two channels buyers and sellers. Outputs are also in two forms, one output to the registered buyers, second to the sellers. Prescribed format (HTML & JSP pages) will be used for inputs and outputs. Data would be received and sent as per request of the registered buyers/sellers (through browser) to the server.

Accuracy of the data is dependent upon connection speed, ISP and noise in the telephone line. Flow of data depends upon the number of buyers, sellers of the system accessing the site.

Buyer

INPUTS	OUTPUTS
Access site	Access or Denied Access
Login password	Authentication message
Search for a specific web space	Search result
Browse web spaces	List of web spaces
Browse web sites	List of web sites
Add Bids	Acknowledgement of add Bids
Add banner	Acknowledgement of add banner
Request for Banner log	Show information of the banner
Edit banner	Acknowledgement of edited banner
Add campaign	Acknowledgement of add campaign
Request for campaign information	Show campaign information

Seller

INPUTS	OUTPUTS
Access site	Access or Denied Access
Login password	Authentication message
Add web site	Acknowledgement of add Web site
Modify web site	Acknowledgement of Web site modification
Add web space	Acknowledgement of add Web space

Modify web space	Acknowledgement of Web space modification
Add banner	Acknowledgement of add banner
Edit banner	Acknowledgement of banner edit
Change banner	Acknowledgement of add vehicles
Browse web spaces	List of web spaces
Browse web sites	List of web sites
Request for banner auction history	Information of auction history.

Chapter 6

Implementation

6.1 INTRODUCTION

The purpose of the Software development is to transform the design into executable computer program, which may then be tested and implemented as a new system. In the implementation chapter I shall describe the softwares that I have selected, what are the components of my system, what is there functionality and how they interact which each other. This will describe the complete implementation of my system and then I shall describe how my system works.

6.2 SOFTWARE SELECTION

It is a very difficult to determine whether the software is capable of the system requirements or not. To develop the system, I have used the following software

- Windows 2000 Professional.
- Web Logic Server
- SQL server 7.0
- Html
- Java script
- Java
- Java Server Pages (JSP)

Windows 2000 Professional

It is based on NT technology. It is a multi user operating system. Its internal is centered on the micro kernel style architecture similar to Unix, which gives NT primitives multitasking. Windows 2000 Professional also has interface like Windows 95 interface. It can be used in client server environment. It is capable of integrating into wide range of computer environments.

SQL Server 7.0

It is a Microsoft flagship database engine product .it can run either on Windows NT or Windows 95 or later. It has a powerful security system. Along with NT's security, it has it's own SQL server authentication. For the database security sake, each database has a separate access path and users with different levels of access rights. It provides database backup and restore facilities. It uses transact SQL in it's database engine for data manipulation.

HTML

HTML is a Client independent and format free language. It supports preformatted text, headers and different styles, has formatting tags, which allows advanced controls. It allows browsers to display documents based on the logical layout of the document. It allows hypertext links, which tell the browser to get a different document to display. It has special markup tags surrounded by < & > telling the browser what the text is and how to display it.

Active Server Pages (JSP)

Java server pages are basically HTML tags that contain Java code, which is executed on the server. That's why they are called Server side scripts. The results of the Java statements (if any) are transmitted to the client. The HTML code is transmitted as it is. A server script can produce any output, but only HTML documents can be rendered on the client. Java server pages are Sun's technology. Earlier server side programming was done with the help of servlets but developers have to do a tedious work because they have to concentrate on to business logic as well as presentation logic. But with the development of Java server pages developers only focus on the business logic but not on the presentation logic. So their work becomes easier with Java server pages.

WebLogic Server

BEA WebLogic Server is an award-winning Java application server for developing, deploying, and managing Web applications. It simplifies development of portable and scalable applications, and provides interoperability with other applications and systems. BEA WebLogic Server also offers the most complete implementation of the Java 2 Enterprise Edition standard. It is also stand-alone server for servlets. It first compile Java server page into servlet and then use this servlet to perform functionality.

Java

Java is a Sun Micro System's product. Sun Micro System formally announced Java at a major conference in May 1995. Ordinarily, an event like this would not have generated much attention. However, Java generated immediate interest in the business community because of the phenomenal interest in the World Wide Web. Java is now used to create Web pages with dynamic and interactive content, to develop large-scale enterprise applications, to enhance the functionality of World Wide Web servers. Java is a default language for Java server pages. Java server pages scriplets contain Java code. Java is a pure object oriented language. Java server pages can use full capabilities of Java to develop Web applications. A strong concept of Java Beans, which are reusable components, can be used in Java server pages.

Java Script

Netscape Communicator developed Java script. It is used to create dynamic web pages, which save user's time and add a level of interaction. It's a scripting language and is actually embedded into an HTML file. It is derived from C language. With java script, you can modify properties of the web page or even elements of the page. You can create new documents or update parts of a form. Checks on client sides are usually implemented in Java Script.

6.3 COMPONENTS OF SYSTEM

Components of the system are shown in the Appendix C. According to diagram in Appendix C the major components of system are Registration and Authentication, Seller of web spaces, Bid and banner. Seller component is further divided into add web site, edit web site, add web space edit web space modules. Bid component is further sub divided into auction and targeted auction modules. Banner component is further sub divided into add banner, edit banner, change banner, charging and return banner modules. Now return banner module is further subdivided into into sub modules random banner, auction enable banner and targeted auction enable banner modules. Add banner module is also further sub divide banner upload module. Also there is auto mail component. Dotted lines show dependencies between these components.
Working of these components is as follow.

Registration and Authentication

Registration and authentication component will be used to register the user if he is a new user and to login the user to system if he is already a registered user. This component will check the login name and password when the user will try to login the system.

Seller

Seller component will provide the facility to seller to add web site, edit web site, add web space, and edit web space. Seller will fill the data entry forms and this component will its modules to insert or modify the values in the database.

Bid

Bid component will provide bidding facility. Bidding will be done against two type of web spaces auction enable and targeted auction

enable. For this purpose bid component will use his as shown in figure. Now these modules will show the buyer information like current higher bidder name, current bid and bid increment and will also provide the facility to the buyer so he can place higher bid. And if buyer places higher bid then these modules will update the information in the database.

Auto mail

This component will be used to send auto mail to buyer at the time when his banner will stop running from a web space because another buyer would have placed a higher bid then his.

Banners

Banner component will provide the user facility like add banner. This component will use the its module add banner and will store the information given by the user about the banner. Now add banner module will use its module banner upload to upload the banner from the client machine.

Edit banner module will be used to provide the facility of banner edit. This module will retrieve the information of a banner from the database and then insert the update values back to the database.

Change banner module will be used whenever user wants to change his banner from any of web space, and will give new banner. This module will be used to insert the new banner information in the database.

Charging module will be used to make charging whenever any banner is clicked or viewed from any web space.

Return banner module is used whenever any web space which is registered in our system is down loaded. Now whenever this web space is down loaded it request to our system for the banner and our system will return a banner after calculations from the database. These banners can be auction enable banners, random banners, targeted random or targeted auction enable banners.

6.4 USING THE SYSTEM

First of all user will write the URL of the site and home page of the Banner Auction System will be down loaded where general information about the system will be given to the user. On the home page there will be two links one is for login if he is already a registered user and other link is the sign up link if he is a new user. User will click the link according to, if he is a registered user or not. If user clicks on login link then login page will be displayed to the user and if he clicks the sign up link then User Registration page will be shown to the user.

After the user is login to the system. A page will appear showing the menu. There are different options on the menu for the user. If user is the seller of web spaces then he can select add web site, edit web site, add web space, edit web space, add banner or edit banner options from the menu. If he click the add web site option from the menu then add web site page will be shown to the user where he can enter information about his web site. If he selects edit web site option then a page will be displayed to the user showing his already entered web sites, user can select any web site which he wants to edit, now another page will be displayed showing the user values about that web site in the editable form user can update the information of his already entered web site. Similar is the case with add web space and edit web space options.

If user wants to add banner to the system then first of all a page will be appeared asking the user if he wants to add the banner as a buyer of web spaces or as a seller of web spaces if user click the seller of web spaces link then a page will be displayed showing all of his added web spaces. Seller will select a web space against which he wants to add a banner, a page of add banner will be displayed where seller of web spaces will enter necessary information about the new added banner. If user selects the edit banner option then a page will be displayed showing all the banners which user has already add to the system, user can select any

information of the selected banner. User can see that which banner is running on which specific web space by clicking the option Banner Auction History.

If user is a buyer of the web spaces then he can participate in auction by clicking the Auction link. When user will click this link then first of all a page will appear showing him all the web sited which are added to the system by the buyers of web spaces, then user will click any web site and another page will be displayed to the user, showing all web spaces in that specific web site. Now user will click any web space on which he wants to run his banner and taking part in auction. If that web space is auction enable web space then a page will be displayed to the user giving him the information about the current higher bid on that web space here user will place a higher bid then the current bid if he wants to run his banner. If his bid is higher then an auto mail will be sent to the buyer whose banner was currently running informing him that his banner is stopped because of a higher bid then his, so that he can respond back.

If that selected web space is a random web space then no bid can be placed against that web space, but a fixed charging rate will be displayed to the user and user will accept this charging if he wants to run his banner from that web space. In case of random banner user will have to give a campaign for that banner. Here user can select from already entered campaigns and banners or he can add a new campaign and banner. If he wants to add a new campaign then a add banner campaign page will be shown to the user. User can also participate in the auction by directly giving the site if he already knows the site on which he wants to run his banner. Login page, bid page and banner upload pages are shown in Appendix D.

Chapter 7

Testing and Evaluation

7.1 TESTING OF SYSTEM

The last step as a refinement of the developed software is its testing and evaluation. Testing is such a vital and integral part of software development that it cannot be neglected in any case. It is due to the non-adherence and non-compliance to the testing process during the software development that a large number of software are never delivered, a large number of software are never used even if they are delivered and, software products fail to meet the requirements fully. The system has been tested and evaluated according to software engineering standards and guidelines.

Unit Testing

In the unit testing, different individual modules of the system are tested separately. The purpose of unit testing is to test whether each individual module is functioning correctly within itself or not. It is easy to catch errors in separate modules by testing the modules with all possible inputs. For example in my system I first made the registration and authentication module separately, then i made the seller module in which seller can add and edit web sites and web spaces, then I made the bid module, then I made the banner upload, banner change module and auto mail module, then I made banner charging module and in the last I made banner information module. I made all these modules separately and test them for errors. So at the first level I try to find out the errors in individuals modules.

Integration Testing

After testing the system at unit level, the modules were integrated incrementally and tested in small segments, where errors are easier to isolated and correct.

For example I first integrate authentication module with seller module and test them for errors. After this I add bid module to this tested and integrated modules and again test these combined modules for errors. Similarly I integrated the other above-mentioned modules and test them for errors.

System Testing

System testing is actually series of different tests whose primary purpose is to fully exercise the computer-based system all these test work to verify that all system element shave been properly integrated and perform allocated functions.

Recovery testing

In this testing, the system is checked for the fault tolerance I-e processing faults must not cause the overall system to cease. For example, if wrong values are entered in the form fields proper error messages are displayed and user is redirected to that entry form. If the user attempts to enter duplicate records, he is not allowed to do it with the use of client side scripting.

Security testing

Security testing attempts to verify that protection mechanisms built into the system will protect it from illegal penetration. For example if a user wants to modify the information given by any other user the system should check login name and password and did not allow the user to modify the information of any other user.

Stress Testing

The system has been tested for stress by giving it a large number of data and frequently querying and modifying it. The result of this testing were positive showing the reliability of the system.

7.2 SYSTEM EVALUATION

System evaluation phase is to review, whether objectives or functional requirements of user are fulfilled or not. User is a main consideration of system evaluation.

Following are the main objectives of system evaluation.

- To determine whether the system goals and objectives have been achieved.
- To determine whether user-operating activities have been improved.
- To determine whether user requirements have been met, while simultaneously reducing errors and cost.

The evaluation of a system is very important to judge whether the goals and objectives of the required system have been met or not. The target database on web gives more benefits. Target System as this web application gives global access to central database. For this purpose we also have to consider the features and merits and demerits of the system.

Features and Merits of the System

- This system is designed for buyers and sellers of web spaces. Sellers and buyers can use this software by entering their login name.
- The system provides all the required services to seller for example he can add and edit web sites and web spaces. Because main concern of the seller is to post his web spaces in the auction so he can make much profit. System provide reports to seller like which banner is currently running from which of his web space
- System provides an auction history to the seller so that from auction history report seller can come to know that how bidding is going to change from his web spaces and what is the current bid for each of his added web space
- System provides the facility to the user so that he can add banner.
- System provides the facility to the user so that he can change the banner at any time. All this is very easy to do.

- System will provide the facility of auction. At one side every seller has equal chance to make advertisement from any web space through banners, and on the other side it is profitable for the point of view of sellers of web spaces.
- System has the mechanism to feed back the buyer if any of his banner is stopped because if any other seller place a higher bid than his bid. This will be done through an auto mail which will be sent to the buyer whose banner was stop running, so that he can respond back.
- When a buyer would want to bid against any web space, then the system would provide facility to seller so that he can check the auction history for that web space so that he would come to know that what is the bid trend on this web space.
- System will provide the facility of banner log, so that user can see the banner log for any of his banner.
- System will provide the facility to user so that he can view information of any of his banner.
- System will provide the facility to the seller to browse his add web spaces.
- System will also provide the facility to the user to browse all the web spaces.
- System will provide the facility of advance search, so that user can find a web space by web site and type of the web space.
- The developed software is very easy to use for all categories of system users having even little knowledge of data processing. On line error messages and respective information messages are provided to make the system user friendly.
- Data validation checks have been provided to ensure correct entry and storage of data.
- This software provides a good window based interface, so it does not require training of the user for more than one or two days. For making it more user-friendly online help forms also have been designed.

- The system is able to respond the user quickly. The user of the system does not have to wait for getting the system response. Less number of .gif files have been used in the system implementation.
- In the newly developed system, rate of errors is considerably reduced. Since forms are used for input, updating etc, so to reduce errors, the user has at his disposal only what needs. Appropriate errors messages have been provided to prompt the user and refrain him from making errors
- The whole system is implemented by designing different modules to perform different tasks. With the help of modular approach during software development, significant advantage of design simplicity and operational efficiency has been obtained. Developed system can therefore be extended or modified with the help of modular approach
- A list box is provided whenever needed, so that the user does not need to remember entries already made. The user can select any value from given values.
- It is specially considered that web sites tend to change with passage of time, so there is room for such change.
- System is plate form independent since it is implemented by using JSP, JAVA, HTML and also weblogic server is used as web server and all these tools are plate form independent.

Demerits of System

Thus in software development there is no guarantee of a perfect system or a unique interface, for there is always room for improvement. During the design and development of the system every possible effort is made to remove deficiencies of the system.

7.3 FURTHER SYSTEM ENHANCEMENTS

System can be made more functional and user friendly by adding following functionalities.

- Another type of web space can also be added to a web site in the system. Charging for that web space for displaying banner will be fixed and very high. Whenever any buyer pay that charges then banner of only that buyer will run not only from that web space but also from the whole page.
- Discussion forum between buyer and seller can be implemented in the site.

7.4 PRECAUTIONS AND RECOMMENDATION

It is recommended that a regular schedule of backup should be followed to avoid problems causing from system breakdown. Microsoft SQL Server's Backup utility can be used directly from the database or the software also provides the backup facility itself, which uses Microsoft SQL Server's backup command.

Any one who is aware of using Internet would use this site but according to his authentication

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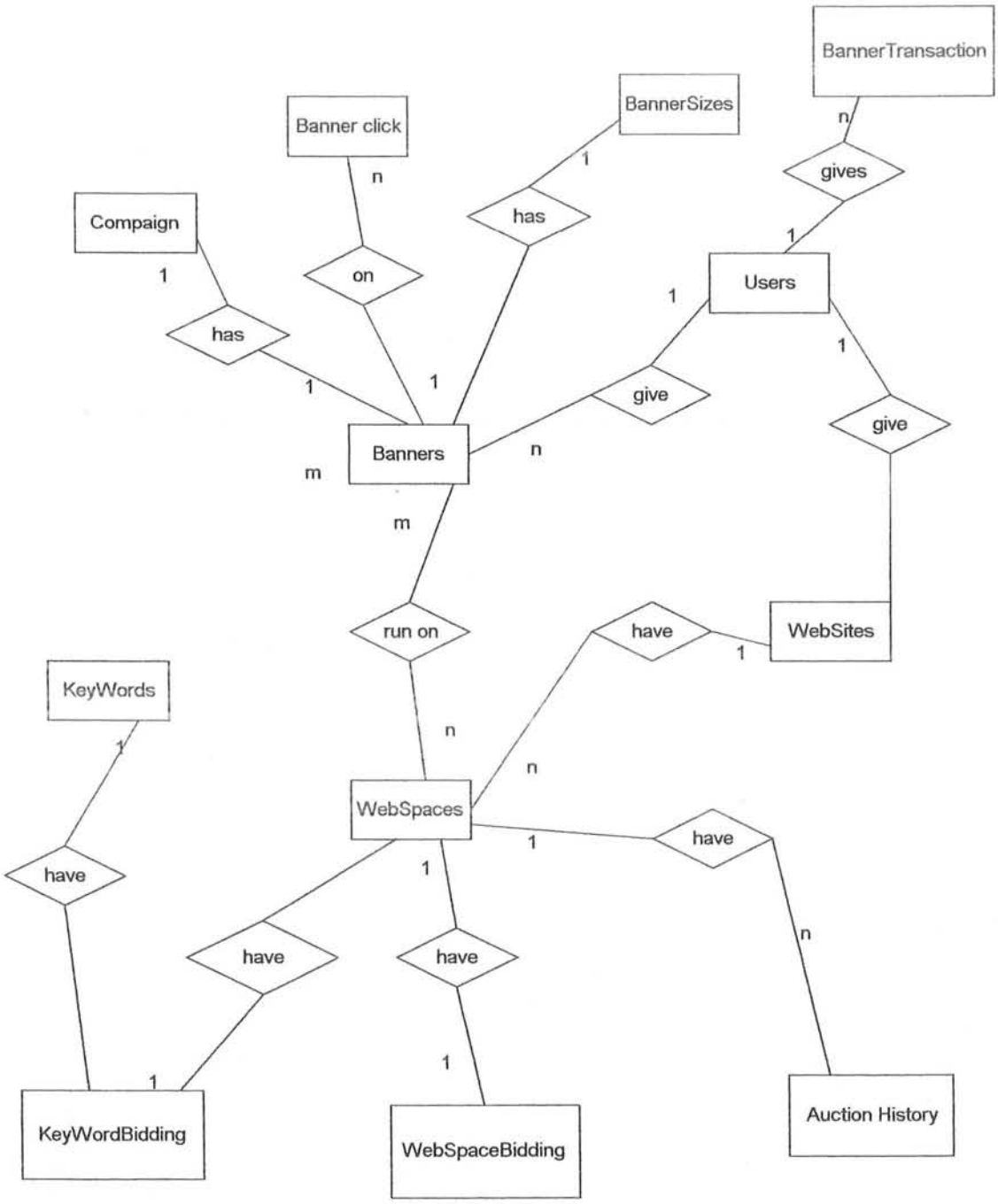
- http://www.jspsmart.com

APPENDIX A


BannerTransaction
BannerSizes
Banner click
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gives
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Compaign
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on
1
Users
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has
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1
1
give
give
Banners
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m
m
run on
have
WebSites
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KeyWords
1
n
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WebSpaces
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have
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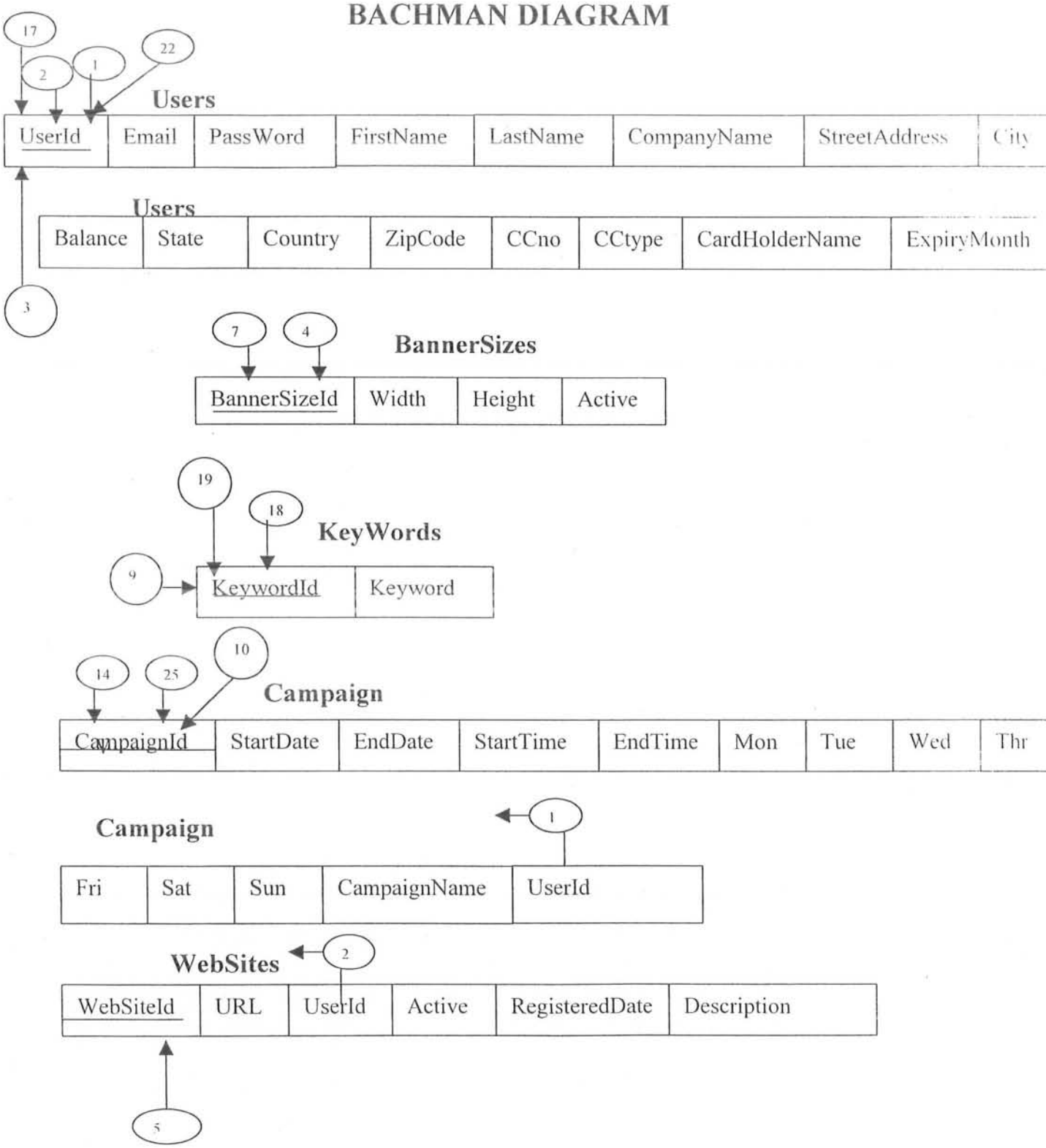
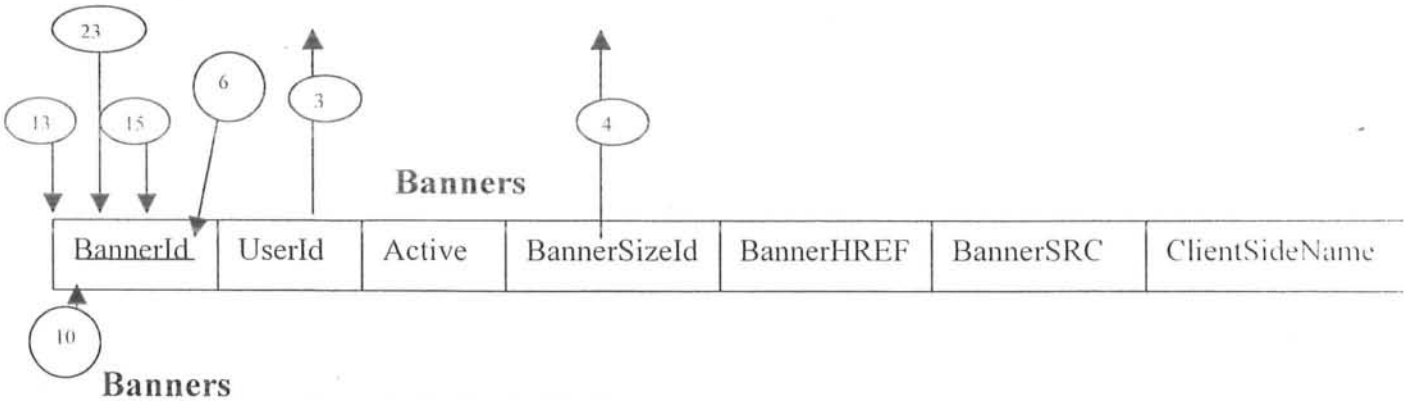
have
n
1
1
KeyWordBidding
WebSpaceBidding
Auction History

APPENDIX B

BACHMAN DIAGRAM

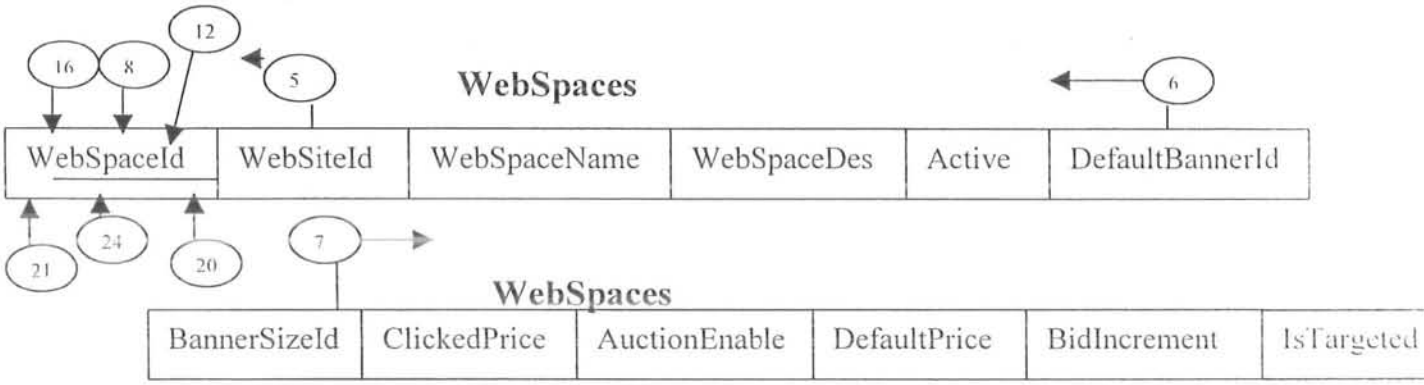


APPENDIX B



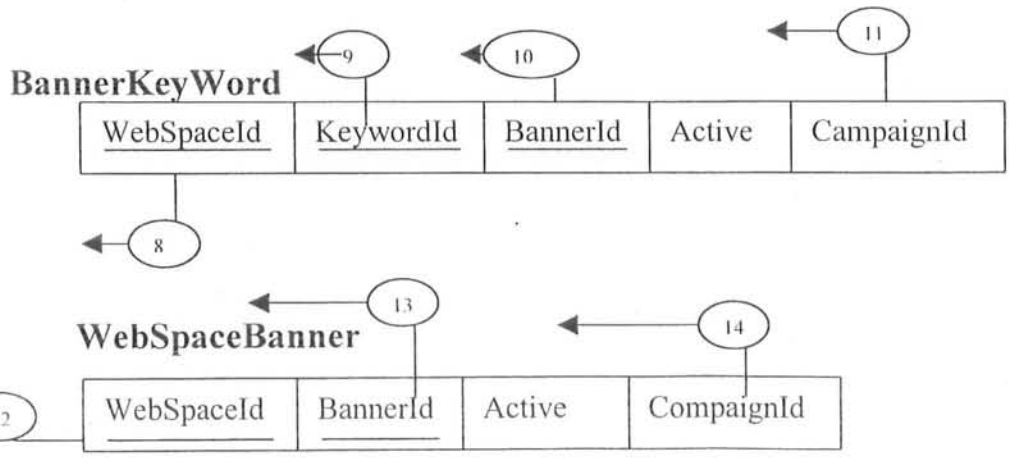
Banners

ServerSideName	AltText	OnClickSite	CostMethode	Balance	SubmittedDate

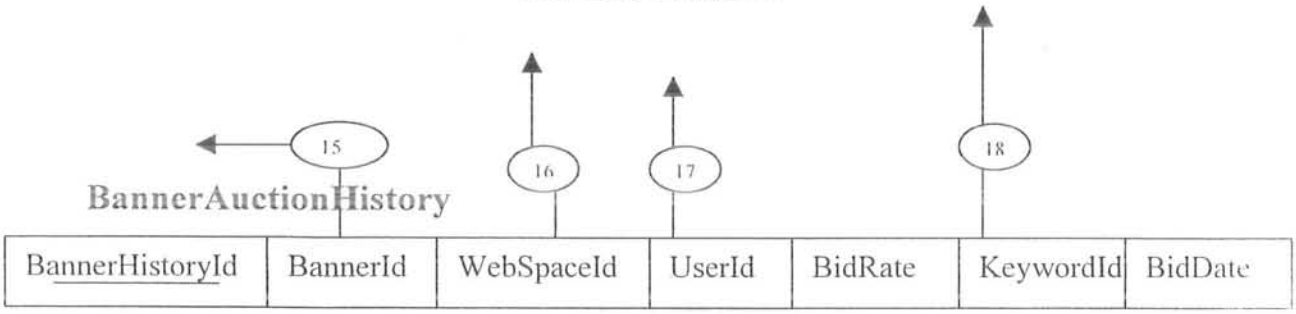


WebSpaces

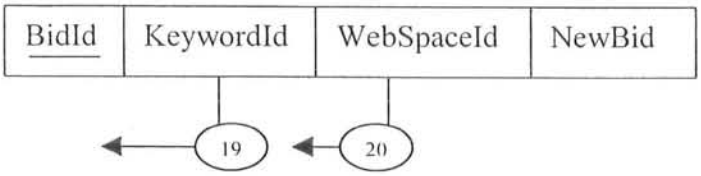
TargetedPrice	IsRandom	TargetedCharging	SubmittedDate



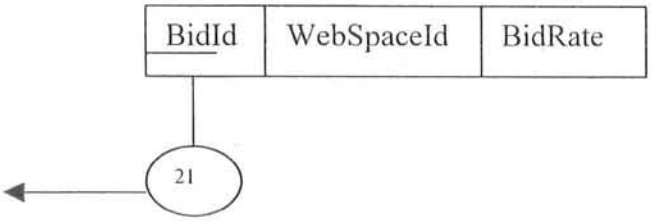
APPENDIX B



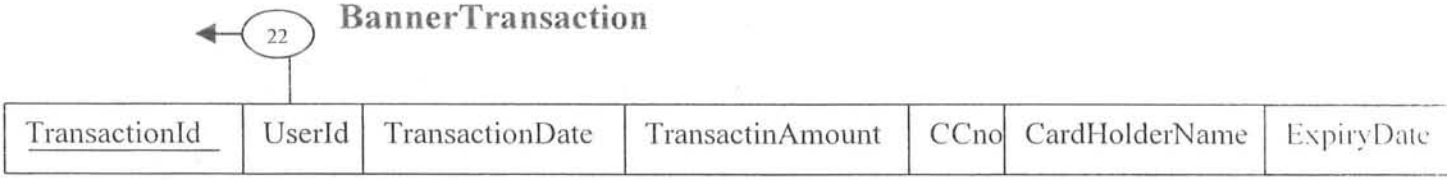
KeywordBidding



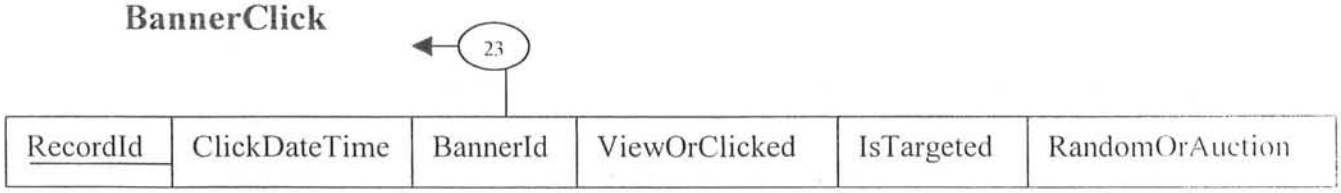
WebSpaceBidding



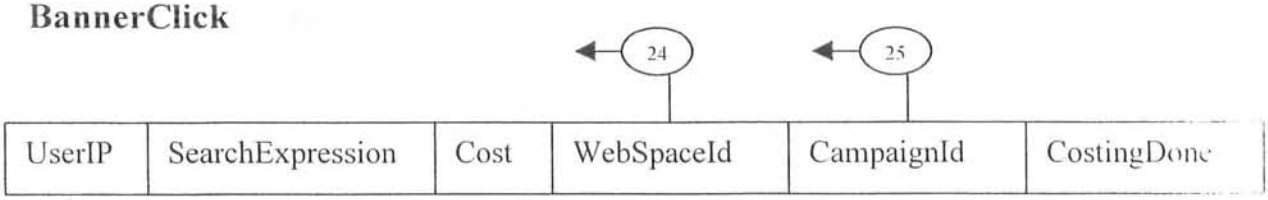
BannerTransaction



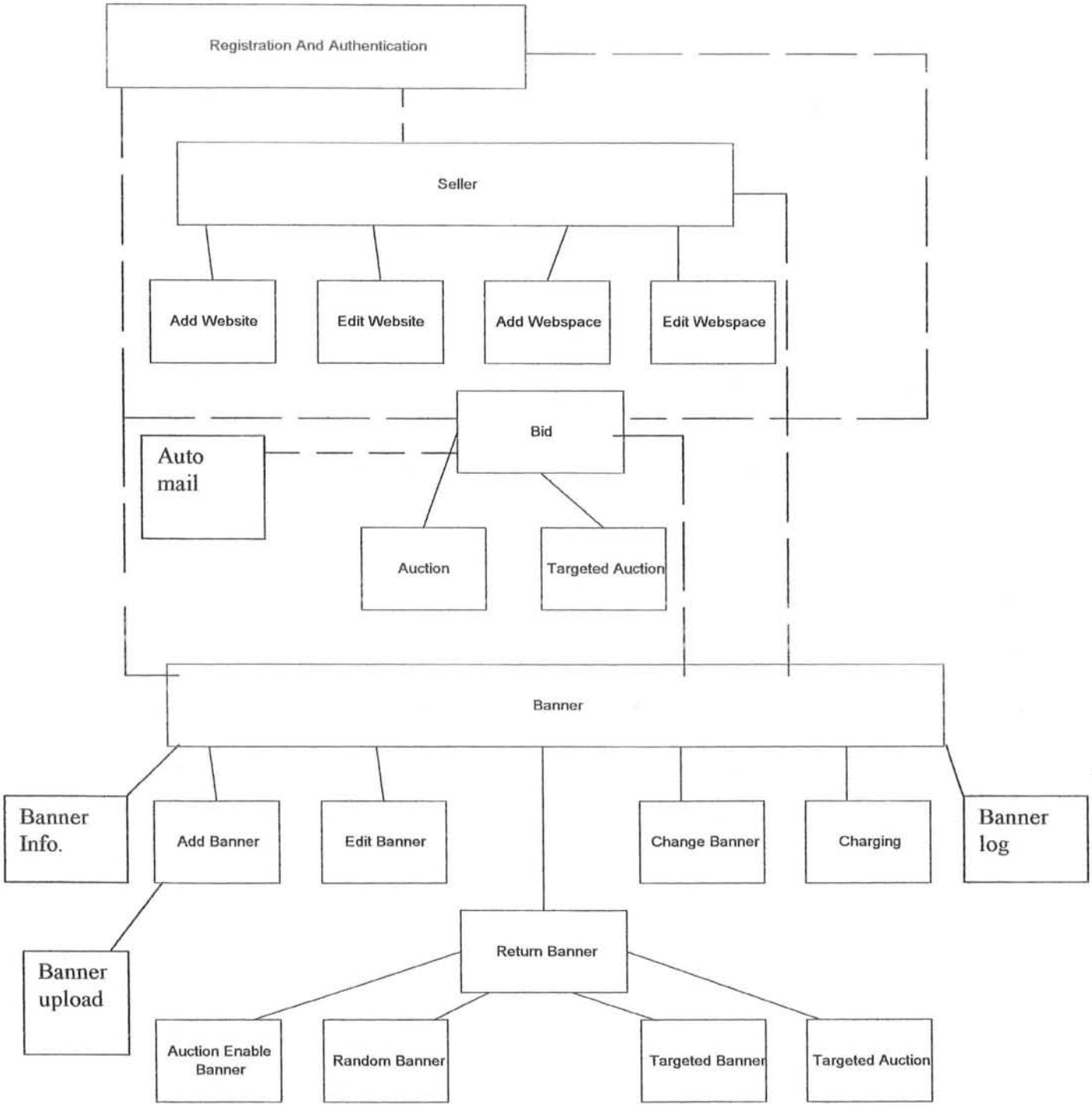
BannerClick



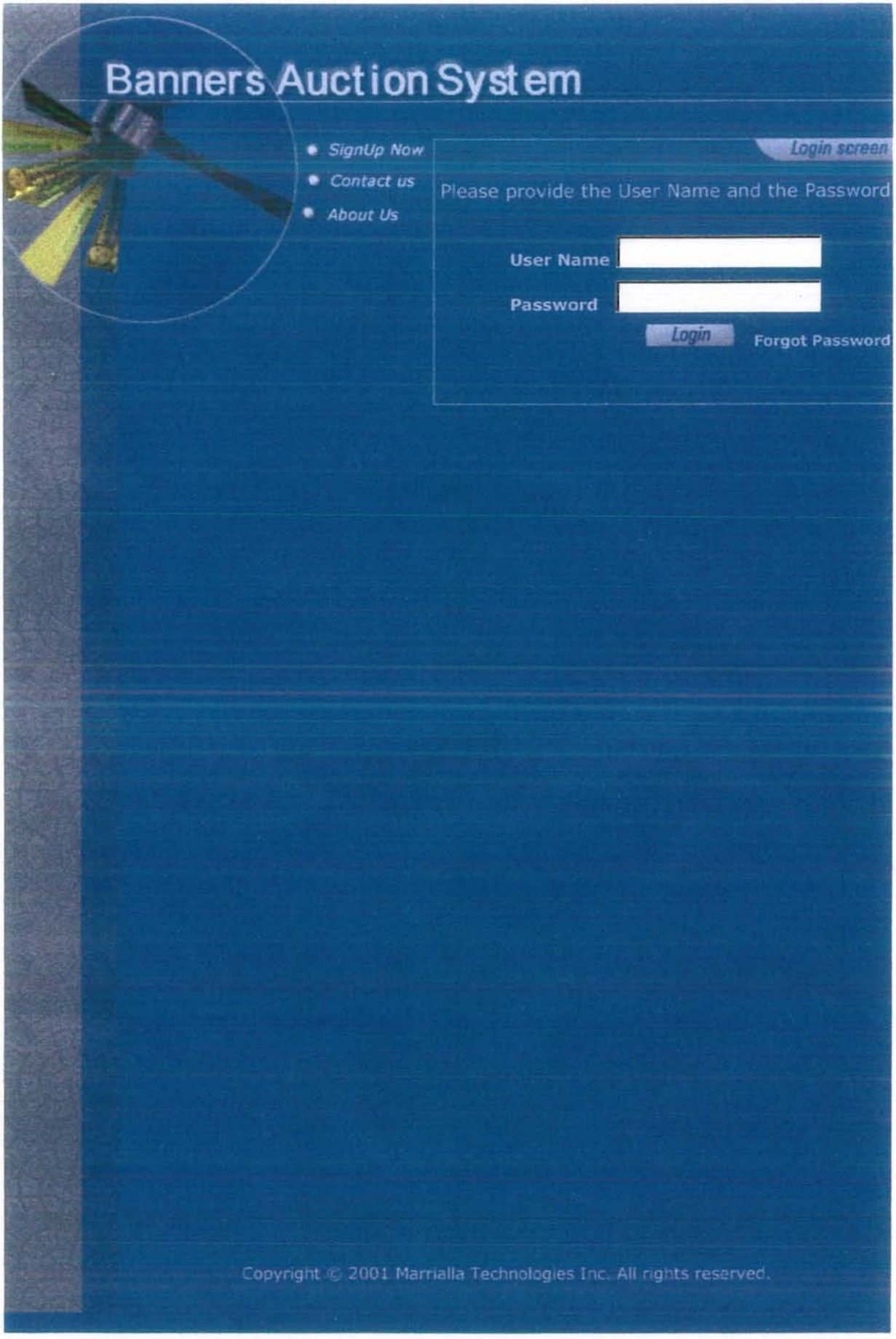
BannerClick



APPENDIX C


Registration And Authentication
Seller
Add Website
Edit Website
Add Webspace
Edit Webspace
Bid
Auto mail
Auction
Targeted Auction
Banner
Banner Info.
Add Banner
Edit Banner
Change Banner
Charging
Banner log
Banner upload
Return Banner
Auction Enable Banner
Random Banner
Targeted Banner
Targeted Auction

APPENDIX D


Banners Auction System
SignUp Now
Contact us
About Us
Login screen
Please provide the User Name and the Password
User Name
Password
Login
Forgot Password
Copyright © 2001 Marrialla Technologies Inc. All rights reserved.

Banners Websites Reports

Search existing banners by website and/or by category to add to any webspace.

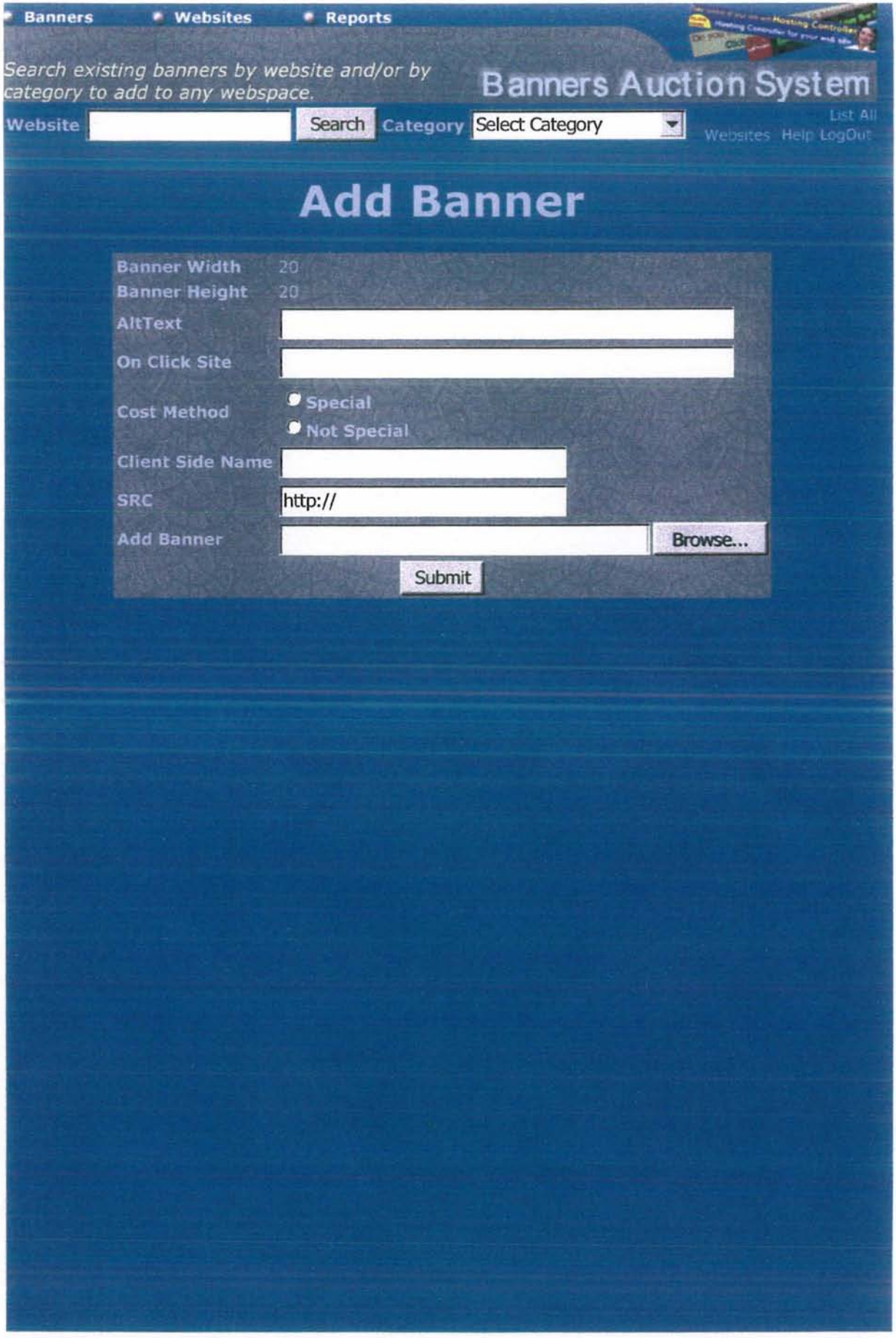
Banners Auction System

Website Search Category Select Category

List All Websites Help LogOut

Bid

Keyword	asp
Higher Bidder	shuja-ud-din khawar
Company	QAU
Current bid	2.0 ¢
Bid increment	1.0 ¢
Place new bid	¢
Submit	


Banners
Websites
Reports
Search existing banners by website and/or by category to add to any webspace.
Banners Auction System
Website
Search
Category
Select Category
List All Websites
Help
LogOut
Add Banner
Banner Width 20
Banner Height 20
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