CONTACT CENTRE MANAGEMENT

PROJECT WORK DONE AT
KG INFORMATION SYSTEMS PVT. LTD.,
COIMBATORE - 641 018.

PROJECT REPORT

SUBMITTED IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE AWARD OF THE DEGREE OF **M.Sc [APPLIED SCIENCE] SOFTWARE ENGINEERING** OF BHARATHIAR UNIVERSITY, COIMBATORE.

SUBMITTED BY

SIVAPRAKASAM.R
REG NO. **9937S0094**

UNDER THE GUIDANCE OF

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Internal guide

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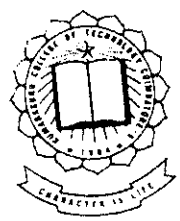

DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING
KUMARAGURU COLLEGE OF TECHNOLOGY
COIMBATORE - 641 006
MAY 2002 - AUG 2002

DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

KUMARAGURU COLLEGE OF TECHNOLOGY

(Affiliated to Bharathiar University)

COIMBATORE - 641 002

SEPTEMBER - 2002

CERTIFICATE

This is to certify that the project entitled

CONTACT CENTRE MANAGEMENT

DONE BY

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SUBMITTED IN PARTIAL FULFILLMENT OF THE REQUIREMENTS

FOR THE AWARD OF THE DEGREE OF

M.Sc [Applied science] SOFTWARE ENGINEERING

OF BHARATHIYAR UNIVERSITY

Professor and HOD 26/9/02

Internal Guide 26/9

Submitted to University Examination held on 26-9-02

Internal Examiner 26/9

External Examiner

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one : (422) 866187, 866217, 868320-24 Fax : (422) 868325 E-mail : info@kgisl.com

KGiSL

TO WHOMSOEVER IT MAY CONCERN

This is to certify that

Mr. R. Sivaprakasam

undergoing VII Semester M.Sc Software Engineering in Kumaraguru College of Technology, Chinnavedampatty has successfully completed the individual project entitled:

"Contact Centre Management "

from the period of June 2002 to September 2002 in our concern. As the source code is confidential, the company will not provide the source code of the project.

During this period, it was found that he was technically sound, sincere and hard working.

We wish him all the best in his future endeavors.

With Regards

K.G. Information Systems CBE-18.

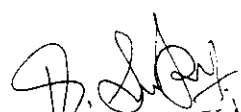
V. Suresh Kumar
Project Guide
KG Information Systems Pvt. Ltd.
Coimbatore-641018

DECLARATION

R. SIVAPRAKASAM
M.Sc. Software Engineering (4th year),
Department of Computer Science and Engineering,
Kumaraguru college of Technology,
Coimbatore.

I hereby declare that the project titled "CONTACT CENTRE MANAGEMENT" submitted in partial fulfillment for the award of M.Sc. Software Engineering degree is my original work and that has not previously formed the basis for the award of my degree or any other similar title.

Coimbatore
Date : 26-9-02



R. SIVAPRAKASAM
(Reg. No. 9937S0094)

ACKNOWLEDGEMENT

ACKNOWLEDGEMENT

I extend my profound gratitude to **Dr. K.K.Padmanabhan B.Sc. (Eng.), M.Tech, Ph.D.**, Principal, Kumaraguru College of Technology, Coimbatore for providing me an opportunity to do the project work as part of the curriculum.

I express my sincere thanks to **Prof. Dr. S.Thangasamy B.E. (Hons), Ph.D.**, Head of the Department, Computer Science and Engineering for his valuable suggestions and advice.

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I express my sincere gratitude to **Assistant Prof. Mrs.S.Devaki** B.E., MS Course Coordinator [Software Engineering] and **Mr.N.Kannan M.C.A., Lecturer** who have personally been my mentor and guide for the successful completion of the project.

I express my sincere thanks to **Mr.V.Suresh B.E,** Programmer, who gave valuable advice, suggestions and encouragement throughout the course of this project.

SYNOPSIS

SYNOPSIS

Today in the shrinking world, technology is growing up like a giant. To keep at the speed, the current technologies in use have to be updated periodically or else we will stay behind. Keeping this in mind my project has come into existence.

The project undergoes all the stage of SDLC and satisfies the requirement of the organization. The system is being developed as per the needs of the organization and end user requirement needs.

The project entitled "Contact Centre Management" (CCM) is developed in Oracle 9i with form developer for KG Information System (Private) Ltd. The system helps to manage the overall activities of the Internet Browsing Centre. The main purpose of CCM is to give authorization according to users. CCM is also used to track the web sites that are accessed by a particular user. In CCM the user can access those sites which are applicable to him. In CCM, the System Administrator (SA) can track the user's details. In case of any system failure, the message is sent to the SA. Any member of the Network Team attends to the request of the employee and services the system. The bill is produced for extra hours used by user for browsing and the report is also produced accordingly.

"CCM" has five modules they are as follows:

- Master Entry Module
- Browsing Module
- Website Tracking Module
- Servicing Module

The system is designed to overcome the problems in the organization without giving rise to ambiguity.

CONTENTS

CONTENTS

1.INTRODUCTION

1.1 PROJECT OVERVIEW

Contact Centre Management is an important tool that helps to keep track of those websites accessed by the users of the concern. The user can enter into the system by giving their user id and their password. The System Administrator (SA) has the preference to view all the modules.

The system is being divided into five modules.

- Master Entry Module
- Browsing Module
- Website Tracking Module
- Servicing Module

System Administrator controls all the master forms in CCM for the operations like addition, modification and deletion.

Browsing Module allows the user to browse websites regarding education, allows them to check mails and chat with their friends. The users are not permitted to access any illegal websites. The login time is noted and time duration is calculated. For extra hours the bill is calculated and given to user.

Tracking module tracks the website details of a particular user which is done by SA and is used for review meeting for discussion.

Servicing module is handled by SA who takes care of the system. Accepts request from user and services it.

The overview of the project is

- ✓ System study of the requirements.
- ✓ Reference of the studies made.
- ✓ Rough design of the system.
- ✓ Testing of the design through the operation.
- ✓ Making the necessary changes.
- ✓ Obtaining the final design.
- ✓ Coding the project.
- ✓ Testing the system.
- ✓ Implementing the system.
- ✓ Documenting the project.

1.2 ORGANIZATION PROFILE

THE MILESTONES:

In the year of 1996 **KGISL** was started of as software training and development at KG house. Later in 1997 it had a strategic tie-up with industry leaders like Tata Consultancy Services, Infosys, Satyam and EDS. In the year 2000 it signed a joint venture with Heartland Information Services for Medical Transcription, and also had a tie up with ORACLE Corporation, USA. Finally, in 2001 it again signed a joint venture with Prolease, USA for Software Development.

KGISL – iTechcampus:

- A training center for budding software professionals.
- We have 250 seats dedicated for training.

THE SERVICES:

- Software Development & IT Training.
- It Enabled Services.

THE INFRASTRUCTURE:

- 1,00,000 sq. feet Software Development Campus.
- 800 IBM/Acer Computers housed in the campus.
- 2 mbps IPLC Earth Station in our campus - STPI Installation.
- 256 kbps Internet Connection - STPI Earth Station.

THEY OFFER:

- We have an enthusiastic and hard-working team of software engineers who are working on projects.
- Our software engineers have invaluable hands-on technical expertise in the latest tools.

THE SECTORS CATERED TO:

- Automotive/Engineering
- Healthcare, Insurance services
- Banking and Financial Services

THE SERVICES OFFERED:

- Conversion from one platform to another.
- Maintenance of existing software systems.
- Networking solutions and Reengineering services.
- Client Server Solutions And Web Content Development.
- Web Design, web site registration and maintenance.
- Web Content Development.
- Web Infrastructure building & support services.

THE CLIENTS:

- TESCO Engineering, Michigan, USA - one of the biggest manufacturers of automotive door panel systems.
- Allied Engineering Services, USA.
- TAGNET, USA.

THE TRAINEES:

- Database Administrators.
- Java Programming Specialists, E-commerce Specialists.
- Network Engineers, Webmasters.
- Software Quality Assurance Specialists.

SYSTEM STUDY AND ANALYSIS

2.SYSTEM STUDY AND ANALYSIS

System Study is an activity that encompasses most of the tasks that we have collectively called Computer System Engineering. System study is conducted with the following objectives.

- Identify the needs.
- Evaluate the system concept for feasibility.
- Perform economic and technical analysis.
- Allocate functions to hardware, software, people, databases and other system elements.
- Create a system definition that forms the foundation for all subsequent engineering work.

2.1 EXISTING SYSTEM

The existing system is manual, which is quite tedious and time consuming. Also it is more error prone.

- In the existing system, the Contact Centre Management of KGiSL is not automated.
- In the existing system, the allocation of computer to user is done manually.
- The activities of user cannot be watched so, the user can access any illegal website.
- Any ideas to be ex-changed with the other staffs are done by the system administrator in person.

2.1.1 DRAWBACKS OF THE EXISTING SYSTEM

As mentioned above in the existing system, there is at present a manual system for System Administration. Thus all the drawbacks associated commonly with manual systems will be evident in this system also.

The drawbacks present in the existing system can be summarized as:

- Slow when compared to an automated solution.
- Since it is manual, it is prone to a lot of typographical errors leading to frequent changes.
- Cannot handle multiple requests.
- The user can access any illegal websites.
- The billing is done in manual processing and the accurate bill cannot be produced.

2.1.2 NEED FOR PROPOSED SYSTEM

The proposed system aims to remove most of the drawbacks found extensively in the existing system. It can be thought of as maintenance friendly, faster development in Project Oriented Approach.

Thus the following benefits are acquired from the proposed system.

- Faster compared to the existing system.
- Comparatively less error prone.
- Maintains proper flow of control and relationships.
- Capable of handling multiple requests as now it becomes portable on the Internet.

2.2 USER CHARACTERISTICS

The identified users of the project are :

- The internal user of KGiSL who requests for Browsing.
- The trainee of Kgisl who request for browsing only education websites.
- The system administrator at KGiSl who provides right to various user and to add users to a system and to track the website details and system details.

The intended users of this product should have the basic knowledge in Windows environment and data entry operation.

2.3. PROPOSED SYSTEM

The proposed system being developed as a replacement for the existing system is a Graphical user interface with the good interactions with the database. The Proposed system is aimed to simplify the complex and redundant process. It is primarily an application oriented which could be extended in the future. Hence the proposed system is a complete automation of the CCM.

Moreover, the advantages of the proposed systems are,

- It is fully automated, so no need to manually enter the details in the system.
- The user can access only education websites and he cannot access any illegal websites.
- SA can track the websites accessed by a particular user.
- SA can produce the bill for extra browsing hours.

PROGRAMMING ENVIRONMENT

P-825

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LIBRARY
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. PROGRAMMING ENVIRONMENT

.1 HARDWARE CONFIGURATION:

SERVER: Intel Rack Server

PROCESSOR	:	Pentium III
PROCESSOR SPEED	:	600 MHz
MAIN MEMORY	:	512 MB
HARD DISK	:	40 GB SCSI
DISPLAY TYPE	:	14" SVGA COLOR
KEYBOARD	:	104 KEYS
MOUSE	:	2 Button Serial Mouse

CLIENT:

PROCESSOR	:	CELERON (minimum)
PROCESSOR SPEED	:	500 MHz
MAIN MEMORY	:	128 MB
HARD DISK	:	20 GB
DISPLAY TYPE	:	14" SVGA COLOR
KEYBOARD	:	104 KEYS
MOUSE	:	2 Button Serial Mouse

SOFTWARE CONFIGURATION

OPERATING SYSTEM	:	Windows NT
FRONT END	:	Oracle Form Developer
BACK END	:	Oracle9*i*

3.2 DESCRIPTION OF SOFTWARE USED

Oracle 9i :

Oracle Corporation is the world's leading supplier of software for information management, and the world's second largest software company. Oracle was the first company to release a product that used the English-based structured Query Language, or SQL. This language allows the end users to extract information themselves, without using a systems group for every little report.

Headquartered in Redwood Shores, California, Oracle is the first Software Company to implement its model of enterprise software management through Internet capable databases and products, and the first major Software Company to make full-featured products, available electronically on the Internet. It is the only company capable of implementing end-to-end enterprise IT infrastructure and application solutions on a global scale.

Oracle basically does three things

- Lets you put data into it
- Keeps the data
- Lets you get the data out and work with it

Oracle supports this keep-in-out approach and provides clear tool that allows us with considerable sophistication in how data is captured, edited, modified, and put in; how to keep it securely; and how to get it out to manipulate and report on it.

An object-relational management system (ORDBMS) extends the capabilities of the RDBMS to support object-oriented concepts. We can use oracle as an RDBMS or take the advantage of its object-oriented features. Oracle 8 is the first object-capable database developed by Oracle. Oracle 9i, the database for Internet computing, provides advanced tools to manage all types of data in web sites.

Oracle 8 is the first object-capable database developed by Oracle. Oracle 8i is an Object Relational Database Management System (ORDMS). Oracle 8i, the database for Internet computing, provides advanced tools to manage all types of data in web sites. Oracle 8i installation is done through a global tool called Universal Installer. Thus installation is done on any system irrespective of the operating system.

The Internet File System (IFS) combines the power of Oracle 8i with the ease of a file system. It allows users to move all of their data into the Oracle 8i database, where it can be stored and managed more efficiently.
Oracle 8i intermedia allow users to web-enable their multi-media data - including image, text, audio and video data.

Oracle 8i includes a robust, integrated, and scalable Java Virtual Machine within the server (Jserver), thus supporting Java in all tiers of applications. This eliminates of necessity of recompiling or modifying Java code when it is to be developed on a different tier.

With the newly introduced resource management, the DBA can choose the best method to fit an application's profile and workload. The extended features of parallel server and networking improve ease of system administration. The extended functionality of advanced replication results in better performance and improves security.

Oracle 8i provides full, native integration with Microsoft Transaction Server (MTS) in the Windows NT environment. Application development is simplified by the Oracle Application Wizard (AppWizard) for Visual Studio, which provides developers with a GUI tool for creating a Visual C++, Visual Interdev, or Visual Basic applications accessing data in an Oracle database.

Oracle9*i* continues Oracle8*i*'s focus on the Internet by providing a series of specific capabilities and product bundles targeted at eBusiness environments. In addition, Oracle9*i* continues to add features and capabilities that extends existing investment in mission-critical infrastructure. Oracle9*i* has been designed with focus on certain key development areas. These areas are:

Key infrastructure areas

* Availability(**Achieving Continuous Data Availability**)

Oracle9*i* dramatically extends Oracle's leadership in Internet database availability, critical for any eBusiness application. Key focus areas in Oracle9*i* include:

- Providing an industry leading zero data loss data protection environment
- Reducing offline maintenance requirements with support for more online operations
- Providing fast and precise repair of damaged databases

* Scalability and Performance

Oracle9*i* allows eBusiness to scale to tens of millions of users performing millions of transactions per hour. Key focus areas include:

- Transparent cluster scalability and performance
- Scalable session state management
- Optimized features critical for eBusiness

* Security (Providing an End-to-End Security Infrastructure)

Oracle9*i* continues to provide the most secure application development and deployment platform in the industry. Key focus areas include:

- Strong, three-tier security
- Standards-based Public Key Infrastructure (PKI)
- Deep Data Protection
- Improved user and security policy management
- Data Encryption
- Oracle Label Security
- Oracle Internet Directory

* Development Platform (**Development Platform for *e*Business Applications)**

Oracle9*i* continues to offer the best development platform for eBusiness and traditional application development. Key focus areas include:

- Enterprise Java Engine
- XML type and XDK
- SQL and PL/SQL improvements

* Manageability (Management is one of the key areas of improvement for Oracle9i)

There are five aspects to our approach taken with management in Oracle9*i*:

- Make the database self managing in certain key areas
- Streamline and improve the operational management of an Oracle9*i* database
- Provide tools and techniques that significantly simplify and reduce the task time required to administer Oracle9*i*
- Enable fine-grained, automatic resource management

- Provide an end-to-end system management solution that manages the entire Oracle stack, not just the database.

* Windows2000 Integration

Oracle9*i* continues Oracle's lead as the platform of choice for organizations deploying on Windows 2000. Key focus areas are:

Close integration with Windows 2000

Facilitated development and deployment on MS Windows platforms

ORACLE FORMS DEVELOPER

Oracle Forms Developer, a component of the Oracle Internet Developer Suite, is a productive development environment for building enterprise-class, scalable database applications for the Internet. Oracle Forms Developer provides a set of tools that enable business developers to easily and quickly construct sophisticated database forms and business logic with a minimum of effort.

Oracle Forms Developer uses powerful declarative capabilities to rapidly create applications from database definitions that leverage the tight integration with Oracle 9i. The toolset leverages Java technology, promotes reuse, and is designed to allow developers to declaratively build rich user interfaces.

Developer productivity is further increased through a single integrated development environment that enables distributed debugging across all tiers, utilizing the same PL/SQL language for both server and client.

Oracle Forms Developer's tight integration with Oracle Designer enables you to use a productive model-driven development approach. Oracle Forms Developer applications can be automatically generated from business requirements designed in the Oracle Designer modeling environment. These models are stored in the Oracle Repository. Code-level changes made within the Oracle Forms Developer environment can be automatically reverse engineered back into the models, preserving the integrity between the models and the application.

Oracle Forms Services:

Oracle Forms Services is a component of Oracle 9i Application Server for delivering Oracle Forms Developer applications to the internet. Oracle Forms Services automatically provides the infrastructure needed to successfully deliver applications on the internet through built-in services and optimizations.

Oracle Forms Services uses a three tier architecture to deploy database applications:

- The client tier contains the Web browser, where the application is displayed and used.
- The middle tier is the application server, where the application logic and server software reside.
- The database tier is the database server, where enterprise data is stored.

Other major elements in Oracle 9i Application Server

9i AS consists of a set of services and utilities that can be used to implement applications in a distributed environment for scalability and reliability. They are:

- Communications Services: These services handle incoming requests received by 9iAS. Some of these requests are processed by the Oracle HTTP Server and some requests are routed to other areas of 9iAS for processing.
- Presentation Services: The Presentation services of 9iAS generally output some kind of graphical representation, often in the form of HTML.

- Business Logic Services: 9iAS provides several ways to develop business logic, utilizing both Java development approaches and high-level model-driven techniques. These approaches include java technologies such as Enterprise javaBeans(EJB) and Oracle Business Components for java(BC4J), as well as rich GUI oriented approaches such as Oracle Forms and Reports.
- Data Management Services: To reduce the load on the back-end database instance, and to avoid network roundtrips for read-only data,9iAS includes Oracle 8i cache.
- System Services: To provide system management and security services, 9i AS includes Oracle Enterprise Manager and Oracle Advanced Security. These system services provide a comprehensive management framework for your entire Oracle environment and network security using secure sockets layer(SSL)-based encryption and authentication facilities.

ORACLE FORMS DEVELOPER KEY FEATURES:

Oracle Forms Developer provides a number of features that contribute to the strength and flexibility of the product.

Comprehensive GUI Support:

Oracle Forms Developer supports the native features of Microsoft Windows 95 and NT 4.0, and it provides portability to Motif and character-mode production environments.

Distributed Applications:

The tools provide local, client-server, and Web support with multiple database connections per application. In addition to Oracle 7 and Oracle 8, your

applications can access Structured Query Language (SQL) databases through Open database connectivity (ODBC).

Tools for Rapid Application Development:

Oracle Forms Developer provides the tools that simplify many development tasks, enabling you to create and modify applications with little or no code. Productivity is enhanced with Oracle forms Developer's wizard-based rapid application development and built-in commands that perform common functions.

Application partitioning:

You can place individual PL/SQL program units on the database server, the application server, or in the client-side application, whichever is most suitable in each case. You can copy and move objects between modules and the database server by using convenient drag-and-drop techniques.

Flexible Source Control

You can store the definitions of your application modules in flat files or in the Oracle database. You can perform version control on these modules and produce documentation by using Oracle Forms Developer facilities.

Extended Scalability:

You can scale applications from single users to tens of thousands, with no changes to the application. Scalability is inherent in the multitiered architecture of the product. There is support for server functionality, such as array DML, database cursors, bind variables, and result sets.

Object Reuse:

Oracle Forms Developer offers an inheritance model that facilitates the inheritance of attributes and code from one object ton another and from one application to another, through subclassing and object libraries

SYSTEM DESIGNING AND DEVELOPMENT

4. SYSTEM DESIGNING AND DEVELOPMENT

4.1 INPUT DESIGN

The quality of system input determines the quality of system output. Input specification describes the manner in which data enter the system for processing.

Master Entry Module

In the Master Entry Module the following information are maintained they are

Domain Details

User Details

Staff Website Details

Trainee Website Details

All these four function are elaborated as follows…

Domain Details

In the domain details, the system administrator can enter the new domain details or he can modify the existing details or he can delete the domain details.

User Details

In the user details, the system administrator can enter the new user details or he can modify the existing details or he can delete the user details.

Staff Website Details

In the staff website details, the system administrator can enter website details or he can modify or he can delete the website details for staffs.

Trainee website details

In the staff website details, the system administrator can enter website details or he can modify or he can delete the website details for staffs.

4.2 OUTPUT DESIGN

Outputs from computer system are required primarily to communicate the results of processing to users. Good output design should ensure that the information provided to the users is complete and at the same time it is concise. Generally the software is graded solely by its output.

In the tracking module the System Administrator can access the website detail of the user's which is worked by him in a particular time. So that is helpful in review meeting. In the website module the system Administrator can track website details of particular user by date, by month and by year.

Reports:

There are three reports, they briefed as follows…

Date Report: This shows all the required details of those website names that were browsed in that selected date.

Monthly Report: This shows all the required details of those website names that were browsed in that selected month.

Yearly Report: This shows all the required details of those website names that were browsed in that selected year.

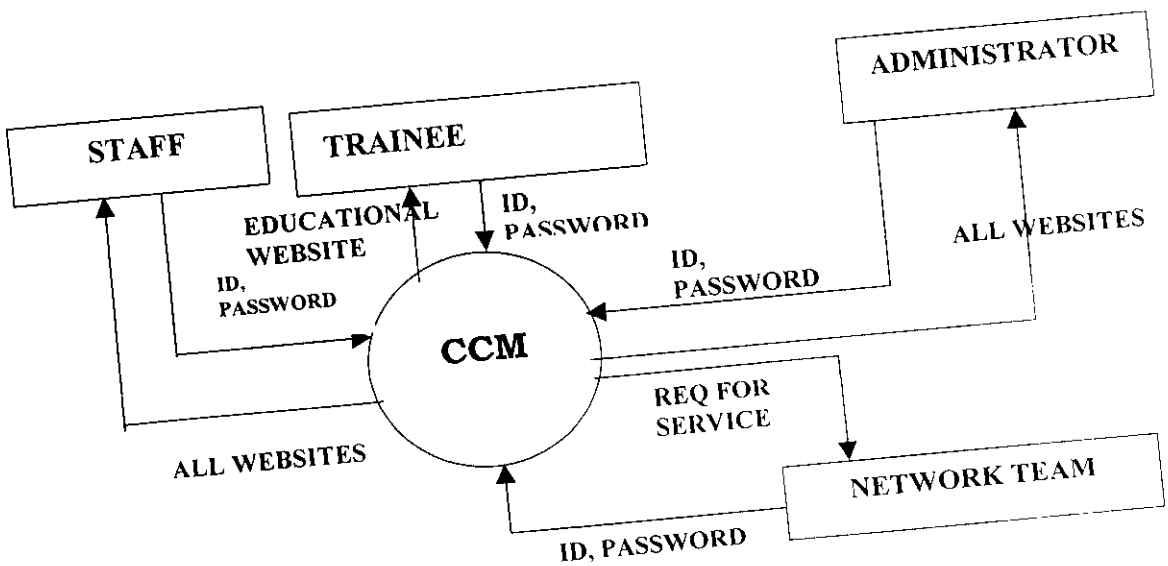
The bill for extra browsing hours is also produced as report.

4.3 DATABASE DESIGN

A database is a collection of stored data organized in such a way that all the user requirements are satisfied by the database. Oracle 9i provides extra optional facilities and administrator access to use the database for adding, modifying and retrieving data.

4.4 CONTEXT FLOW DIAGRAM

The first step in the requirements determination is the understanding of the general characteristics of the business system under study. The top-level diagram is often called context diagram. It contains a single process and defines the whole system.

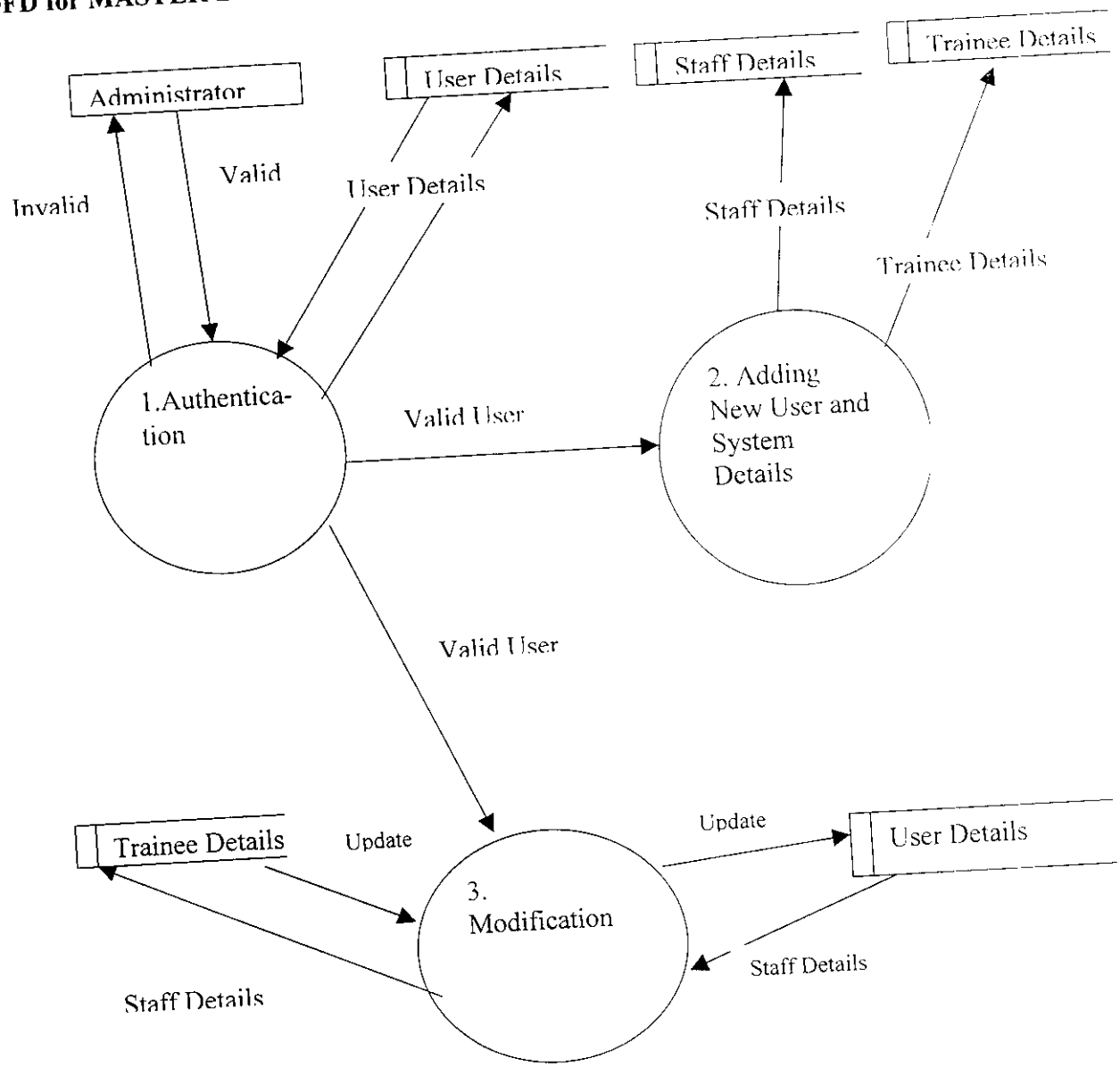


4.5 DATA FLOW DIAGRAM

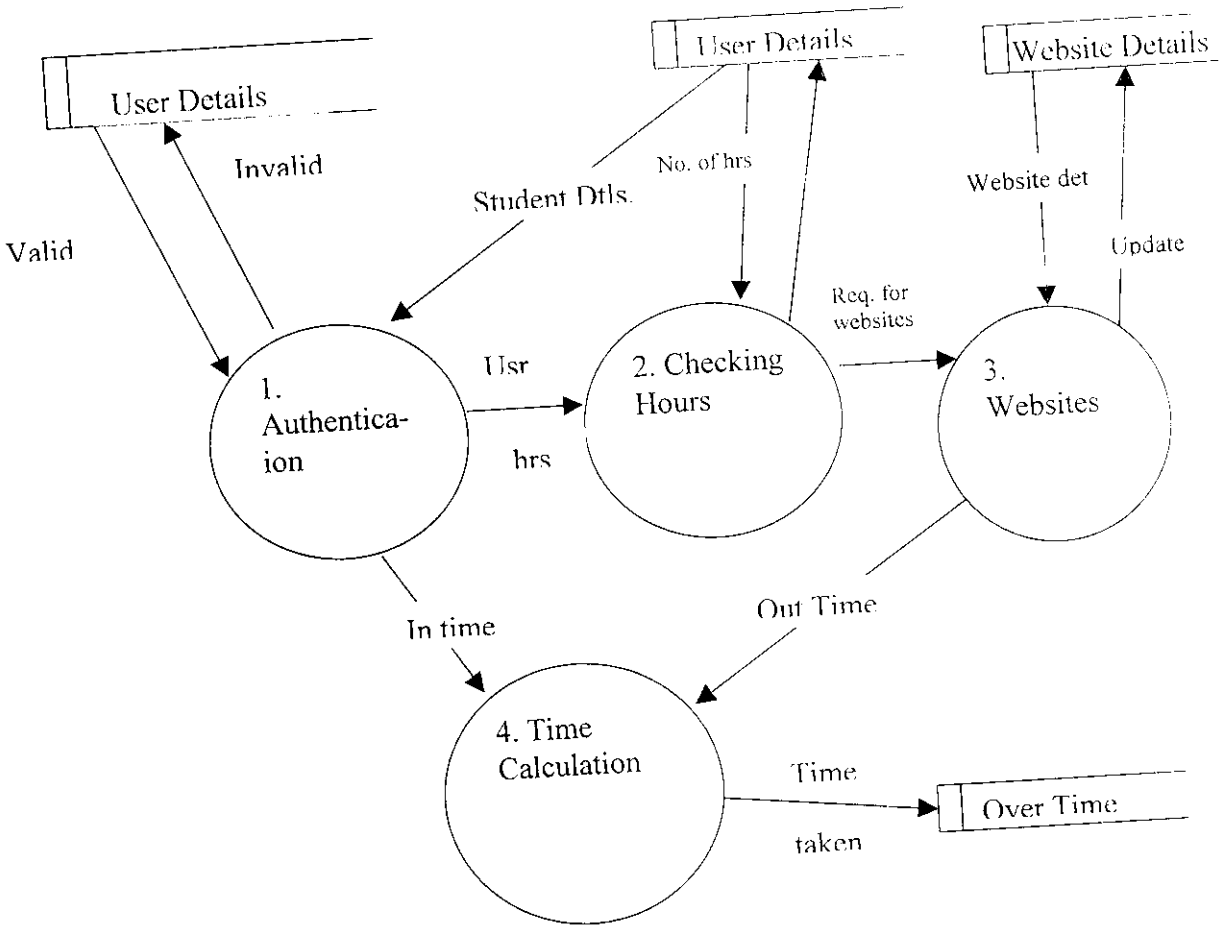
Data Flow Diagrams model events and processes i.e. activities, which transform data within the system. DFD's examine how data flows into, out of and within the system. A DFD is a structured analysis technique, which assists the system analyst to put together a graphical representation of data processes throughout the organization.

In data flow diagrams, the symbol set is composed of data flow, entity, data store and processes. A data flow diagram illustrates the flow of data through a system and the work performed by the system. An entity can be any person, organization or other system that interacts with the existing system. A process is work or action performed by people, machines etc within the system. Data store is a location where data is held temporarily or permanently. A data flow is any item that carries data to, within, or from the system.

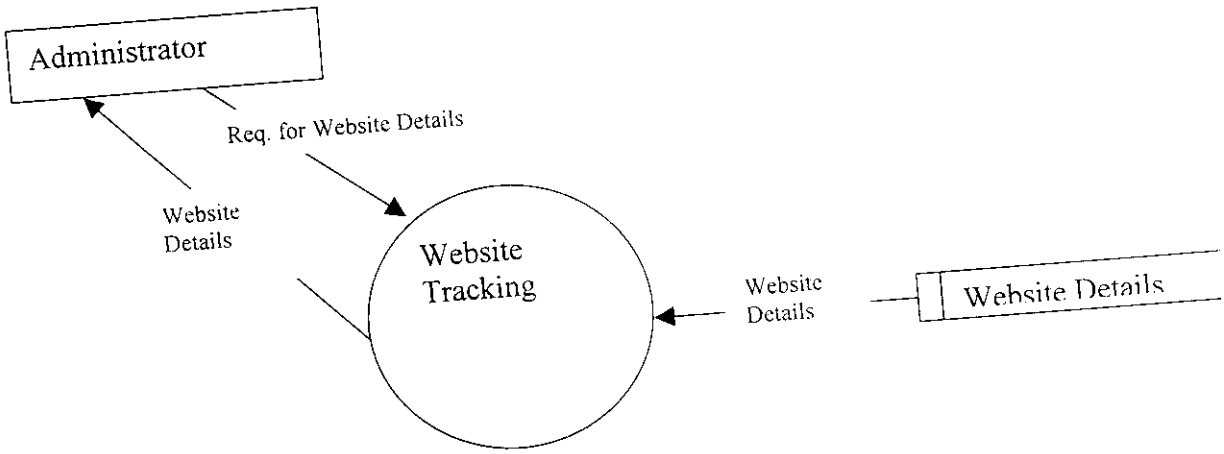
DFD for MASTER ENTRY



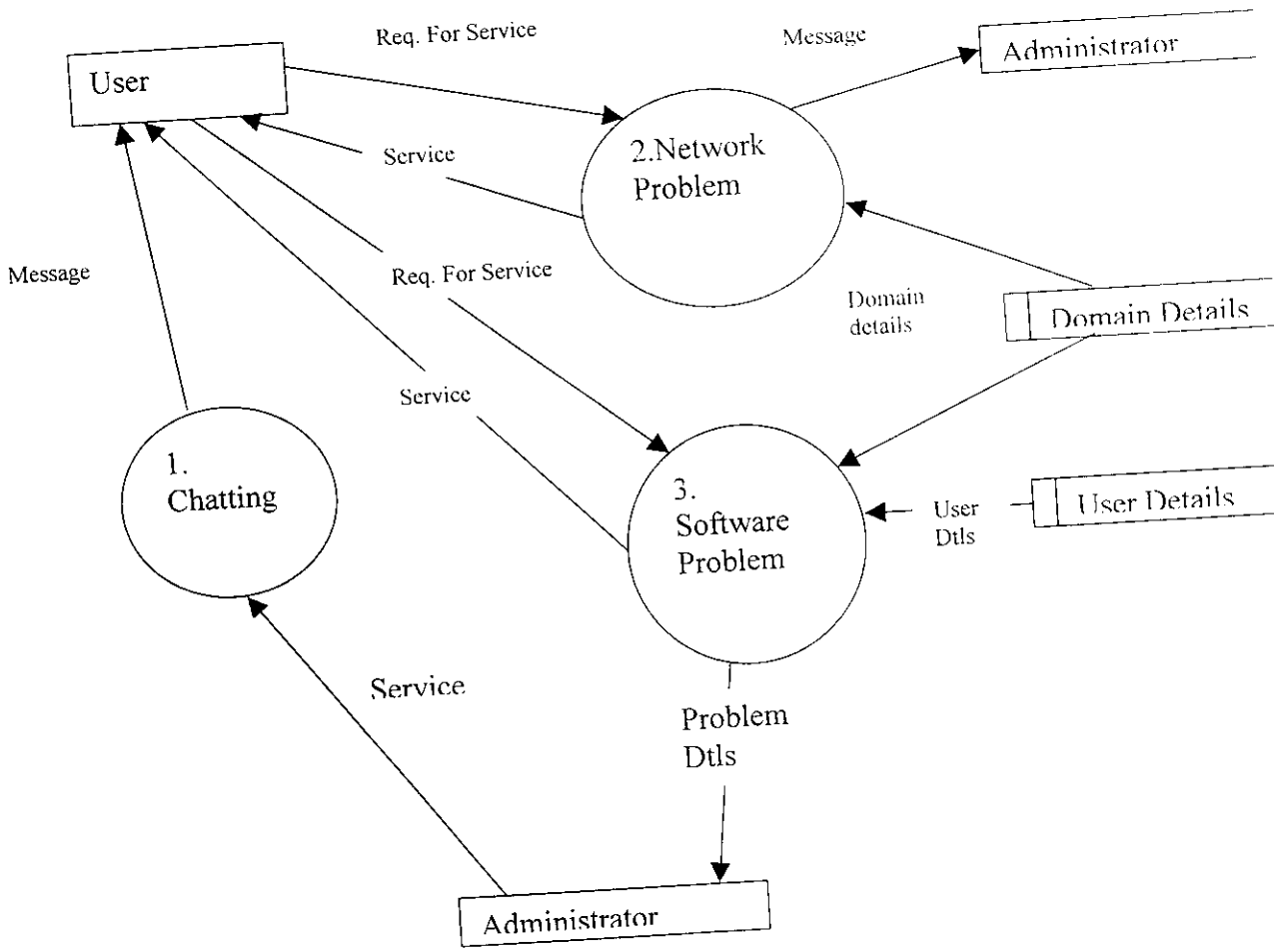
DFD FOR BROWSING



DFD FOR TRACKING



DFD for SERVICING



SYSTEM IMPLEMENTATION AND TESTING

5.SYSTEM IMPLEMENTATION AND TESTING

5.1 SYSTEM IMPLEMENTATION–Overview

Implementation is the most important tasks in project. Implementation is the Phase, in which one has to be cautious, because all the efforts undertaken during the project will be fruitful only if the software is properly implemented according to the plans made.

When this system is linked with the Internet world, the communication network and tests of the network along with the system are included under implementation, system-testing checks the readiness and accuracy of the system access update and retrieve data from new files.

5.2 SYSTEM TESTING – Overview

Testing is an important stage in the system development life cycle (SDLC). Software testing is a critical element of software quality assurance and represents the ultimate view of specification, design and coding.

If testing is conducted successfully according to the objectives as stated above, it would uncover errors in the software.

There are 3 ways to test a program.

Tests for computational complexity amount to an experimental analysis of the complexity of an algorithm or an experimental comparison of two or more algorithms. which solve the same problem.

The entire testing process can be divided into 3 phases.

1. Unit testing.

2. Integrated testing.
3. Final/System testing.

Unit Testing

Unit testing focuses verification efforts on the smallest unit of software design in the module. This is also known as module testing. In this testing step each module is found to working satisfactorily as regard to the expected output from the module. The testing was carried out during coding stage itself. There are some validation checks for the fields. It is very easy to find error debut the system.

Here we go in for checking every individual processes like the functioning of tabs when moved, field length etc.

Code Module Testing

To locate error, focus is given on each and every module. This is known as code module testing. Those enable as to detect errors and correct it without affecting any other modules.

In this all the Code Modules were tested individually one after another. The following were tested in all the modules.

1. Loop testing.
2. Boundary Value Analysis.
3. Integrated Testing.

In this, all the Code Modules were put together and their working was tested. The idea behind this test is to check the interaction between the different interfaces that modules provide to other modules by way of methods, properties etc.

Final / System Testing

This is the final step in testing. In this the entire system was tested as a whole with all forms, code, modules and class modules. This form of testing is popularly known as Black Box Testing or System Testing.

Black Box Testing methods focus on the functional requirement of the software. That is, Black Box Testing enables the software engineer to derive sets of input conditions that will fully exercise all functional requirements for a program.

Black Box Testing attempts to find errors in the following categories; incorrect or missing functions, interface errors, errors in data structures or external database access, performance errors and initialization errors and termination errors.

1. For Correctness.
2. For implementation efficiency.
3. For Computational efficiency.

Tests for correctness are supported to verify that a program does exactly what it was designed to do. This is much more difficult than it may at first appear, especially for large programs. The various modules should be checked for their functionality and accuracy.

Tests for implementation efficiency attempt to find ways to make a correct program faster or useless storage. It is code-refining process, which reexamines the implementation phase of algorithm development. The code should be optimized to the maximum to meet the performance standards.

5.CONCLUSION

The complete design and development of the system 'Contact Centre Management' is presented in this dissertation. A good amount of user-friendly features have been incorporated in this system and it is possible for any user to exploit these features to get the maximum benefit.

The programming techniques used in the design of the system provide a scope for further expansion and implementation of any changes, which may occur in future. The various reports generated by the system have provided to be quite useful.

The system has been tested with sample data covering all possible options for each function. Its performance is satisfactory. The system is under implementation.

The system is developed with the specifications and abiding by the existing rules and regulations of the company.

Since the requirements of any organization and their standards are changing day to day the system has been designed in such a way that its scope and boundaries could be expanded in future with little modification. As a further enhancement this system can be integrated with any other system.

Since the system is Internet enabled it needs massive security aspects. So, entry is permitted according to the Userid & Password, which users give. For each screen entry is permitted according to the priority of the user.

SCOPE FOR FURTHER DEVELOPMENT

6. SCOPE FOR FURTHER IMPROVEMENTS: -

Now the system is used in intranet and in future the system can be web-enabled. Now this system can send mail through the network. In future it could be improved to receive the mails from the users or clients to know their satisfaction regarding the corrected changes. This system can also be improved to divide the changes into number of sub tasks and they can be allocated to different Software Engineers. This system can also be made WAP (Wireless Application Protocol) enabled, so that the users can post and send mails wherever they wish.

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Henry, Abraham Silberchatz.

9.1 TABLE DESIGN

Table Name: **TbDomainDet**
Description: Domain Details

This Table maintains details about the Domain of KGisl.

Field Name	Field Description	Type	Key	Size	Null/ NN
PkDomaincode	Domain Code	Varchar2	Primary key	15	NN
Domainname	Domain Name	Varchar2	Unique key	25	NN

Table Name: **TbUserdet**
Description: **User Details**

This table maintains Details about the User.

Field Name	Field Description	Type	Key	Size	Null/ NN
Pkusercode	User Code	Varchar2	Primary Key	10	NN
Username	User Name	Varchar2		30	NN
Designations	User Designation	Varchar2		30	NN
Fkdomaincode	Domain Code	Varchar2	Foreign key	10	NN
Userpassword	Password	Varchar2		10	NN
Assigneddate	Date of assigned	Date			NN

Table Name: **Tbhoursdet**
Description : Hours Details

This Table maintains the details about the hours used by a particular user.

Name	Field Description	Type	Key	Size	Null/ NN
Usercode	User Code	Varchar2	Foreign Key	10	NN
Logintime	Login Time	Timestamp		6	Null
logouttime	Logout Time	Timestamp		6	Null
Timedifference	Time Difference	Timestamp		6	Null

Table Name: **Tbextrahoursdet**
Description : Extra Hours Details

This Table maintains the details about the hours used by a particular user.

Name	Field Description	Type	Key	Size	Null/ NN
Usercode	User Code	Varchar2	Foreign Key	10	NN
Logintime	Login Time	Timestamp		6	Null
logouttime	Logout Time	Timestamp		6	Null
Extrahours	Extra Hours	Timestamp		6	Null
Dateofbrowsing	Date of Browsing	Date			Null
Amount	Extra Amount	Number		5,2	Null

Table Name: **Tbextrahoursdet**
Description : Extra Hours Details

This Table maintains the details about the hours used by a particular user.

Name	Field Description	Type	Key	Size	Null/ NN
Usercode	User Code	Varchar2	Foreign Key	10	NN
Starttime	Start Time	Timestamp		6	Null
Finishtime	Finish Time	Timestamp		6	Null
Totaltime	Total Time	Timestamp		6	Null
Website	Website Names	Varchar2		40	NN

Table Name: **Tbstaffwebsite**
Description: Staff Website Details

This table maintains details about the website details of staff in KGisl.

Field Name	Field Description	Type	Key	Size	Null/ NN
Tcpip	TCP-IP Address	Varchar2	Unique Key	10	NN
Websitenames	Website Name	Varchar2		50	NN

Table Name: **Tbtraineewebsite**
Description: Trainee Website Details

This table maintains details about the website details of Trainees in KGisl.

Field Name	Field Description	Type	Key	Size	Null/ NN
Tcpip	TCP-IP Address	Varchar2	Unique Key	10	NN
Websitenames	Website Name	Varchar2		50	NN

Table Name: **Tbextrahoursdet**
Description : Extra Hours Details

This Table maintains the details about the hours used by a particular user.

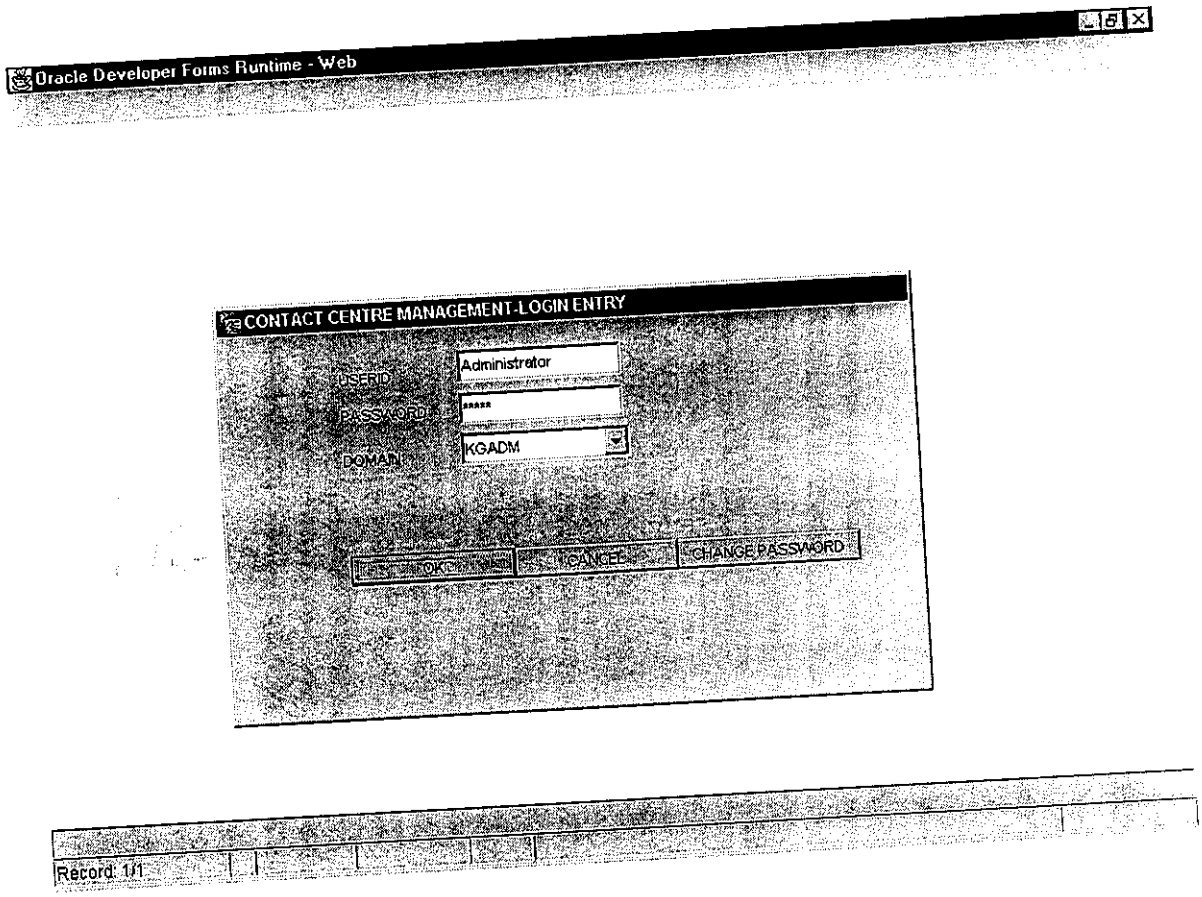
Name	Field Description	Type	Key	Size	Null/ NN
Usercode	User Code	Varchar2	Foreign Key	10	NN
Starttime	Start Time	Timestamp		6	Null
Finishtime	Finish Time	Timestamp		6	Null
Totaltime	Total Time	Timestamp		6	Null
Website	Website Names	Varchar2		40	NN

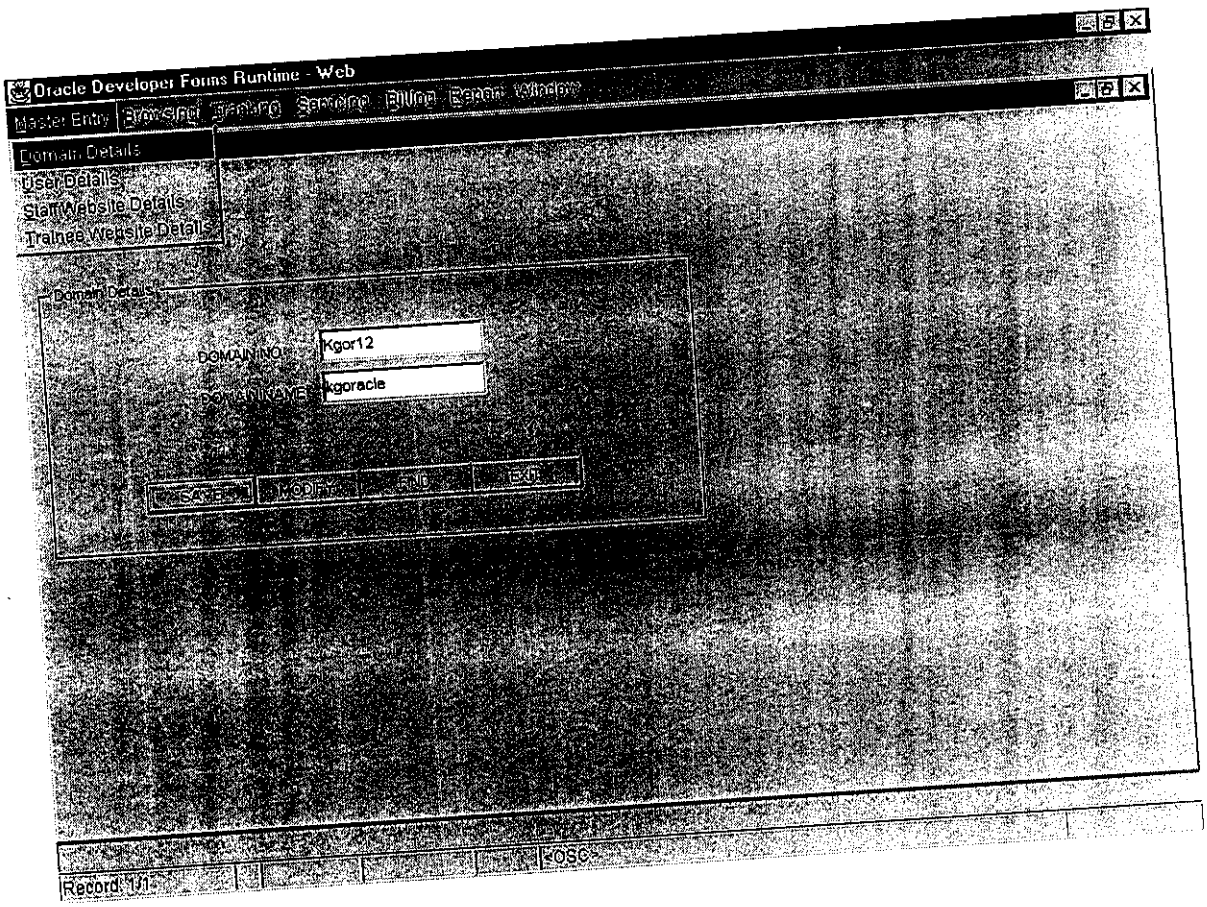
Table Name: **Tbservice**
Description : Service Details

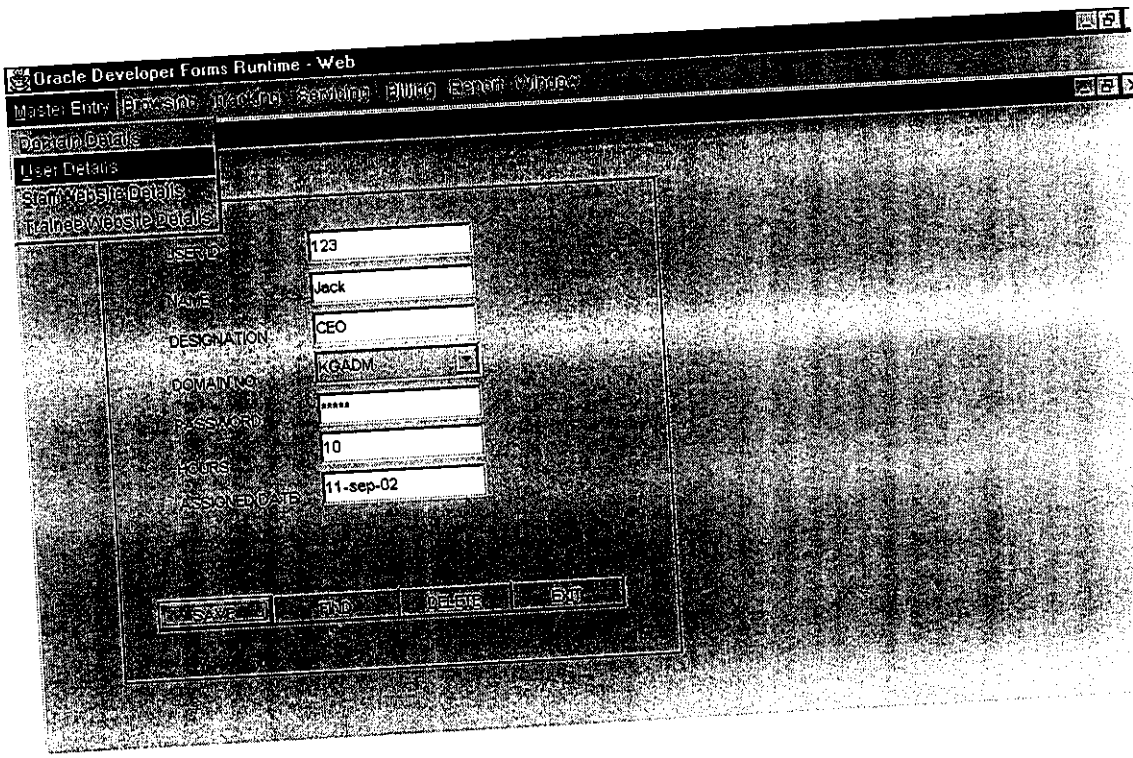
This Table maintains the details about the service used by a particular user.

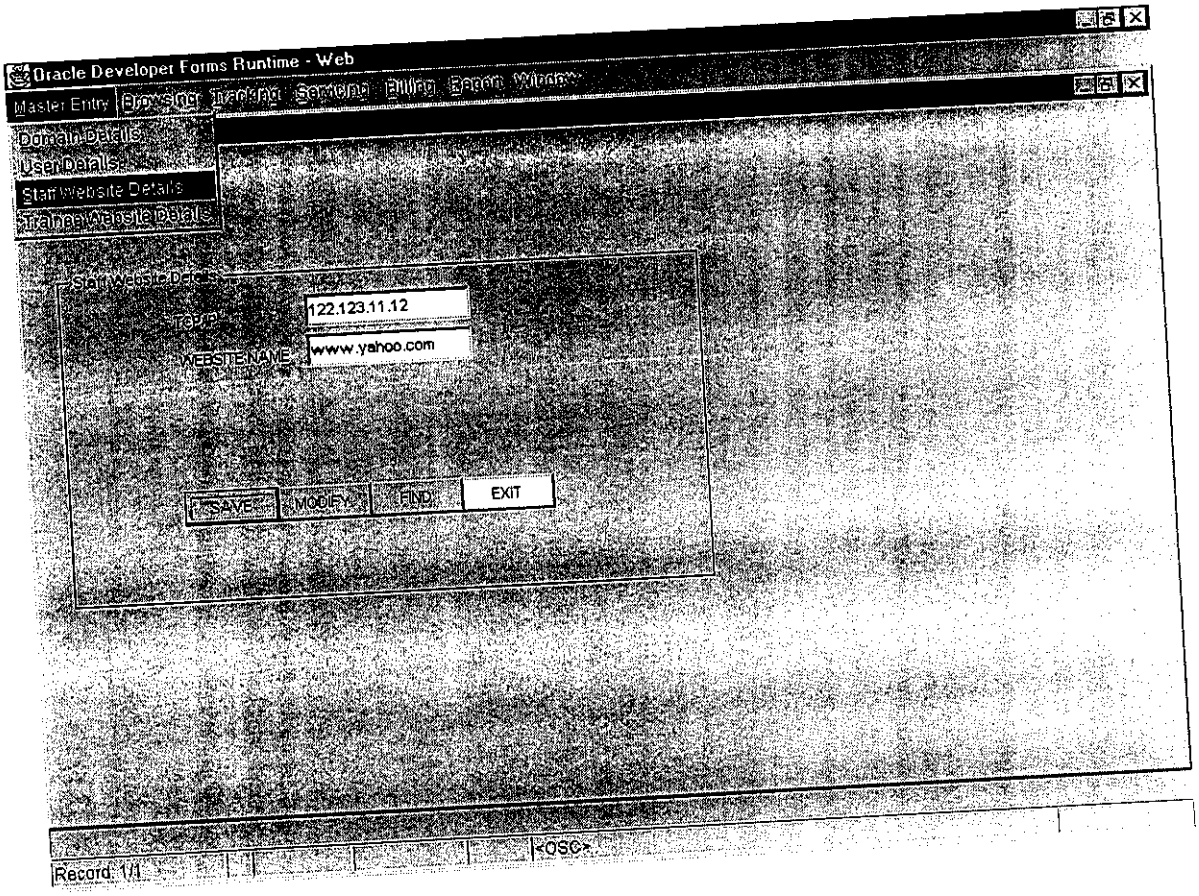
Name	Field Description	Type	Key	Size	Null/ NN
Usercode	User Code	Varchar2	Foreign Key	10	NN
UserMessage	Message	Timestamp		6	Null
Userreadstatus	Readstatus	Timestamp		6	Null
Chatdate	Chat Date	Timestamp		6	Null

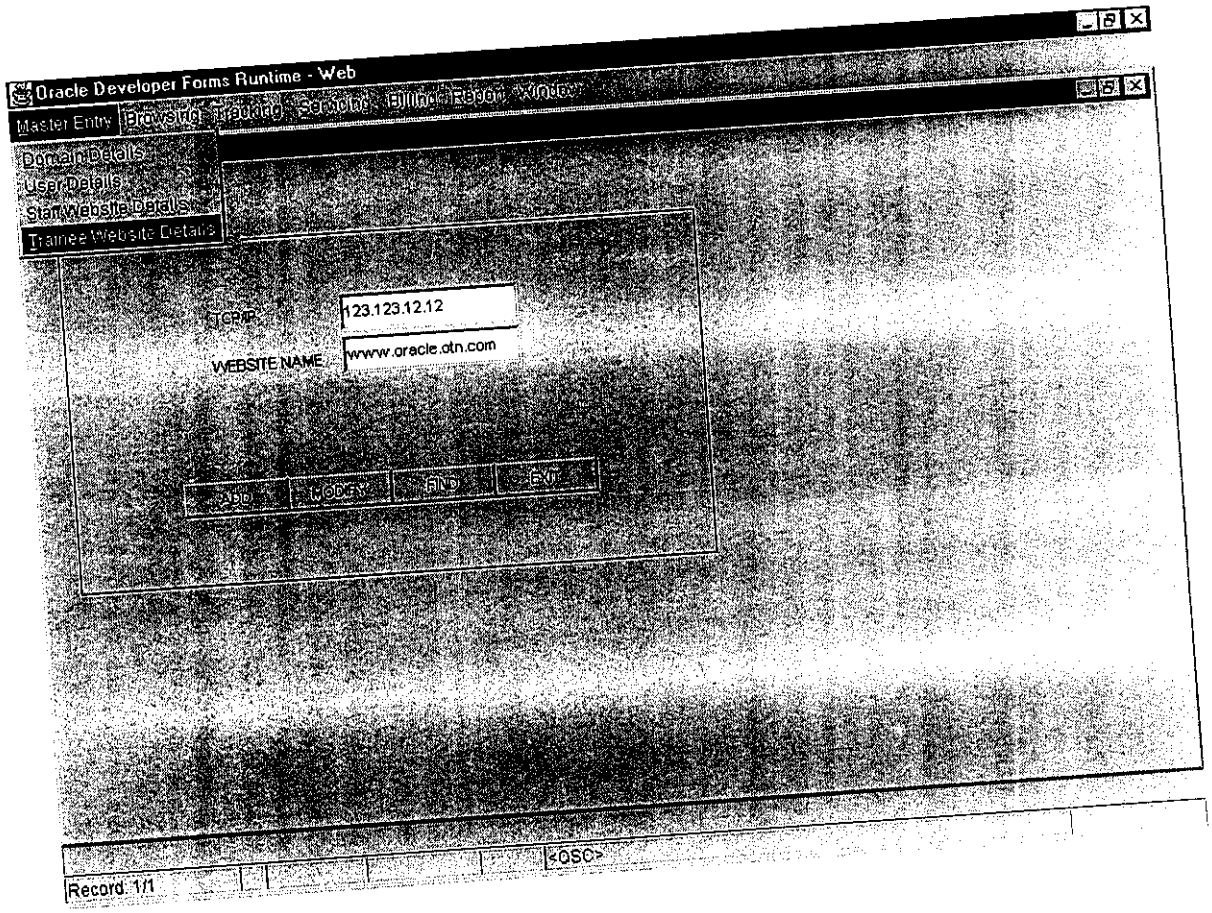
SCREEN DESIGN

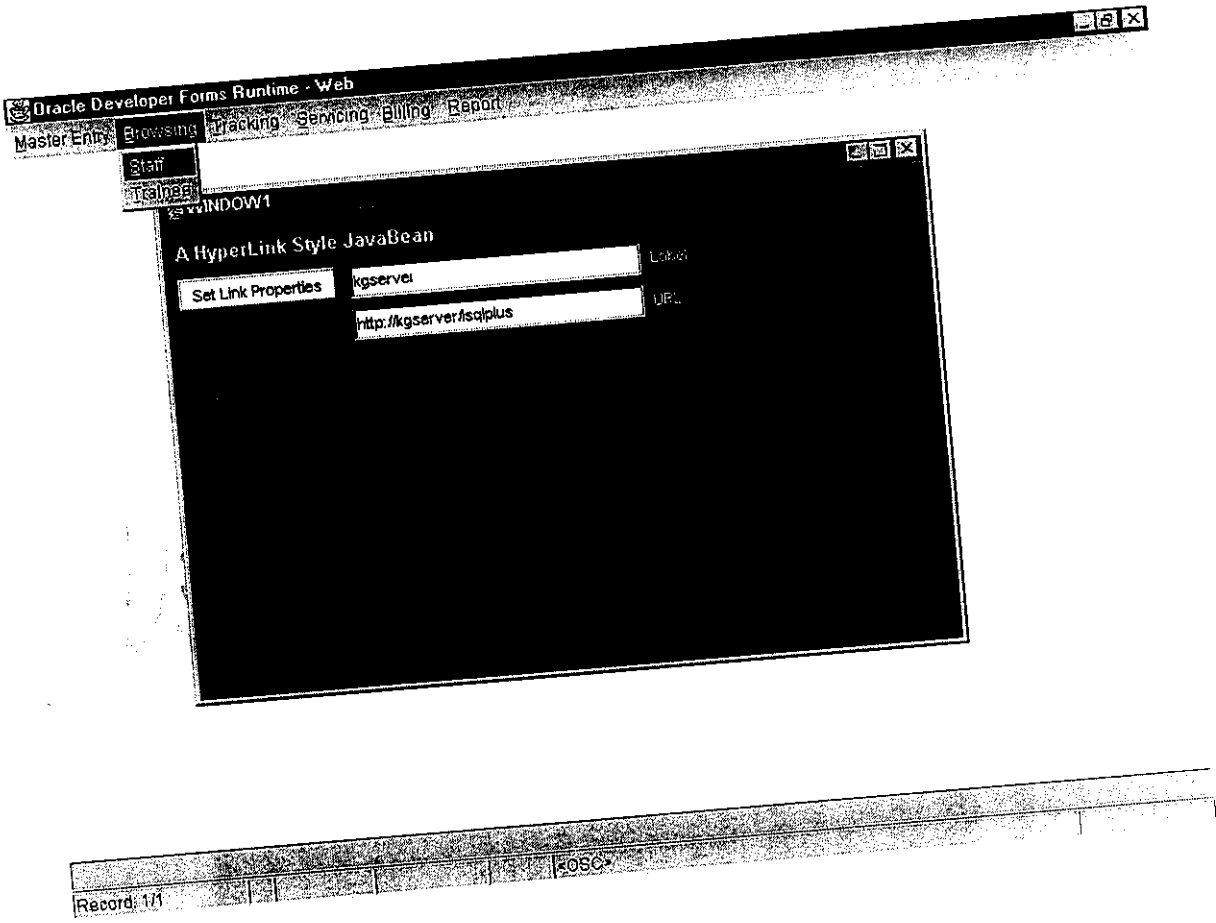


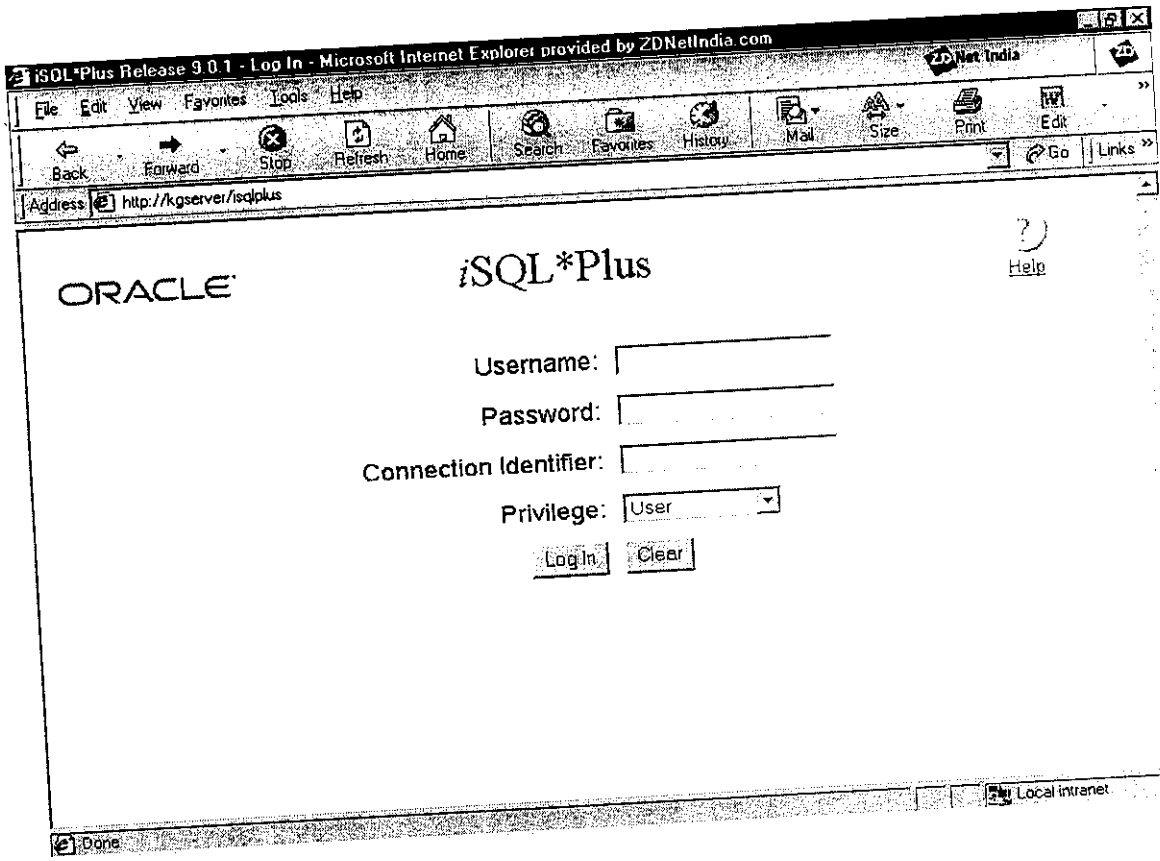

Oracle Developer Forms Runtime - Web
Master Entry
Domain Details
User Details
Staff Website Details
Trainee Website Details
Domain Detail
DOMAIN NO
Kgor12
DOMAIN NAME
kgoracle
Record: 1/1
<OSC>

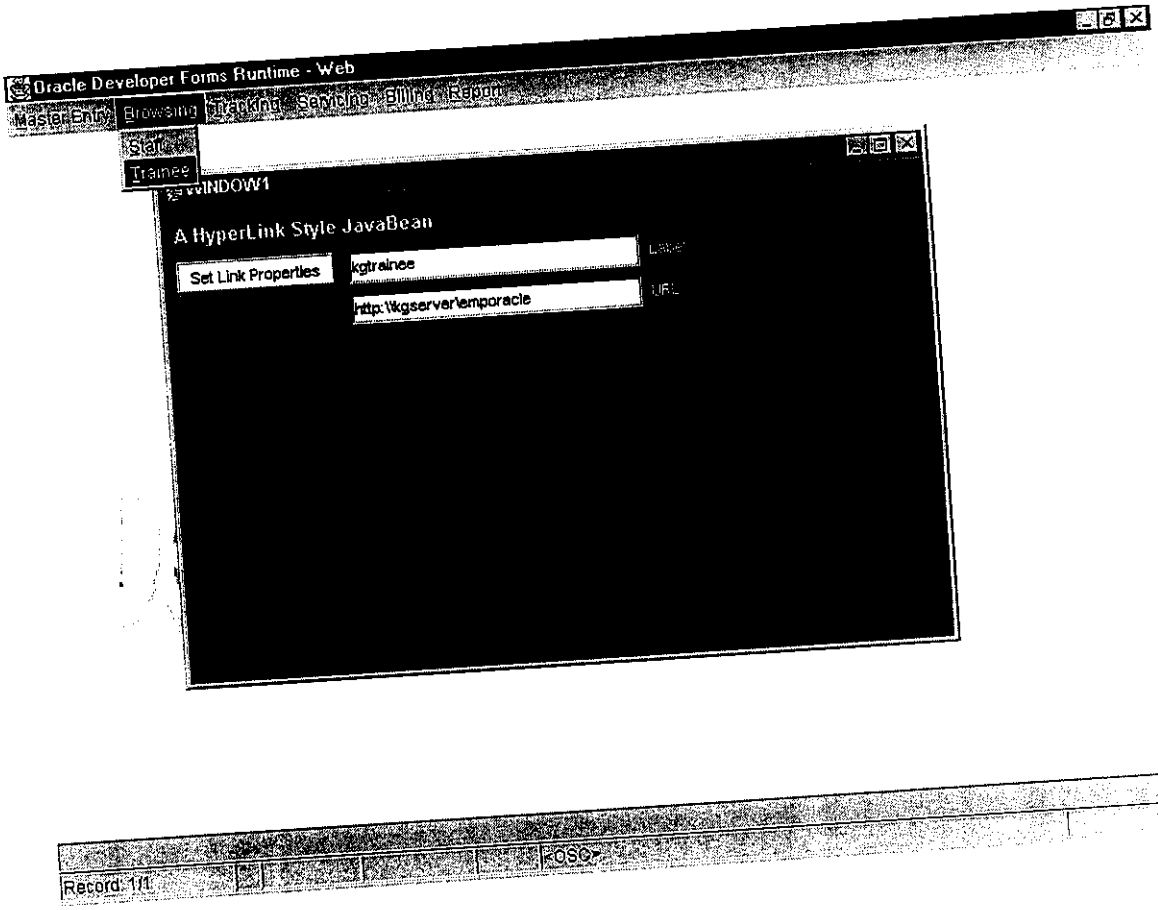

Oracle Developer Forms Runtime - Web
Master Entry
Bangalore Details
User Details
Staff Website Details
Trainee Website Details
USER ID
123
NAME
Jack
DESIGNATION
CEO
DOMAIN NO
KGADM
PASSWORD
*****
HOURS
10
ASSIGNED DATE
11-sep-02
SAVE
FIND
DELETE
EXIT

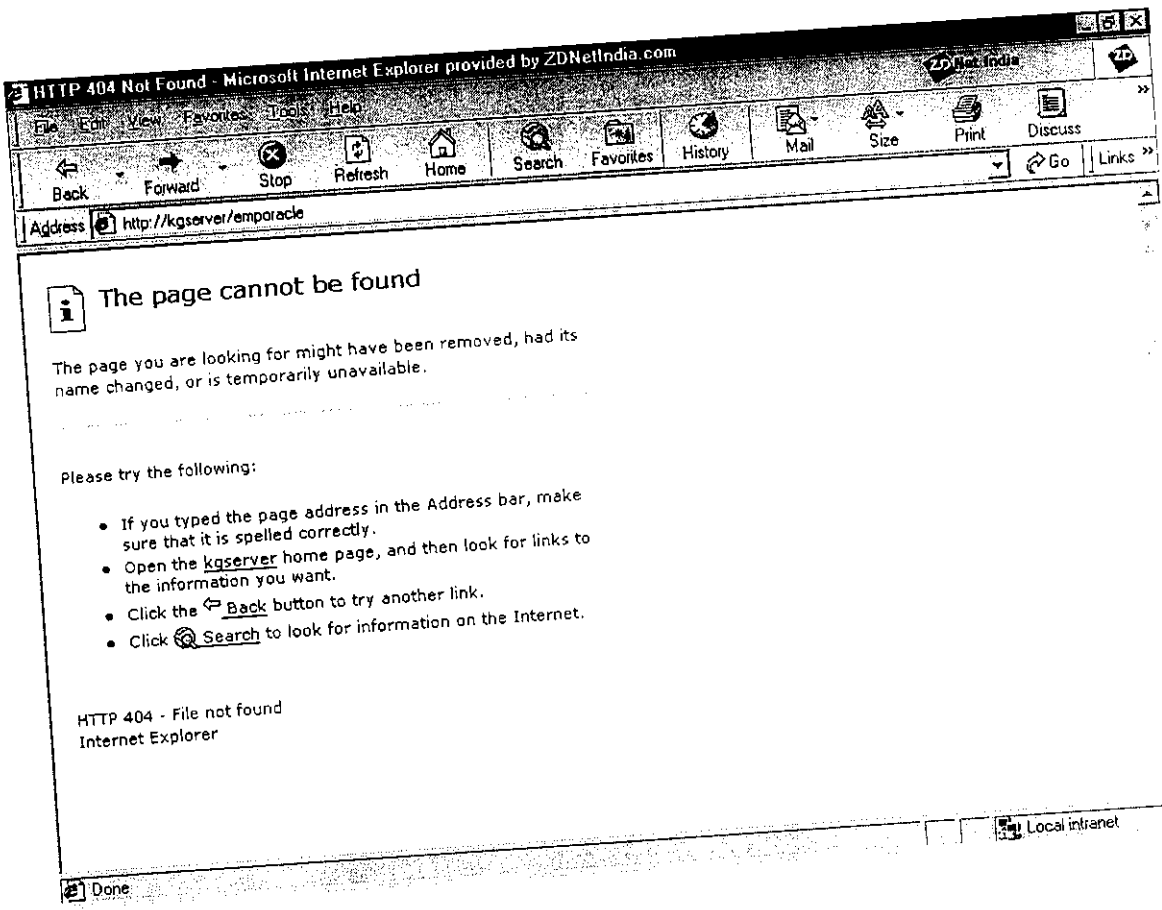

Oracle Developer Forms Runtime - Web
Master Entry
Browsing
Tracking
Services
Billing
Report
Window
Domain Details
User Details
Staff Website Details
Trainee Website Details
Staff Website Details
IP:
122.123.11.12
WEBSITE NAME:
www.yahoo.com
SAVE
MODIFY
FIND
EXIT
Record: 1/1
<OSC>

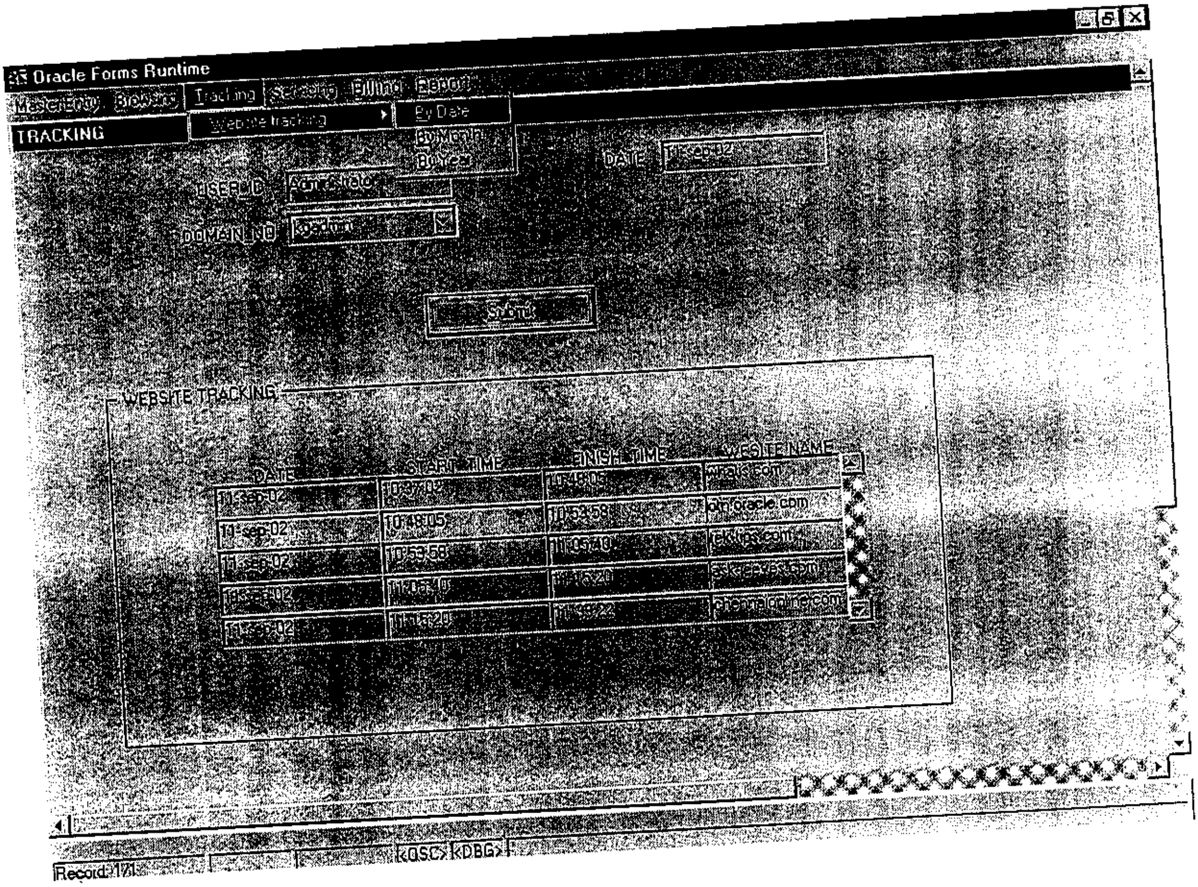

Oracle Developer Forms Runtime - Web
Master Entry
Browsing
Trending
Services
Billing
Report
Window
Domain Details
User Details
Staff Website Details
Trainee Website Details
TCP/IP
123.123.12.12
WEBSITE NAME
www.oracle.otn.com
ADD
MODIFY
FIND
EXIT
<OSC>
Record 1/1


Oracle Developer Forms Runtime - Web
Master Entry
Browsing
Tracking
Servicing
Billing
Report
Staff
Trainees
WINDOW1
A HyperLink Style JavaBean
Set Link Properties
kgserver
http://kgserver/isqlplus
Record: 1/1
<OSC>


iSQL*Plus Release 9.0.1 - Log In - Microsoft Internet Explorer provided by ZDNetIndia.com
File Edit View Favorites Tools Help
Back Forward Stop Refresh Home Search Favorites History Mail Size Print Edit Go Links
Address http://kgserver/isqlplus
ORACLE
iSQL*Plus
Help
Username:
Password:
Connection Identifier:
Privilege: User
Log In Clear
Done
Local intranet


Oracle Developer Forms Runtime - Web
Master Entry
Browsing
Tracking
Servicing
Billing
Report
Start
Trainee
WINDOW1
A HyperLink Style JavaBean
Set Link Properties
kgtrainee
http:\\kgserver\emporacle
Record: 1/1
<OSC>


HTTP 404 Not Found - Microsoft Internet Explorer provided by ZDNetIndia.com
File Edit View Favorites Tools Help
Back Forward Stop Refresh Home Search Favorites History Mail Size Print Discuss
Go Links
Address http://kgserver/emporacle
The page cannot be found
The page you are looking for might have been removed, had its name changed, or is temporarily unavailable.
Please try the following:
If you typed the page address in the Address bar, make sure that it is spelled correctly.
Open the kgserver home page, and then look for links to the information you want.
Click the Back button to try another link.
Click Search to look for information on the Internet.
HTTP 404 - File not found
Internet Explorer
Local intranet
Done


Oracle Forms Runtime
Tracking
Website tracking
By Date
By Month
By Year
TRACKING
DATE
USER ID
DOMAIN_NO
Submit
WEBSITE TRACKING
DATE
START_TIME
FINISH_TIME
WEBSITE NAME
11-sep-02
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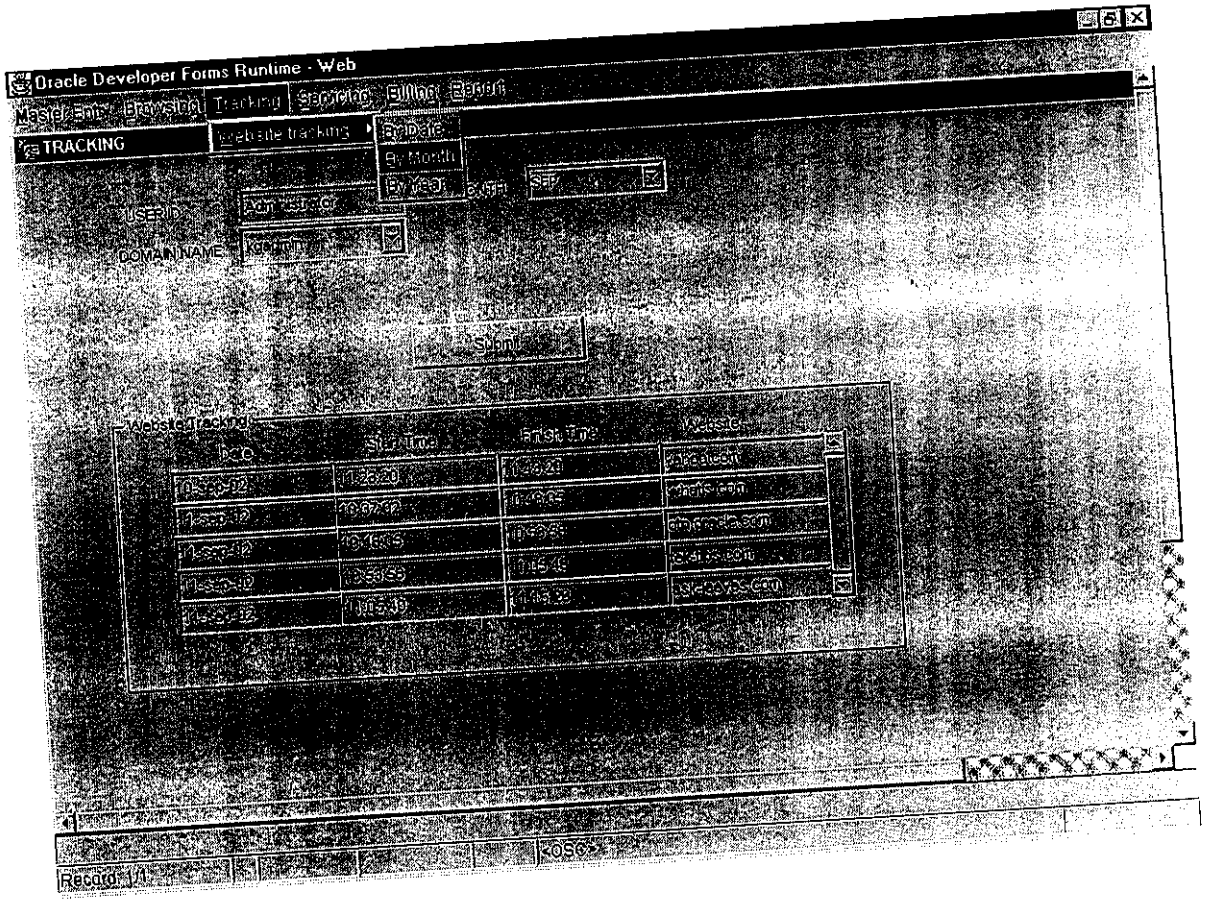
10:53:58
otn.oracle.com
tektips.com
11:05:40
<OSC> <DBG>
Record: 1/1


Oracle Developer Forms Runtime - Web
Master Entry
Tracking
Reporting
Billing
Report
TRACKING
Generate tracking
By Date
By Month
By Year
USER ID
DOMAIN NAME
Submit
Website Tracking
Site
Start Time
Finish Time
Website
Record: 1/1
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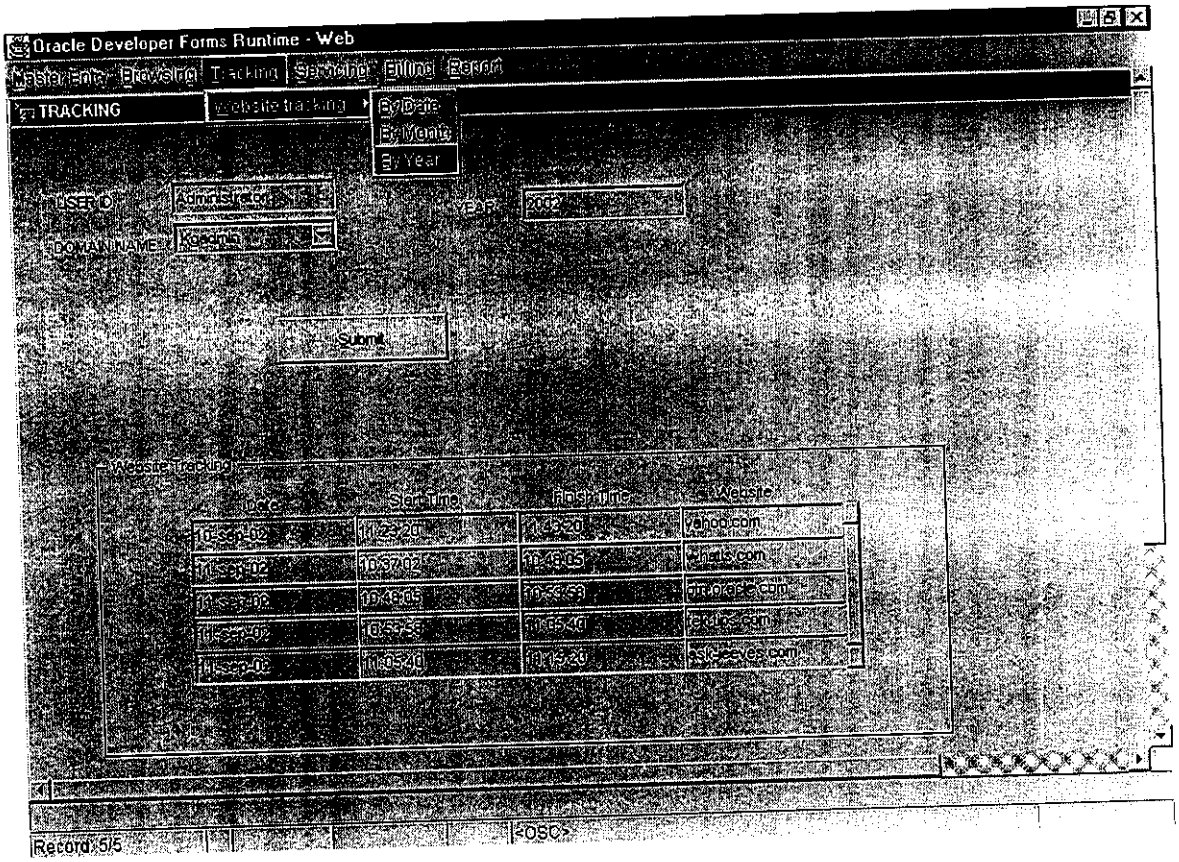
Oracle Developer Forms Runtime - Web
Master Entry
Browsing
Tracking
Servicing
Billing
Report
TRACKING
Website tracking
By Date
By Month
By Year
USER ID
DOMAIN NAME
YEAR
2002
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Finish Time
Website
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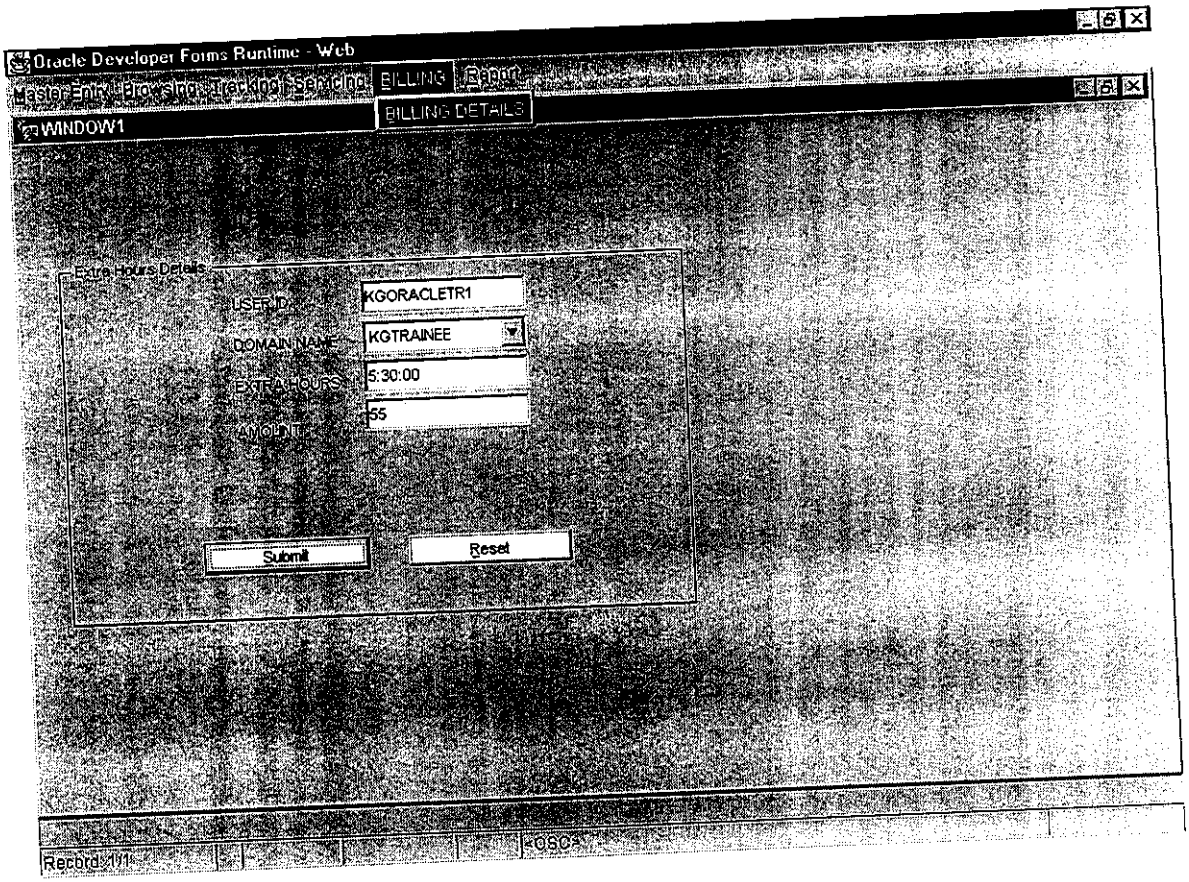
Record 5/5
<OSC>


Oracle Developer Forms Runtime - Web
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Browsing
Tracking
Searching
BILLING
Report
WINDOW1
BILLING DETAILS
Extra Hours Details
USERID
KGORACLETR1
DOMAIN NAME
KGTRAINEE
EXTRA HOURS
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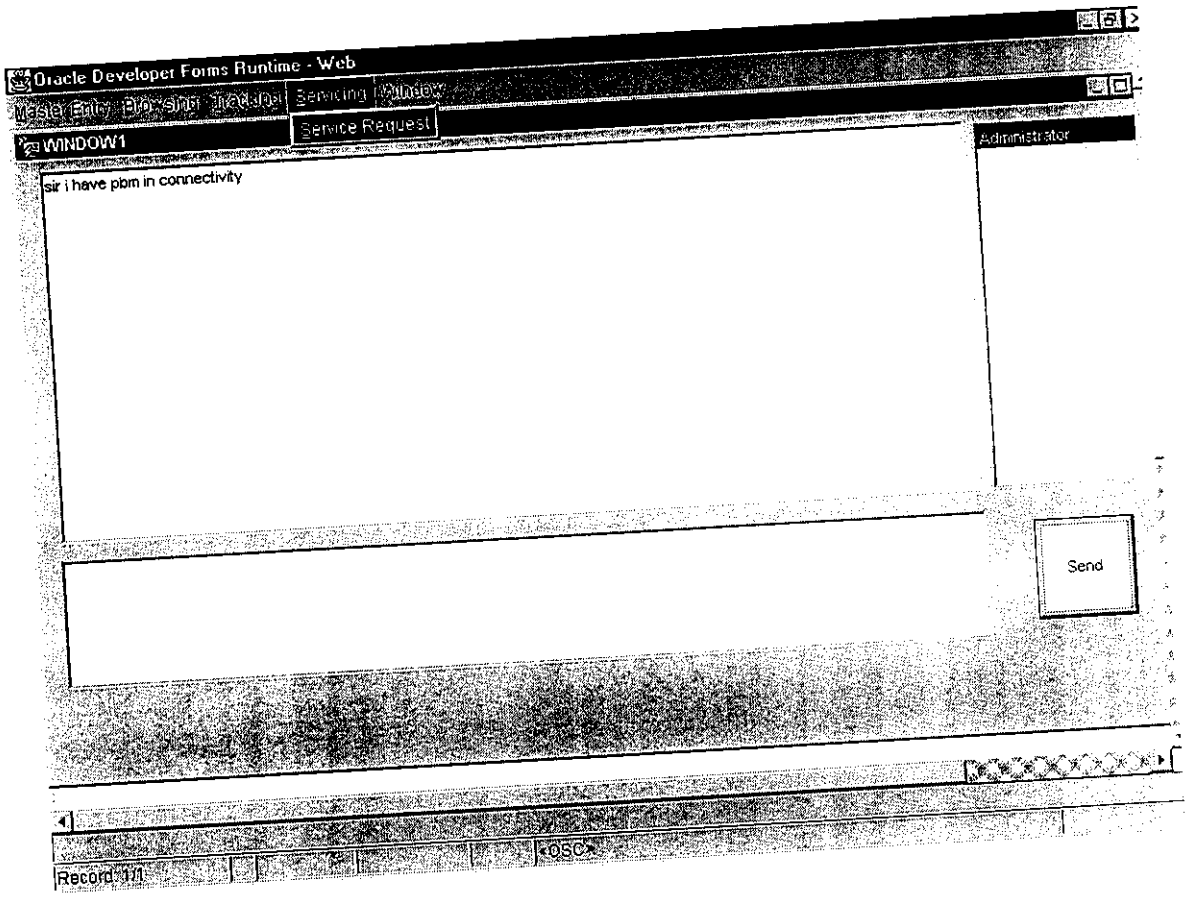
AMOUNT
55
Submit
Reset
Record: 1/1
<OSC>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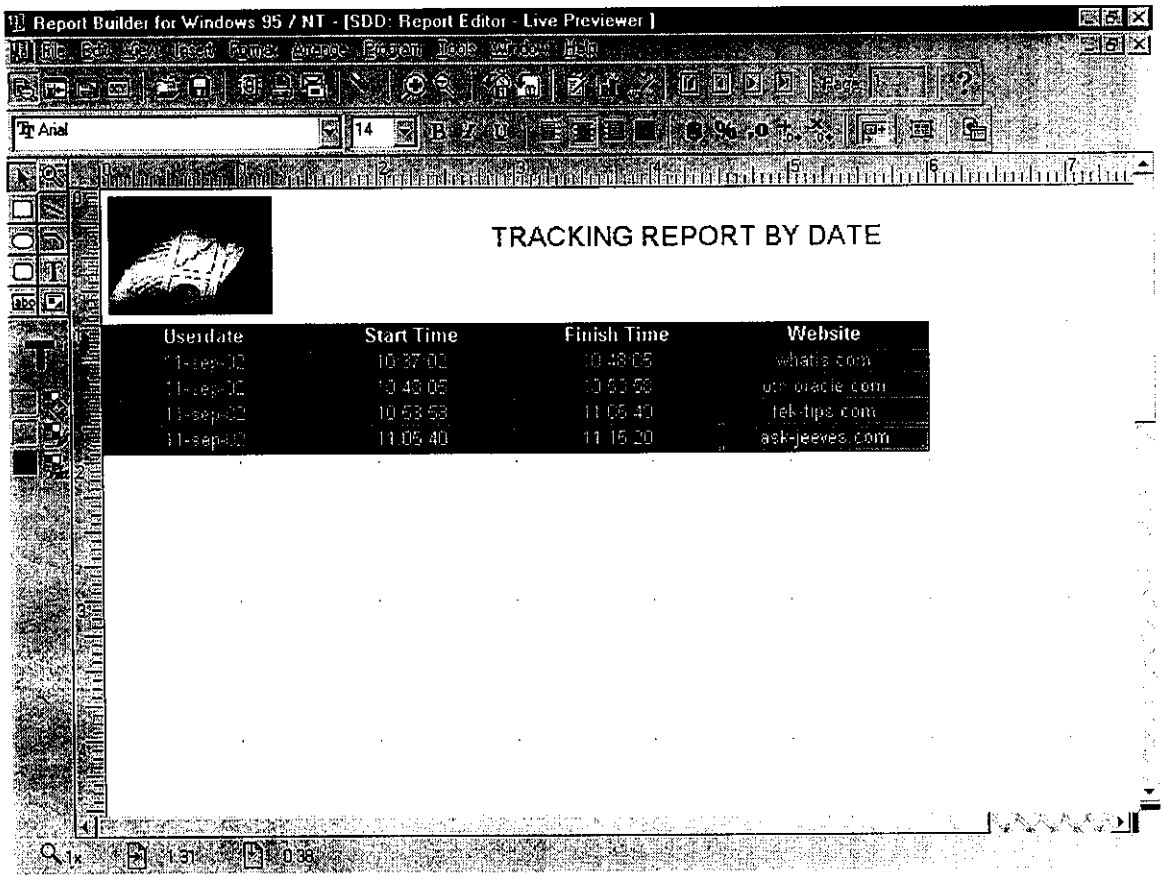
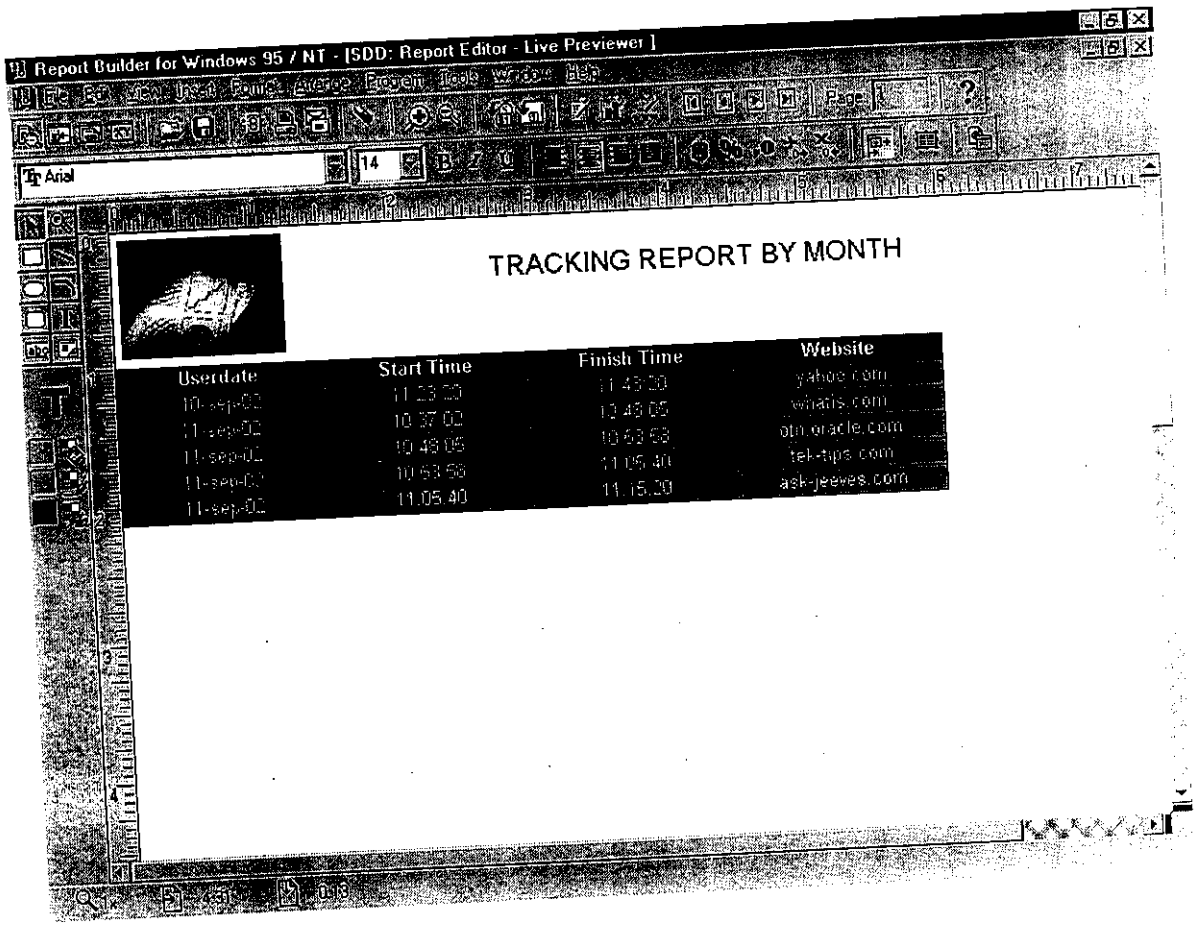
WINDOW1
Administrator
sir i have pbm in connectivity
Send
Record 1/1
OSC


Report Builder for Windows 95 / NT - [SDD: Report Editor - Live Previewer]
Arial
14
TRACKING REPORT BY DATE
Userdate
Start Time
Finish Time
Website
11-sep-02
10 37 03
10 48 05
whatis.com
11-sep-02
10 48 05
10 53 53
www.oracle.com
11-sep-02
10 53 53
11 05 40
tek-tips.com
11-sep-02
11 05 40
11 16 20
ask-jeeves.com


Report Builder for Windows 95 / NT - [SDD: Report Editor - Live Previewer]
Arial
14
TRACKING REPORT BY MONTH
Userdate
Start Time
Finish Time
Website
10-sep-02
11.33.20
11.43.20
yahoo.com
11-sep-02
10.37.02
10.48.05
whatis.com
11-sep-02
10.48.05
10.53.58
otn.oracle.com
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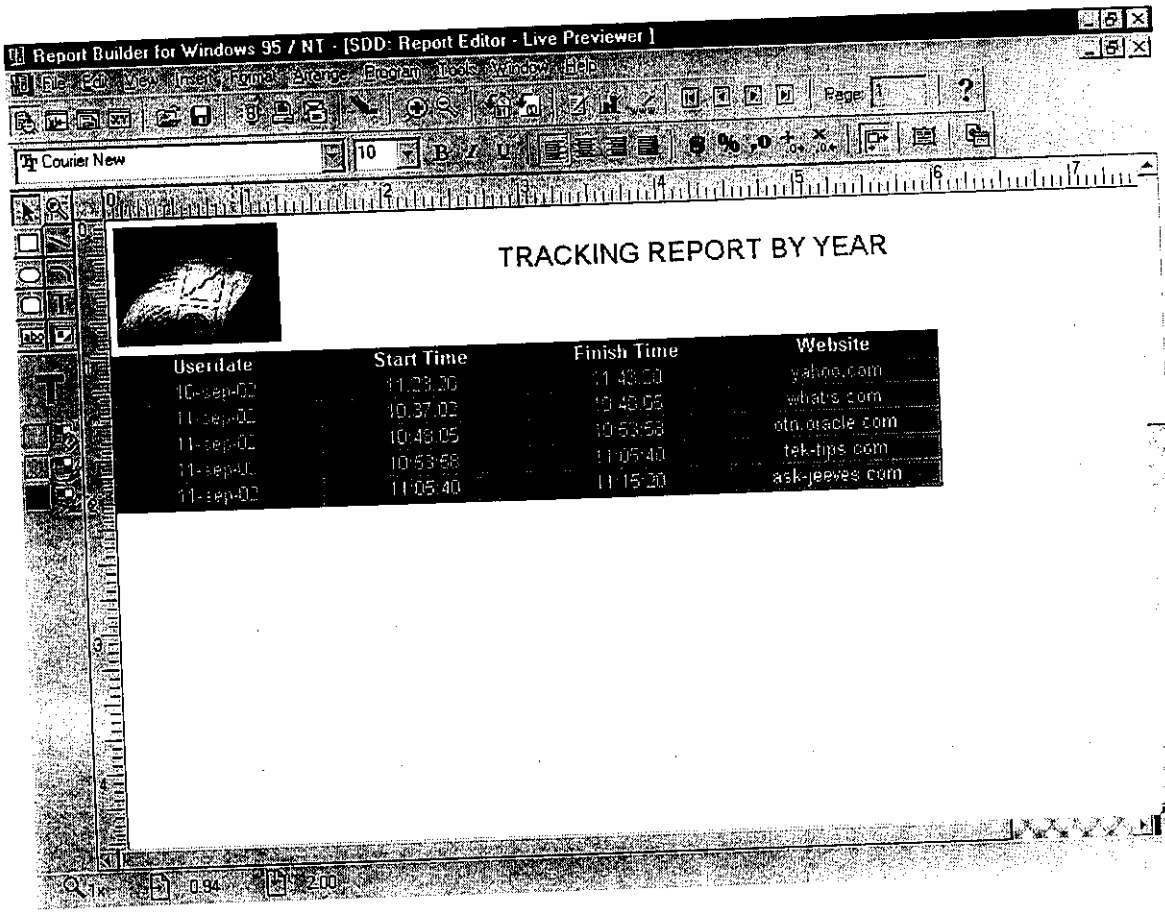
tek-tips.com
11-sep-02
11.05.40
11.15.20
ask-jeeves.com


Report Builder for Windows 95 / NT - [SDD: Report Editor - Live Previewer]
File Edit View Insert Format Arrange Program Tools Window Help
Page 1
Courier New
10
TRACKING REPORT BY YEAR
Userdate
Start Time
Finish Time
Website
10-sep-02
11:23:30
11:43:50
yahoo.com
10:37:02
10:48:05
whatis.com
10:46:05
10:53:58
otn.oracle.com
10:53:58
11:05:40
tek-tips.com
11:05:40
11:15:30
ask-jeeves.com
0.94
2.00