**A Mini Project**

**On**

**Online Laptop Support**

**Master of Computer Applications (MCA)**

Submitted By

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**(2017 – 2020)**

**CERTIFICATE**

This is to certify that the Mini Project entitled **Online Laptop Support** is the bonafide work done by **P. M. S. Bhargav Kumar** Regd No. **121722501026** during 2017-2020 in partial fulfillment of the requirement of the 3rd Semester Mini Project of Master of Computer Applications, in GITAM (Deemed To Be University), Visakhapatnam, under my supervision and guidance.

Signature Signature (Internal Guide) (HOD)

**DECLARATION**

           I, hereby declare that the mini project report entitled "**Online Laptop Support**”submitted by me, in partial fulfillment of the requirement of the 3rd semester Mini Project of MCA course in Computer Science Department, GIS, to GITAM DEEMED TO BE UNIVERSITY,Vishakapatnam is a bonafide mini project work carried out by me under the guidance of **Mr.S.Dilip Kumar Raju**

Name of the student P.M.S.Bhargav Kumar

**ACKNOWLEDGEMENT**

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**Name of the student P.M.S.BhargavKumar**

**Abstract**

When we are using a laptop, we may come across various technical problems while using the product. Generally customers don’t know the name of the sites of all the organizations to post their problem and there is no surety of quick response from the vendors. Few vendors may not be interested in responding to the customer’s problems.

The purpose of the project “Online Laptop Support” is to provide support for the customers who are facing problems with various Laptops. Now customer can post their problems related to laptops on this website and can view the suitable solution to the problem on the website posted by experts. This application will have different products and each product will managed by a Technical Manager. Every Manager will have different number of technicians. Below is the process to achieve this.

Customer will register and logs on to the system and he can post a bug and he will receive a bug id. When manager logs on to the system view the bugs posted by the customers. The manager can then assign the bug to the technical person. When technical person logon to the system he can view the bugs assigned by the manager. Then he provides a suitable solution for the specific bug. The customer can view the solution to the bug posted by him. There after the customer can send a feedback for his solution.

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**1. INTRODUCTION**

**1.1 Introduction to project:**

Today your laptop has become a device that you cannot do away with. Laptop plays an important role in today’s life for people including businessmen, professionals, retired personnel, home makers, and students. All require laptops and notebooks for e-mailing, project preparation, searching for information and other official chores.

The major advantage of a laptop is the mobility of the device that provides you ease and convenience of being available online at any place and any time. E-mailing is another big advantage of carrying a notebook. Internet browsing and searching for information becomes an enjoyable task with a laptop but things may not remain so in case your system begins to malfunction. resolve offers support for laptop to help you out of such technical stalemate by fixing your laptop online with just a single phone call.

We have a huge pool of tech experts readily available, 24x7 with their premium tech support for solving the issues that you may face with your laptop. You can call us anytime for online tech support, if your laptop stops working, running slow or giving errors of varied nature. We can provide you with the best online help, if issues like blue screen error, virus infection, corrupt windows registry, corrupt browser, Internet connectivity problems, software, driver incompatibility and problems with monitor, keyboard and other peripherals crop up.

We will help you in keeping your system up-to-date and equipped with the latest operating system and MS Office suite including Internet browsers. So call us, if your laptop is still running on outdated OS and software. We will find out the most appropriate drivers for your system and prevent any software conflict that may lead to startup and shutdown issues. Our experts are available round the clock and can offer quick online support for all reputed laptop and notebook brands including Lenovo, Acer, HP, Sony, Samsung, Toshiba and more.

**1.2 Purpose of the system**

The purpose of “ONLINE LAPTOP SUPPORT” to provide solutions for the bugs posted by customers within short period of time. The manager should be able to organize the entire bug efficiently and assign the bug to the concerned technical person. The system should provide the solution to the customer in possible proposed date.

**1.3 Existing System:**

* Customers may come across various technical problems while using the product.
* They may or may not be aware of computers and how to solve their problem.
* In such case, the users may not get a proper solution immediately and sometimes it would also take a very long time to get a solution for their problem.
* For getting proper solutions, the users have to contact the concerned organization that has provided the software.

**1.4 Drawbacks of Existing system:**

* There is a communication gap between the customer and service centers.
* People generally don’t know the sites of all the organizations to post their bugs.
* There is no surety of quick response from the organization.
* Few organizations may not be interested in responding to the customers.

**1.5 Proposed System:**

* The purpose of the project “Online Laptop Support” is to provide support for the customers who are facing problems with various Laptops.
* So in order to overcome all these limitations and to meet all their requirements, the current processes are replaced with this application.
* Customers can use this system to convey the problem to the concerned service center and get his problem solved.
* This system provides easy to use interface through which the customer can get technical support.

**1.6 scope of the project:**

* Off line management for contacting the customer needs to be automated because details like who is going and what he picks up are big night mare.
* Damage policies needs to be implemented.
* Payment gateway needs to be implemented.
* Reviews needs to be displayed for promotion of the application.

**2. SYSTEM ANALYSIS**

**2.1 Study of the system**

**SYSTEM MODEL**

A system model is the conceptual model that describes and represents a system. A system comprises multiple views such as planning, requirement (analysis), design, implementation, deployment, structure, behavior, input data and output data views. A system model is required to describe and represent all these multiple views.

The system model describes and represents the multiple views possibly using two different approaches. The first one is non-architectural approach and the second one is the architectural approach.

The non-architectural approach respectively picks a model for each view. For example, structured system analysis and data design model (SSADM), picking the structured chart (SC) for structure description and the data flow diagram (DFD) for behavioral description. Is characterized into the non-architectural approach.

**SYSTEM DEVELOPMENT LIFE CYCLE MODEL (SDLC MODEL)**

This is also called Classic life cycle model (or) linear sequential model (or) waterfall model. This model has the following activities:

1. System/Information Engineering and Modeling
2. Software Requirement Analysis
3. System Analysis and Design
4. Code Generation
5. Testing
6. Maintenance

**1) System/ Information Engineering and Modeling:**

As software development is a large process, so work begins by establishing requirements for all system elements and then allocating some subset of these requirements to software. The view of this system is necessary when software must interface with other elements such as hardware, people and other resources. System is the very essential requirement for the existence of software in any entity. In some cases, for maximum output, the system should be reengineered and spruced up. Once the ideal system is designed according to requirement, the development team studies the software requirements for the system.

**2) Software Requirement Analysis:**

Software Requirement Analysis is also known as the feasibility study. In this requirement analysis phase, the development visits the customer and studies their system requirement. They examine the need for possible software automation in the given software system. After feasibility study, the development team provides a document the different specific recommendations for the candidate system. It also consists of personal assignment, cost of the system, project schedules and target dates.

The requirement analysis and information gathering process is intensified and focused especially on the software. To understand of what type of the program to be built, the system analyst must study the information domain for the software as well as understand requirement function, behavior, performance and interfacing. The main purpose the requirement analysis phase is to find the need and to define the problem that needs to be solved.

**3) System Analysis and Design:**

In System Analysis and Design phase, the whole software development process, the overall software structure and its outlay are defined. In case of the client/server processing

technology, the number of tiers required for the package architecture, the database design, the data structure design etc. are all defined in this phase. After designing part, a software development model is created. Analysis and Design are very important in the whole development cycle process. Any fault in the design phase could be very expensive to solve in the software development process. In this phase, the logical system of the product is developed.

**4) Code Generation:**

In Code Generation phase, the design must be decoded into a machine-readable form. If the design of the software product is done in detailed manner, code generation can be achieved without much complication. For generation of code, programming tools like Compilers, Interpreters and Debuggers are used. For coding purpose different high-level programming languages like C, C++, Pascal and Java are used. The right programming language is chosen according to the type of application.

**5) Testing:**

After code generation phase, the software program testing begins. Different testing methods are available to detect the bugs that were committed during the previous phase. A number of testing tools and methods are available to detect the bugs that were committed during the previous phase. A number of testing tools and methods are available for testing purpose.

**6) Maintenance:**

Software will definitely will go through change once when it is delivered to the customer. There are large number of reasons for the change. Change could happen due to some unpredictable input values into the system. In addition to this the changes in the system directly have an effect on the software operations. The software should be implemented to changes that could happen during the post development period.

**2.2 modules of the system**

* Administration Module
* Manager Module
* Technical Person Module
* Customer Module

**2.2.1 Administrator Module:**

The system should accept the following as input from Administration of organization for successful login.

* Valid username
* Password

After successful login, the administrator is provided with the following options, which require some data entry

* To add a new Manager.
* To add a new product.
* To add a new Technical person under Manager.
* To view Reports.

The administrator has to register the details of products, managers and technical persons. For every product there will be a concerned manager who will take care of posting the problem to the concerned technical person.

**Manager Registration:**

This takes the following as Input

* Manager Username
* Password
* Manager Name
* Address
* Phone
* Email

After submitting all the details, a unique ID is generated for identify that particular manager.

**Technical Person Registration:**

This takes the following as Input

* Technical person Username
* Password
* Technical person Name
* Address
* Phone
* Email
* Manager-id
* Status

After submitting all the details, a unique ID is generated for identify that particular technical person.

**Product Registration:**

This takes the following as Input

* Product name
* Vendor name
* Manager-id

After submitting all the details, ID will be generated which is given to the products.

**2.2.2 Customer Module:**

**Customer Registration**

This takes the following as Input

* Customer Username
* Password
* customer Name
* Address
* Phone
* Email

**Customer Login**

This module takes the following details as Input

* Customer name
* Password

It validates all the above fields and if the input given is valid then the customer is allowed to enter to its main page.

**Posting of Bugs**

This module takes the following from customer as Input.

* Customer id
* Product id
* Summary
* Details
* OS Using
* Software list
* Post date
* Assigned

After submitting all the details, ID will be generated which is given to the bugs.

**2.2.3 Manager Module:**

**Manager Login**

This module takes the following details as Input

* Manager username
* Password

It validates all the above fields and if the input given is valid then the manager is allowed to enter to his home page.

**Assigning Bugs to technical person**

This module takes the following as input.

* Bug ID
* Technical person ID
* Assignment date
* Expected date
* Solved

After submitting all the details, a unique ID will be generated which is given to the assignments.

**2.2.4 Technical person Module:**

**Technical person Login**

This module takes the details as Input

* Username
* password

It system validates all the above fields and if the input given is valid ones then the manager are allowed to enter to its home page.

**Writing solutions**

This module takes the following input.

* Bug ID
* Technical person ID
* Solution description
* Date
* Priority

After submitting all the details, ID will be generated which is given to the solutions.

**2.3 Subsystem Services**

**2.3.1 Customers:**

* Customers Registration
* Customer Login
* Posting their bugs
* Viewing Solutions
* Writing Comments

**Customer Registration**

This module is to provide all the details of the customers so that, he can get registered with this web site. After registering, the customer will be getting a unique id. Using that unique id the customer can logon to this web site.

**Customer Login**

This module is that the customers with their login ID and password can now logon to the Systems and use the service.

**Posting Bugs**

This module is to provide all the details of the occurred bugs by the customer and post the complete details to the manager.

**Viewing Bug solutions**

This module is to provide an interface to the customer to view the solutions of his posted bugs.

**Writing comments**

This module is to provide an interface to the customer to comment on the given solution provided by the technical person.

**2.3.2 Managers:**

* Manager Registration
* Manager Login
* Viewing Posted bugs
* Assigning bugs to technical persons
* Viewing comments
* Viewing Technical Persons status.

**Manager Registration**

This module is to provide all the details of the managers so that by providing all the details, the Administrator can register the manager and after registering each manager provided with a unique ID.

**Manager Login**

This module is that the managers with their login ID and password can now logon to the System and use the services provided to him.

**Viewing bugs**

This module is to provide an interface to the manager to view the bugs along with the details posted by the customers.

**Assigning bugs to technical person**

This module is to provide an interface to the manager to assign the bugs posted by the customers to the concerned technical person who are working under him. Manager should also confirm that the technical person should be free, before assigning to him.

**Viewing comments**

This module is to provide an interface to the manager to View the comments posted by the customers on the specific solution. This will be useful for the manager to know whether the bug was rectified by the given solution.

**Viewing technical person status**

This module is to provide an interface to the manager to View the present status (i.e. FREE or BUSY) of all the technical persons who are working under him.

**2.3.3 Technical persons:**

* Technical person Registration
* Technical person Login
* Viewing bugs
* Writing solutions for the bugs
* Updating bug status

**Technical person Registration**

This module is to provide all the details of the technical person so that by providing all the details, the Administrator can register the technical person and after registering, each technical person is provided with unique ID.

**Technical person Login**

This module is that the technical person with his login ID and password can now logon to the System and use the services provided to him.

**Viewing bugs**

This module is to provide an interface to the technical person to view the bugs along with the details assigned by his manager.

**Writing solutions for the bugs**

This module is to provide an interface to the technical person to write the solution for the specific bug along with the priority.

**Updating bug status**

This module is to provide an interface to the technical person to update the present status of the bug so that the customer will be aware of the progress done by the technical person.

**3. Requirement Analysis**

**3.1 System requirement Analysis (SRS)**

**Software Environment**

Operating System - Microsoft Windows 2000/XP

Front End Tool - Servlets and Java Server Pages

Scripting language - HTML, JavaScript

Application Server - Apache Tomcat Web Server

**Hardware Environment**

RAM - 64 MB

Hard Disk - 20 GB

Processor - Intel Pentium 500MHz

Floppy Disk - 1.44 MB

Monitor - Color Monitor (256 colors)

**3.2 Overview of the Front end**

**HYPER-TEXT MARKUP LANGUAGE**

**Introduction:**

Hyper Text Markup Languageis a structural markup language used to create and format a web document. A markup language such as HTML is simply a collection of codes, called Elements that are used to indicate the structure and format of a document. A user agent, usually a web browser that renders the document, interprets the meaning of these codes to figure how to structure or display a document. HTML is not invention but it is an improved version of Standard Generalized Markup Language (SGML).

**HTML in the following four stages:**

**Level-0** included only the basic structural elements and assured that all browsers supported all features.

**Level-1** advanced features included highlighted text and graphics that were supported depending on the browser capability.

**Level –2** introduced the World Wide Web as an interactive medium and the feature of fill out forms on the Internet.

**Level-3** introduced frames, inline, video, sound, etc.

**Importance of HTML:**

HTML can be used to display any type of document on the host computer, which can be geographical at a different location. It is a versatile language and can be used on any platform or desktop.

The appearance of a Web page is important, and HTML provides tags to make the document look attractive. Using graphics, fonts, different sizes, color, etc. can enhance the presentation of the document.

**Functionality of HTML in the project:**

As we know this is purely web-based project. This helps to embed Java Server Pages within the page using some simple tags.

Used to design the forms.

User can communicate easily with server.

**JDBC**

In an effort to set an independent database standard API for Java; Sun Microsystems developed Java Database Connectivity, or JDBC. JDBC offers a generic SQL database access mechanism that provides a consistent interface to a variety of RDBMSs. This consistent interface is achieved through the use of “plug-in” database connectivity modules, or *drivers*. If a database vendor wishes to have JDBC support, he or she must provide the driver for each platform that the database and Java run on.

To gain a wider acceptance of JDBC, Sun based JDBC’s framework on ODBC. ODBC has widespread support on a variety of platforms. Basing JDBC on ODBC will allow vendors to bring JDBC drivers to market much faster than developing a completely new connectivity solution.

JDBC was announced in March of 1996. It was released for a 90 day public review that ended June 8, 1996. Because of user input, the final JDBC v1.0 specification was released soon after.

**JDBC Goals**

Few software packages are designed without goals in mind. JDBC is one that, because of its many goals, drove the development of the API. These goals, in conjunction with early reviewer feedback, have finalized the JDBC class library into a solid framework for building database applications in Java.

The goals that were set for JDBC are important. They will give a programmer some insight as to why certain classes and functionalities behave the way they do. The eight design goals for JDBC are as follows:

**SQL Level API**

The designers felt that their main goal was to define a SQL interface for Java. Although not the lowest database interface level possible, it is at a low enough level for higher-level tools and APIs to be created. Conversely, it is at a high enough level for application programmers to use it confidently. Attaining this goal allows for future tool vendors to “generate” JDBC code and to hide many of JDBC’s complexities from the end user.

**SQL Conformance**

SQL syntax varies from one database vendor to another database vendor. In an effort to support a wide variety of vendors, JDBC will allow any query statement to be passed through it to the underlying database driver. This allows the connectivity module to handle non-standard functionality in a manner that is suitable for its users.

**JDBC must be implemental on top of common database interfaces**The JDBC SQL API must “sit” on top of other common SQL level APIs. This goal allows JDBC to use existing ODBC level drivers by the use of a software interface. This interface would translate JDBC calls to ODBC and vice versa.

**Provide a Java interface that is consistent with the rest of the Java system**

Because of Java’s acceptance in the user community thus far, the designers feel that they should not stray from the current design of the core Java system.

**Keep it simple**

This goal probably appears in all software design goal listings. JDBC is no exception. Sun felt that the design of JDBC should be very simple, allowing for only one method of completing a task per mechanism. Allowing duplicate functionality only serves to confuse the users of the API.

**Use strong, static typing wherever possible**

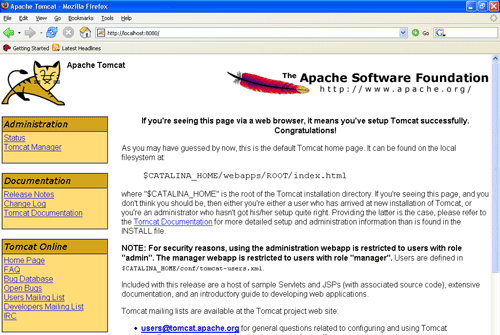
Strong typing allows for more error checking to be done at compile time; also, less error appear at runtime.

**Keep the common cases simple**

Because more often than not, the usual SQL calls used by the programmer are simple SELECT’s, INSERT’s, DELETE’s and UPDATE’s, these queries should be simple to perform with JDBC. However, more complex SQL statements should also be possible.

**Tomcat 6.0 web server**

Tomcat is an open source web server developed by Apache Group. Apache Tomcat is the servlet container that is used in the official Reference Implementation for the Java Servlet and JavaServer Pages technologies. The Java Servlet and JavaServer Pages specifications are developed by Sun under the Java Community Process. Web Servers like Apache Tomcat support only web components while an application server supports web components as well as business components (BEAs Weblogic, is one of the popular application server).To develop a web application with jsp/servlet install any web server like JRun, Tomcat etc to run the application.



**3.3 Overview of the Back end**

**INTRODUCTION TO ORACLE**

A modern Relational Database Management System can perform a wide array of tasks. It acts as a transparent interface between the physical storage and the logical presentation of data .In practice; it provides a set of more or less flexible and sophisticated tools for handling information.

Because it gives you so much control over the Relational DBMS can also serve as the foundation for products that generate applications and extract data. Which of these abilities you considered most important depends upon the job that you need to do. How might be in charge of creating and maintaining a Database. You might be a casual user who primarily works with existing applications to accomplish specific tasks or you might be a system developer who creates such application. A DBMS must also be secure from unauthorized access and provide efficient solutions for failure recovery. The ORACLE server provides efficient solutions for the database features.

**Large Databases And Space Management Control**: Oracle supports the largest of database, potentially hundreds of gigabytes in size. To make efficient use of expensive hardware devices, it allows full control of space usage.

**Many Concurrent Database Users:** Oracle support large number of concurrent users executing a variety of database applications operating on the same data. It minimizes data contention and guarantees data concurrency.

**High Transaction Processing Performance:** Oracle maintains the preceding features with a high degree of overall system performance. Data users do not suffer from slow processing performance.

**High Availability:** At some sites, Oracle works 24 hours per day with no down time to limit the database through put. Normal systems operations such as database backup and partial computer system failures do not interrupt database users.

**Controlled Availability:** Oracle can selectively control the availability of data, at the database level and sub database level. For example, an administrator can disallow, without affecting other applications.

**Manageable Security:** Disaster recovery can be extremely problematic. Oracle has several features that ensure the integrity of your database. If an interruption occurs in processing, a rollback can reset the database a point before a disaster. If a restore is necessary, Oracle has a role forward command for recreating our database to its most recent safe point. Oracle provide users with several functions for securing data, grant and revoke commands limit, access to information down to the row and column levels. Views are valuable feature for limiting access to the primary tables in the database. As you can see, there are many ways to control access to an Oracle database.

**Data Enforced Integrity:** Oracle enforces data integrity. “Business Rules” that dictate the standards for acceptable data. As a result, the costs of coding and managing checks in many database applications are eliminated.

**Client/Server Environment:**To take full advantage of a given computer system or network, Oracle allows processing to be split between the database server and the client application programs. The oracle is processed all responsibilities of shared data management system.

**Distributed Database Systems:** For computing environments that are connected via networks, Oracle combines the data physically located on different computers into one logical database that can be accessed by all network users. Distributed systems have the same degree of user transparency and data consistency as non-distributed systems; yet receive the advantage of local database management.

**Portability:** Oracle software is ported to work under different operating systems and is the same on all the systems. Applications developed for oracle can be ported any operating systems with little or no modifications.

**Compatibility:** Oracle software is compatible with industry standard operating systems. Applications developed for oracle can be used on virtually any systems with little or no modifications.

**Connect ability:** Oracle software allows different types of computers and operating systems to share information across networks.

**Oracle Performs Competitively:** Through years of experience in the mini and mainframe markets, Oracle has been constantly improved to perform competitively on largest database. Because relational database systems have been humped by a reputation for slow access times oracle has to provide its continuity.

**FEATURES OF ORACLE**

1. Oracle provides a good security by providing the capability to make users with their own passwords with different privileges.
2. It includes the provision to define table level or column level constraints
3. (Primary key, Not Null, Unique) and some referential constraints such as foreign key.
4. It is easy to retrieve data needed by giving proper SQL commands.
5. We can bunch the SQL commands and make the bunch executed once by means of PL/SQL (procedures).
6. It provides to store our procedures as a library functions by means of Stored Procedures.
7. It includes the facility for corresponding updates by means of triggers.
8. It gives the capability to access record by means of Cursors.
9. It provides a facility to create views and synonyms that hide the original table and also have many more advantages.
10. It can able to store data more than 1 GB by using data types like Long, BLOB, CLOB etc.
11. It has the capability to store the references of files that resides outside the database by means of the data type BFILE.
12. It supports client handler, which is a section of code written specifically to deal with errors.

It supports large database and space management control, concurrent database users; manageable enforces integrity, client/server environment, distributed database systems, portability, compatibility, connectivity.

**4. FEASIBILITY REPORT**

**4.1 Technical Feasibility**

The proposed system needs the data in an efficient manner i.e., it needs protection of data and authorized access to the data. This is done when we use the software, which supports console-oriented methodology and database methodology.

Therefore technical feasibility determines whether the organization has the technology and skills necessary to carry out the project and how this is obtained. The system is technically feasible on the following grounds:

All necessary technology is available those that are required to develop the system.

The existing resource is capable and can hold all the necessary data in an efficient way.

The system is too flexible and can expanded further.

The system can give guarantee of accuracy, ease of use , reliability and data-security.

The system can give instant responses.

**The following are the activities that are undertaken during this study:**

**Development Risks**

Determining whether the system can be designed so that the necessary function and performance are achieved within the constraints uncovered during the analysis.

**Resource Availability**

It specifies whether the hardware and software resources necessary to develop the system are available. Connecting to Oracle is very suitable to accomplish the task. The organization has bought the required hardware and software, these efforts from the organization made the proposed system technically feasible.

**Technology**

Whether the relevant technology progressed to such a state that it could support the system.

So we can conclude that the project is technically feasible.

**4.2 Economical Feasibility**

It determines whether the project goal can be within the resource limits allocated to it. It must determine whether it is worthwhile to process with the project or whether the benefit obtained from the new system is not worth the costs. After conducting the cost benefit analysis, it reveals that the objectives of the proposed system can be achieved within the allocated resources. The proposed system requires no extra man-power. Also the cash investment to implement the proposed system can be easily recovered. So the system is economically feasible.

**4.3 Operational feasibility**

This determines if the proposed system has satisfied user objectives and can be fit into the current system operation. The present system is operationally feasible on the following grounds

The method of processing and presentation are completely accepted to the clients since they can meet all the requirements.The clients have been involved in the palnning and development of the system.

The proposed system will not cause any problem under any circumstances.The proposed system will certainly satisfy the user requirements and will also enhance their capabilities. It can be best fit into current operations. Also the maintainance of the system is very easy and requires minimal persons. Therefore, the system is operationally feasible.

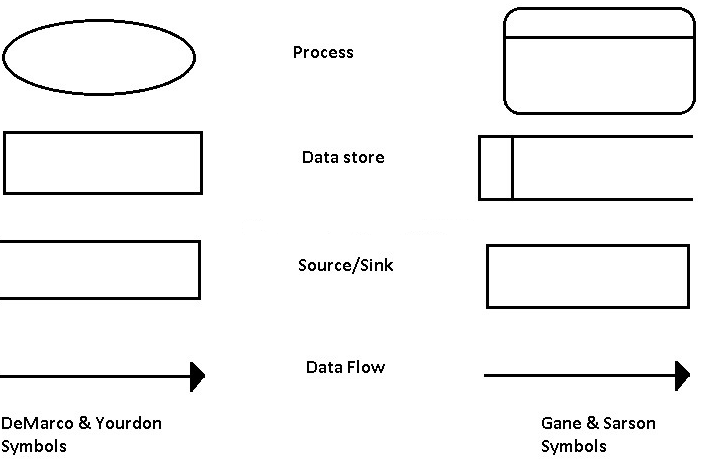
**5. Data Flow Diagrams**

**5.1 Introduction:**A data flow diagram shows the way information flows through a process or system. It includes data inputs and outputs, data stores, and the various sub processes the data moves through. DFDs are built using standardized symbols and notation to describe various entities and their relationships.

Data flow diagrams visually represent systems and processes that would be hard to describe in a chunk of text. You can use these diagrams to map out an existing system and make it better or to plan out a new system for implementation. Visualizing each element makes it easy to identify inefficiencies and produce the best possible system.

Logical data flow diagrams focus on *what* happens in a particular information flow what information is being transmitted, what entities are receiving that info, what general processes occur, etc. The processes described in a logical DFD are business activities—a logical DFD doesn’t delve into the technical aspects of a process or system. Non-technical employees should be able to understand these diagrams.

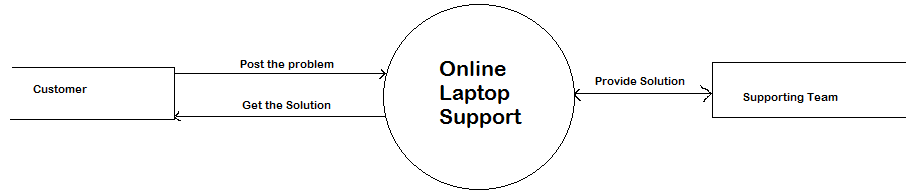
Physical data flow diagrams focus on *how* things happen in an information flow. These diagrams specify the software, hardware, files, and people involved in an information flow. A detailed physical data flow diagram can facilitate the development of the code needed to implement a data system. Below are the symbols of DFD.



**5.2 Level 0 DFD/Context Level Diagram:**

Level 0 DFD also known as context diagrams, are the most basic data flow diagrams. They provide a broad view that is easily digestible but offers little detail. Level 0 data flow diagrams show a single process node and its connections to external entities.

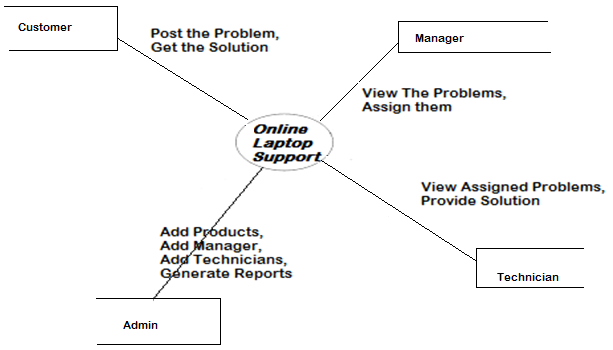
**Level 0 DFD/ Context Level Diagram:**



**5.3 Level 1 DFD:**

These are still a general overview, but they go into more detail than a context diagram. In a level 1 data flow diagram, the single process node from the context diagram is broken down into sub processes. As these processes are added, the diagram will need additional data flows and data stores to link them together.

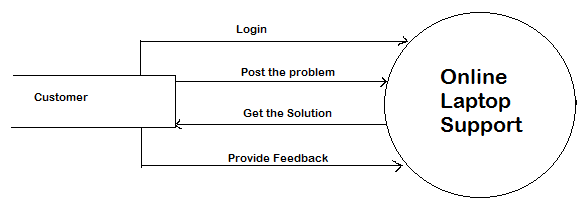
**Level 1 DFD:**



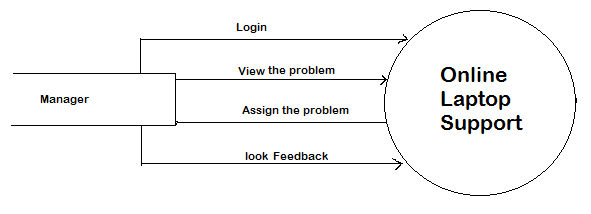
**5.4 Level 2 DFD:**

Level 2 DFD is one step deeper into parts of Level 1. It may require more text to reach the necessary level of detail about the system’s functioning.

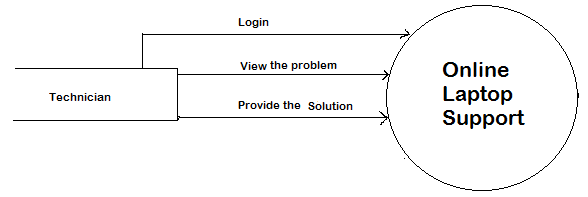
**Level 2 DFD for Customer:**

****

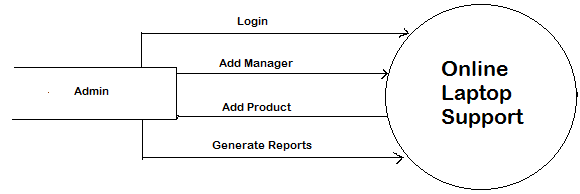
**Level 2 DFD for Manager:**



**Level 2 DFD for Technician:**



**Level 2 DFD for Admin:**



**6. USE CASE DIAGRAMS:**

UML provides the use case diagram to facilitate the process of requirements gathering. The use case diagram models the interactions between the system’s external clients and the use cases of the system. Each use case represents a different capability that the system provides the client.

**Kinds of classifiers:**

**Classifier Function Notation**

Actor An outside user of the

system

Class A concept from modeled

system

Interface A named set of operations that

characterize behavior

Node A computational resource

Use case A specification of the behavior of

an entity in its interaction with

outside agents

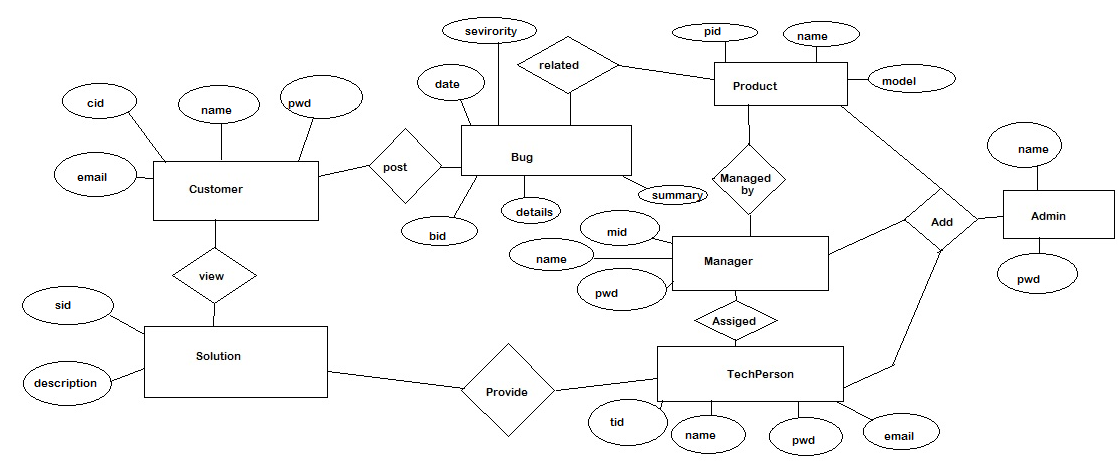
**CUSTOMER USECASE DIAGRAM:**



**MANAGER USECASE DIAGRAM:**



**7. ENTITY RELATIONSHIP DIAGRAMS (ER)**

**8. Database Designs**

**8.1 Introduction**

**DATABASE**

A database is a collection of data with some inherent meaning, designed, built and populated with data for a specific purpose.

A database management system provides flexibility in the storage and retrieval of data. The DBMS is a bridge between the application program, which determines what data are needed and how they are processed, and the operating system of the computer, which is responsible for placing data on the magnetic storage devices. A schema defines the database and a subschema defines the portion of the database that a specific program will use.

**Characteristics**

Represents complex relationships between data.Keeps control on data redundancy.

Keeps a centralized data dictionary for the storage of information retaining to data and its manipulation. Enforces data access authorization.has automatic intelligent backup and recovery Procedure for data.

**Database Administrator**

A database administrator is a block of code loaded into memory, which organizes all information (database) between the users.

The DBA takes care of the following things:

* Updating database
* Retrieving the data
* Accepting the queries
* Enforces security
* Enforces data integrity specifications
* Managing data sharing
* Optimizing queries
* Managing system catalogs

**Representing of null values**

The database management system has a consistent method for representing null values. For example, null values for numeric data must be distinct from the zero or any other numeric value for character data it must be different from string of blanks or any other character value.

**Catalog Facility**

A logical description of a relational database represented in the same manner as pre ordinary data. This is done so that facilities of the relational management system itself can be used to maintain database description.

**Data language**

A relational database management may support many types of languages for describing data and accessing the database. However there must be at least one language that was ordinary character strings to support the definition of data, the definition of views, the manipulation of data, constraints of data integrity information concerning authorization and the boundaries for recovery of units.

**View Updatability**

Any view that can be defined using combination of base tables that are theoretically updateable is capable being updated by the relational database management system.

**Insert, Update, Delete**

Any operand that describes the results of a single retrieval operation is capable of being changes to be made to application program.

**Logical Data Independency**

Changes made to table the so not modify and data stored in the table do not require changes to be made to application program.

**8.2 Normalization**

**INTRODUCTION TO NORMALIZATION**

**First Normal Form**

A relation R is in first normal form if and only if all underlying domains contains atomic values only.

**Second Normal Form**

A relation R is in second normal form if and only if it is in first normal form and every non-key attribute is fully dependent on primary key.

**Third Normal Form**

A relation R is in third normal form if and only if t is in second normal form and every non-key attribute is non-transitively dependent on primary key.

**Boyce-Codd Normal Form**

A relation R is in Boyce-Codd form if and only if every determinate is a candidate key.

Normalization reduces redundancy. Redundancy is the unnecessary reputation of data. It can cause problems with storage and retrieval of data. Full-normalized record consists of a primary key, which identifies the entity and empty set of attribute.

**Table designs:**

**Customers:**

|  |  |  |
| --- | --- | --- |
| **Field name** | **Data type** | **Constraint** |
| Cid | Number (4) | Primary key |
| Cname | Varchar2 (15) |  |
| Password | Varchar2 (10) |  |
| Address | Varchar2 (30) |  |
| Phone | Number (15) |  |
| Email | Varchar2 (30) |  |
| Cuname | Varchar2 (15) | Unique |

**Administrators:**

|  |  |  |
| --- | --- | --- |
| **Field name** | **Data type** | **Constraint** |
| Auname | Varchar2 (15) | Primary key |
| Password | Varchar2 (10) |  |
| Aname | Varchar2 (15) |  |
| Address | Varchar2 (30) |  |
| Phone | Varchar2 (15) |  |
| Email | Varchar2 (30) |  |

**Managers:**

|  |  |  |
| --- | --- | --- |
| **Field name** | **Data type** | **Constraint** |
| Mid | Number (4) | Primary key |
| Muname | Varchar2 (15) | Unique |
| Password | Varchar2 (10) |  |
| Mname | Varchar2 (15) |  |
| Address | Number (30) |  |
| Phone | Varchar2 (15) |  |
| Email | Varchar2 (30) |  |

**Products:**

|  |  |  |
| --- | --- | --- |
| **Field name** | **Data type** | **Constraint** |
| Pid | Number (4) | Primary key |
| Pname | Varchar2 (15) | Unique |
| Version | Varchar2 (10) |  |
| Vendor\_name | Varchar2 (15) |  |
| Mid | Number (4) | Foreign key |

**Tech persons:**

|  |  |  |
| --- | --- | --- |
| **Field name** | **Data type** | **Constraint** |
| Tid | Number (4) | Primary key |
| Tuname | Varchar2 (15) | Unique |
| Password | Varchar2 (10) |  |
| Tname | Varchar2 (15) |  |
| Address | Varchar2 (30) |  |
| Phone | Varchar2 (15) |  |
| Email | Varchar2 (35) |  |
| Mid | Number (4) | Foreign key |
| Status | Varchar2 (4) |  |

**Bug details:**

|  |  |  |
| --- | --- | --- |
| **Field name** | **Data type** | **Constraint** |
| Bid | Number (4) | Primary key |
| Cid | Number (4) | Foreign key |
| Pid | Number (4) | Foreign key |
| Severity | Varchar2 (30) |  |
| Priority | Varchar2 (8) |  |
| Summary | Varchar2 (30) |  |
| Details | Varchar2 (30) |  |
| Os\_using | Varchar2 (15) |  |
| Software\_list | Varchar2 (30) |  |
| Filename | Varchar2 (15) |  |
| Post\_date | Date |  |
| Assigned | Varchar2 (4) |  |

**Assignment:**

|  |  |  |
| --- | --- | --- |
| **Field name** | **Data type** | **Constraint** |
| Assignment\_id | Number (4) | Primary key |
| Bid | Number (4) | Foreign key |
| Tid | Number (4) | Foreign key |
| Assignment\_date | Date |  |
| Expected\_date | Date |  |
| Solved | Varchar2 (4) |  |

**Solutions:**

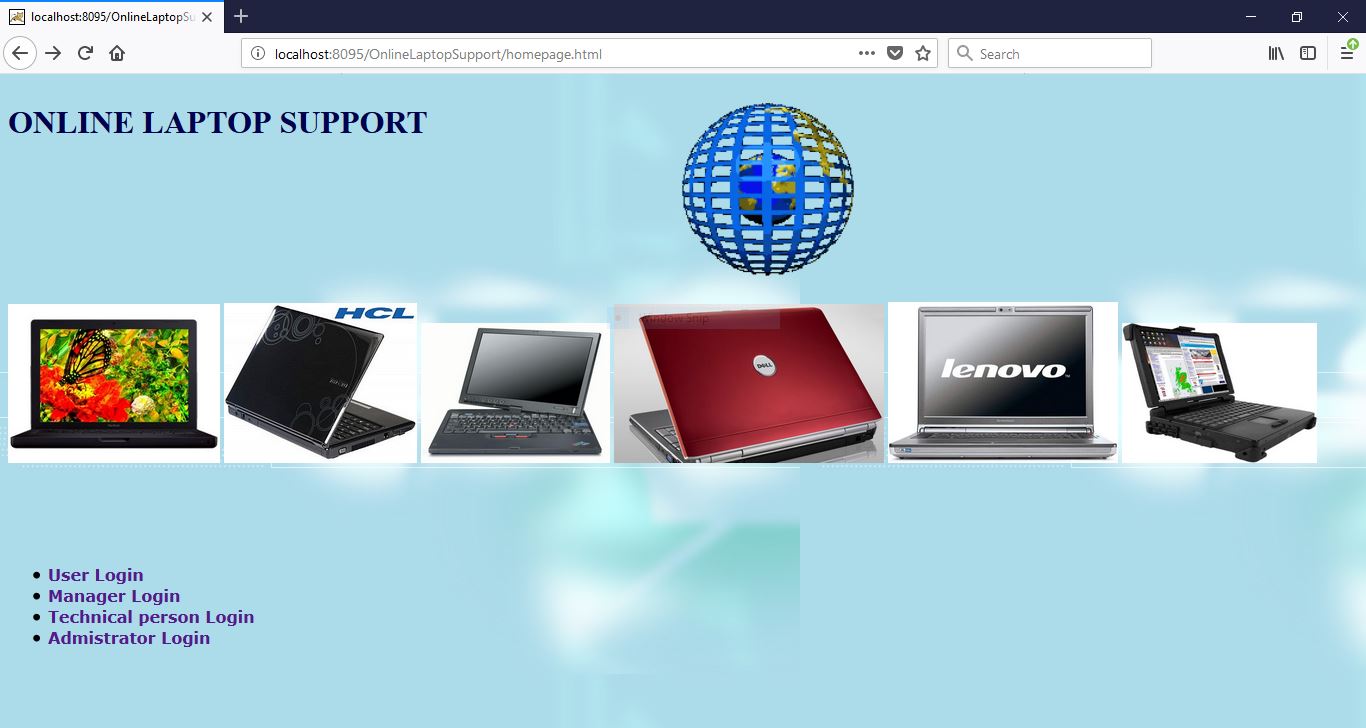
|  |  |  |
| --- | --- | --- |
| **Field name** | **Data type** | **Constraint** |
| Sid | Number (4) | Primary key |
| Bid | Number (4) | Foreign key |
| Tid | Number (4) | Foreign key |
| Solution\_desc | Varchar2 (50) |  |
| Solution\_date | Date |  |
| Priority | Varchar2 (4) |  |

**Comments:**

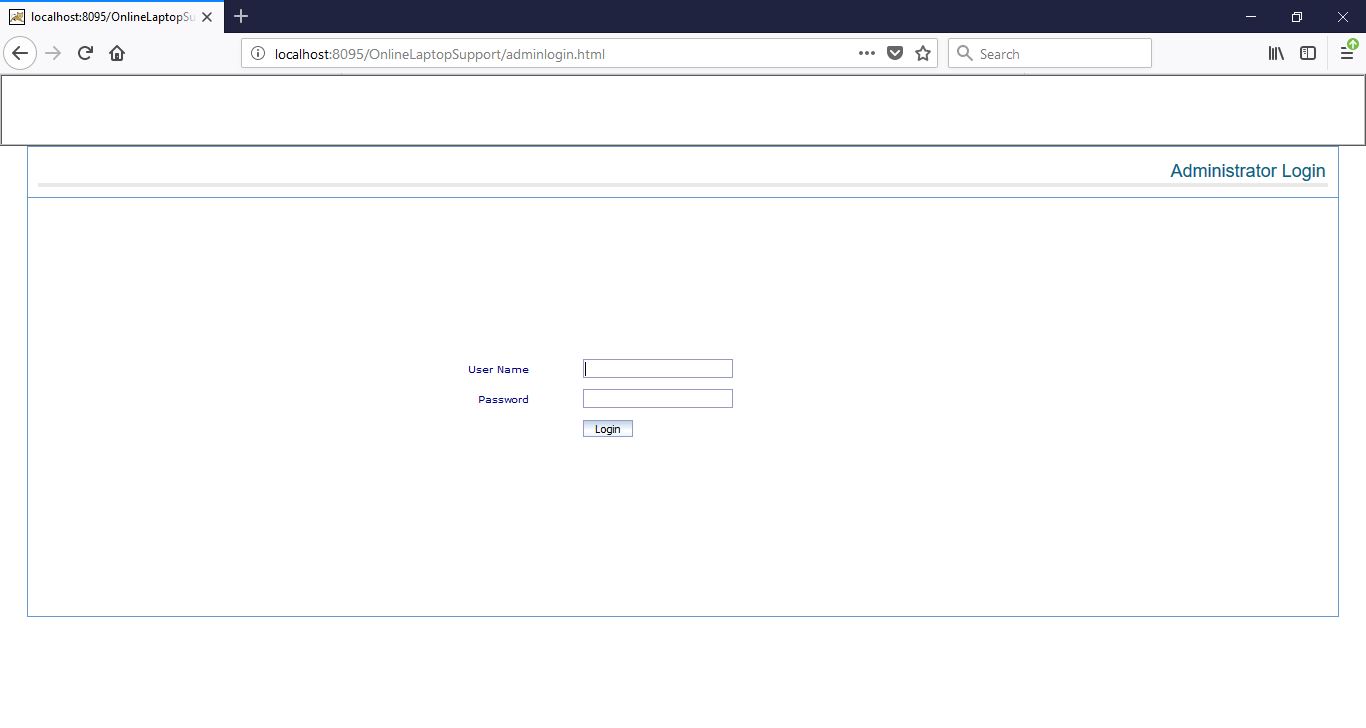
|  |  |  |
| --- | --- | --- |
| **Field name** | **Data type** | **Constraint** |
| Bid | Number (4) |  |
| Resolved | Varchar2 (6) |  |
| Coment | Varchar2 (70) |  |

**9. Sample Screenshots**

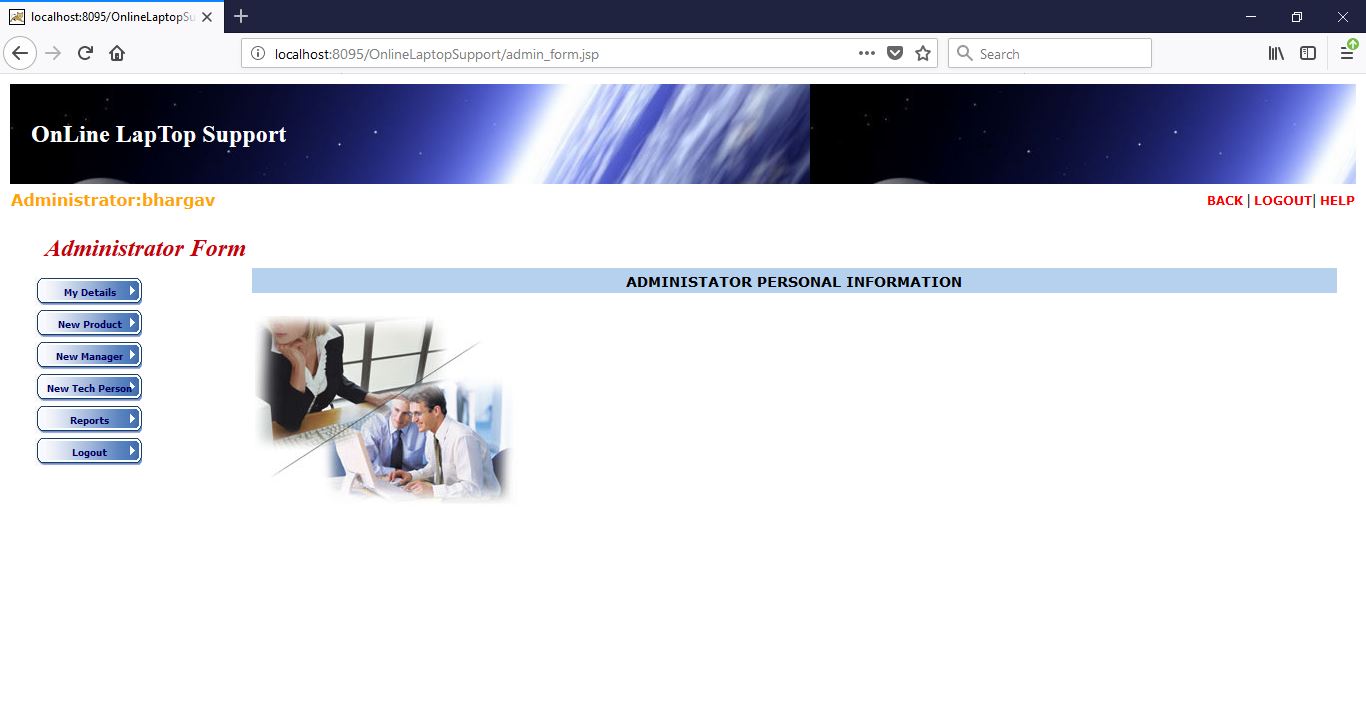
**Home page:**

****

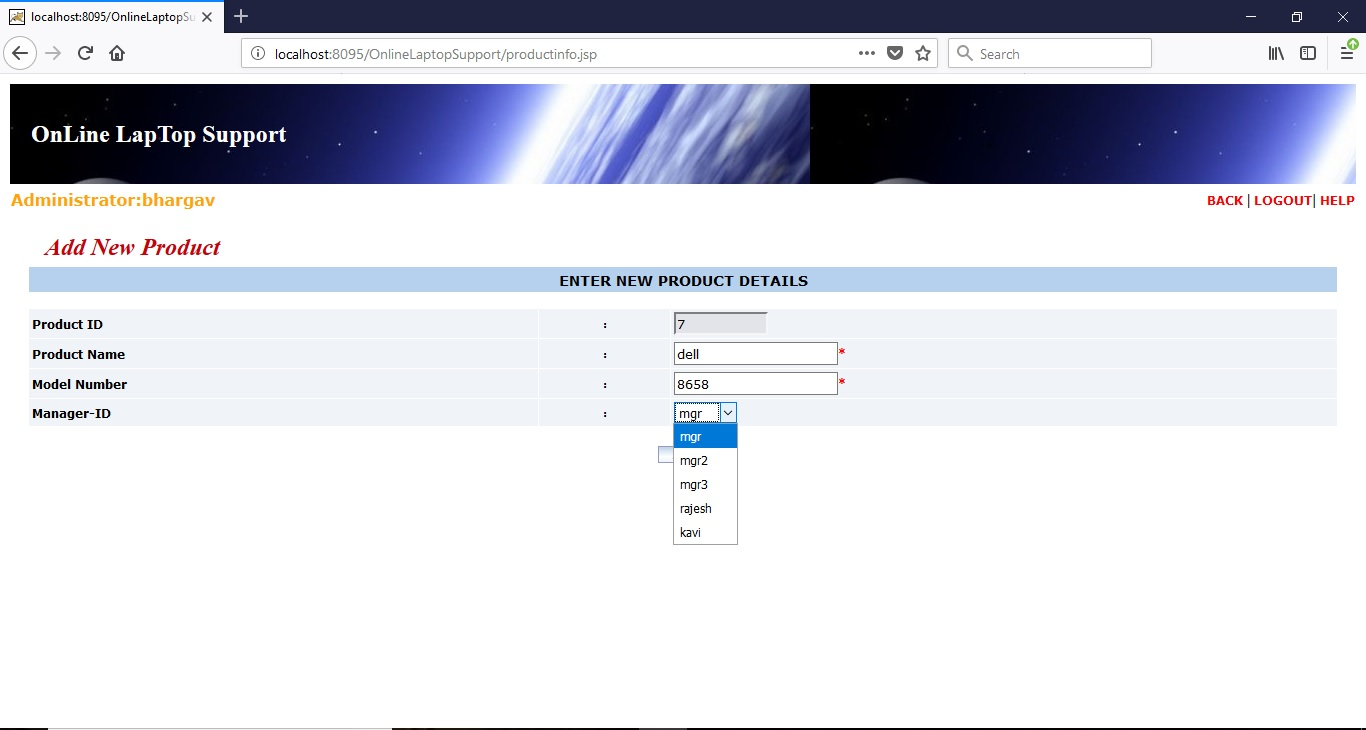
**Admin Login**

****

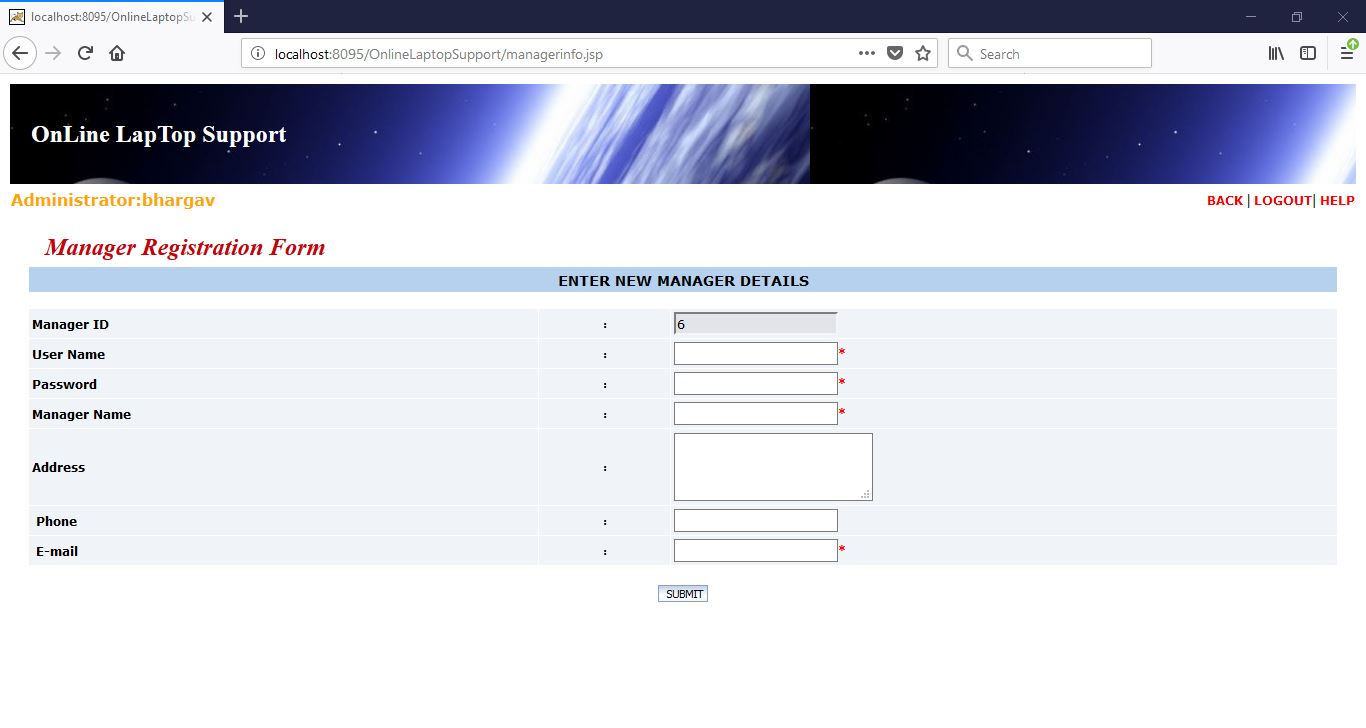
**Admin Home Page**

****

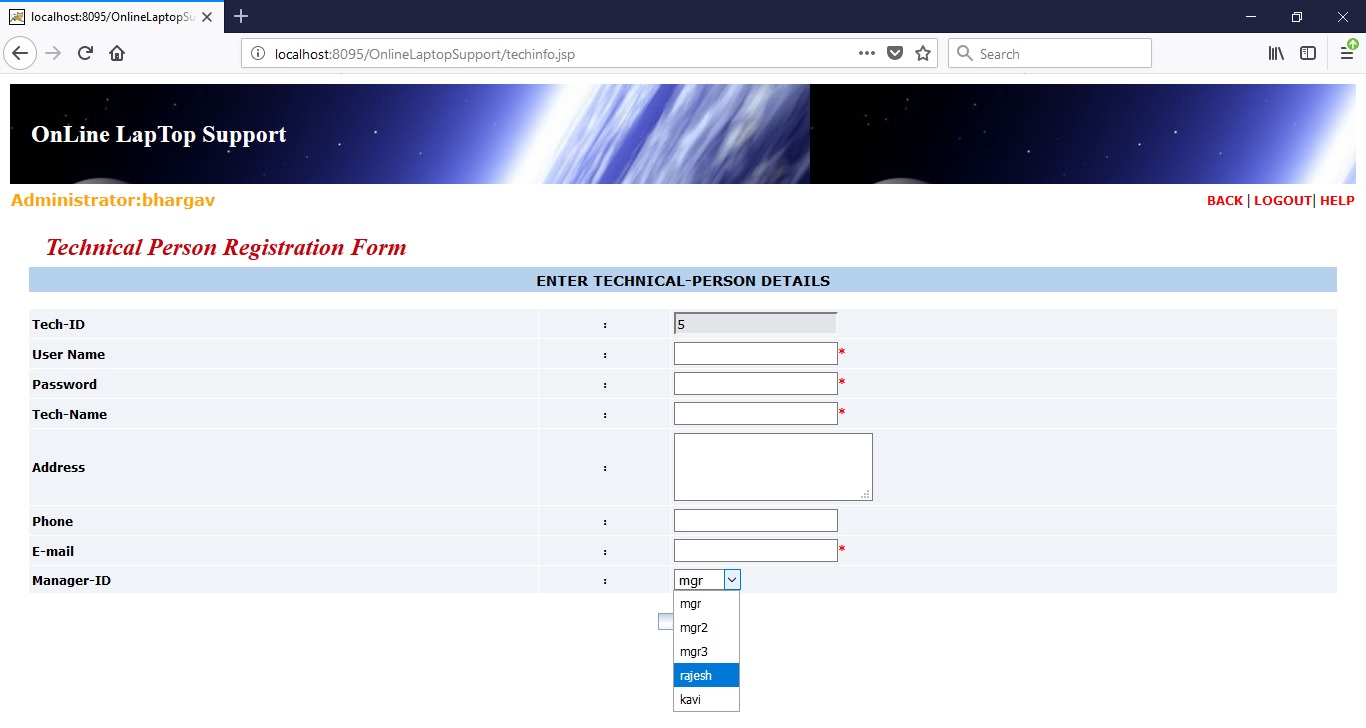
**Adding New Products**

****

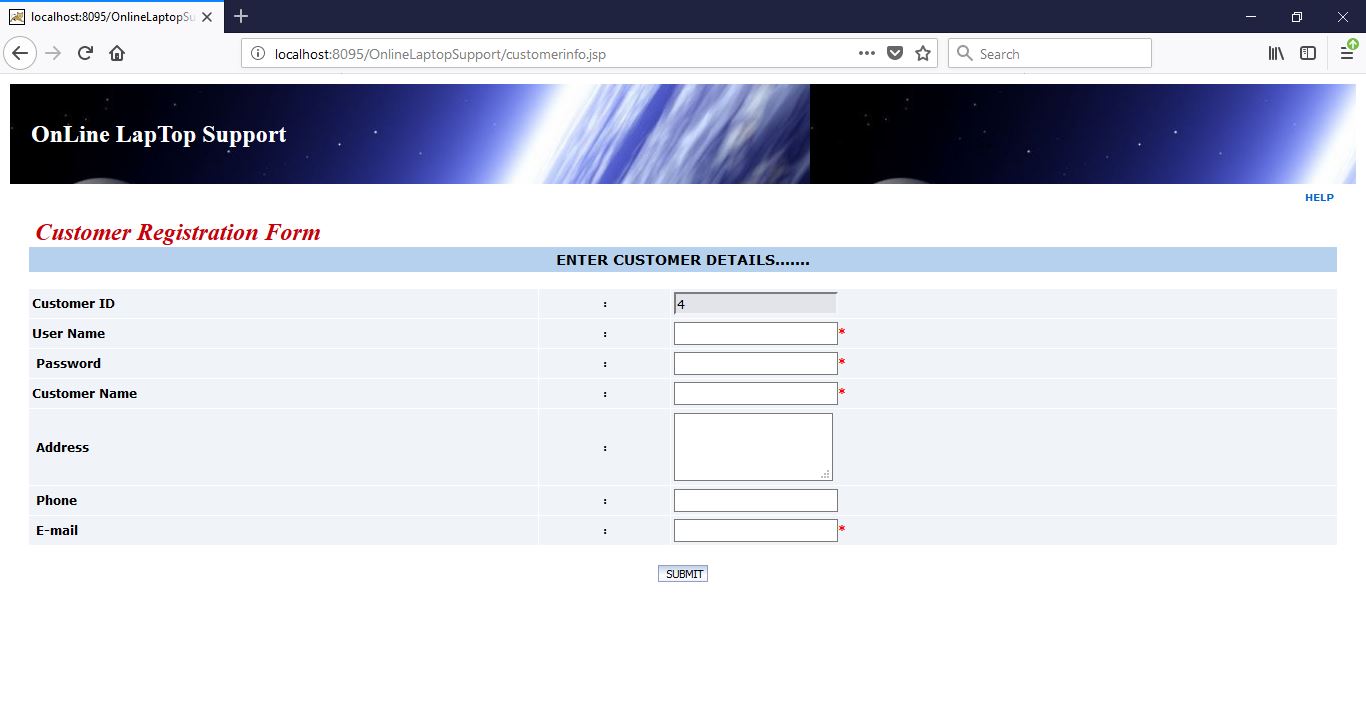
**Adding New Manager**

****

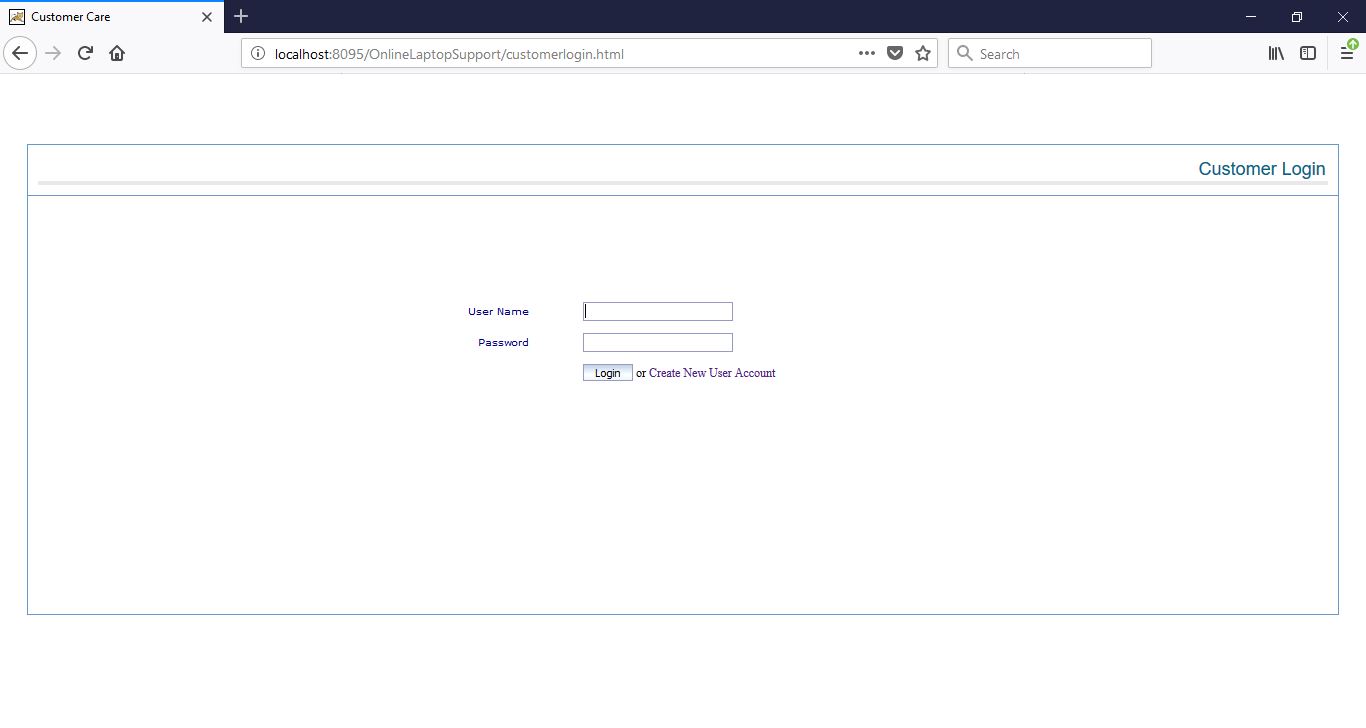
**Adding New Tech Persons**

****

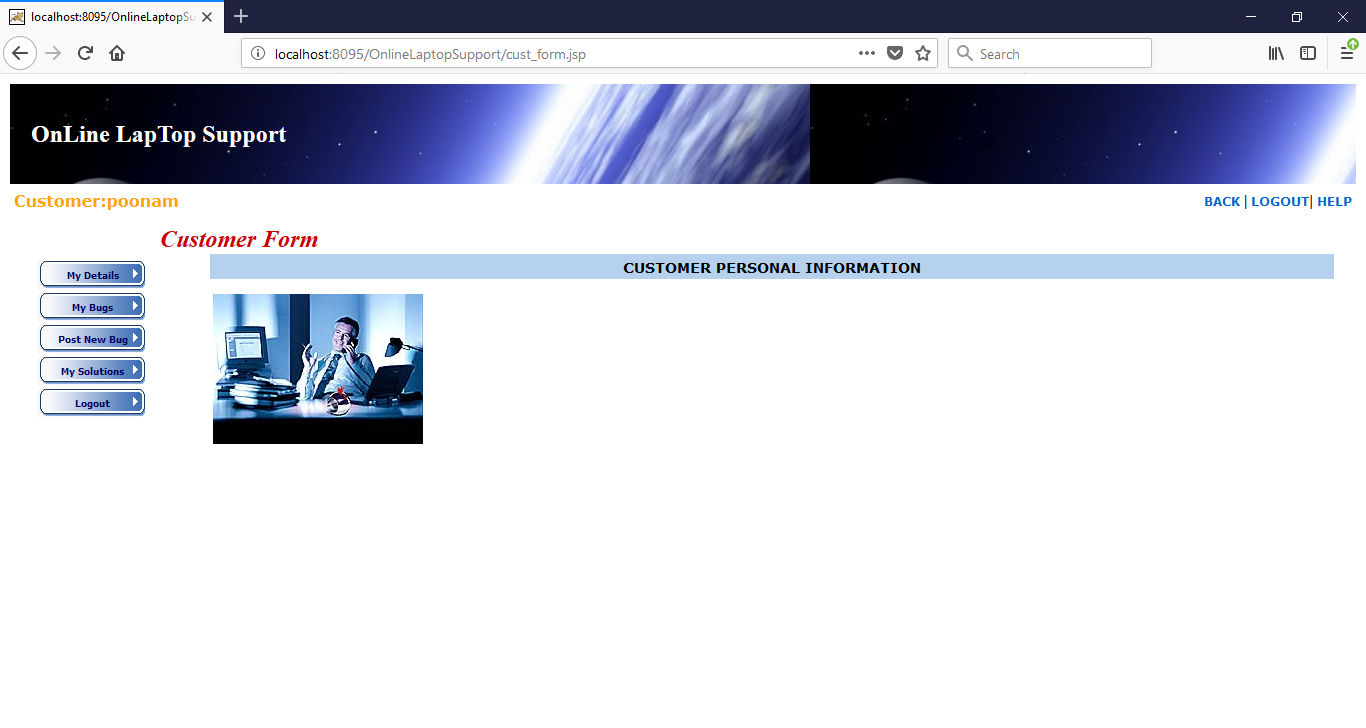
**Customer Registration**

****

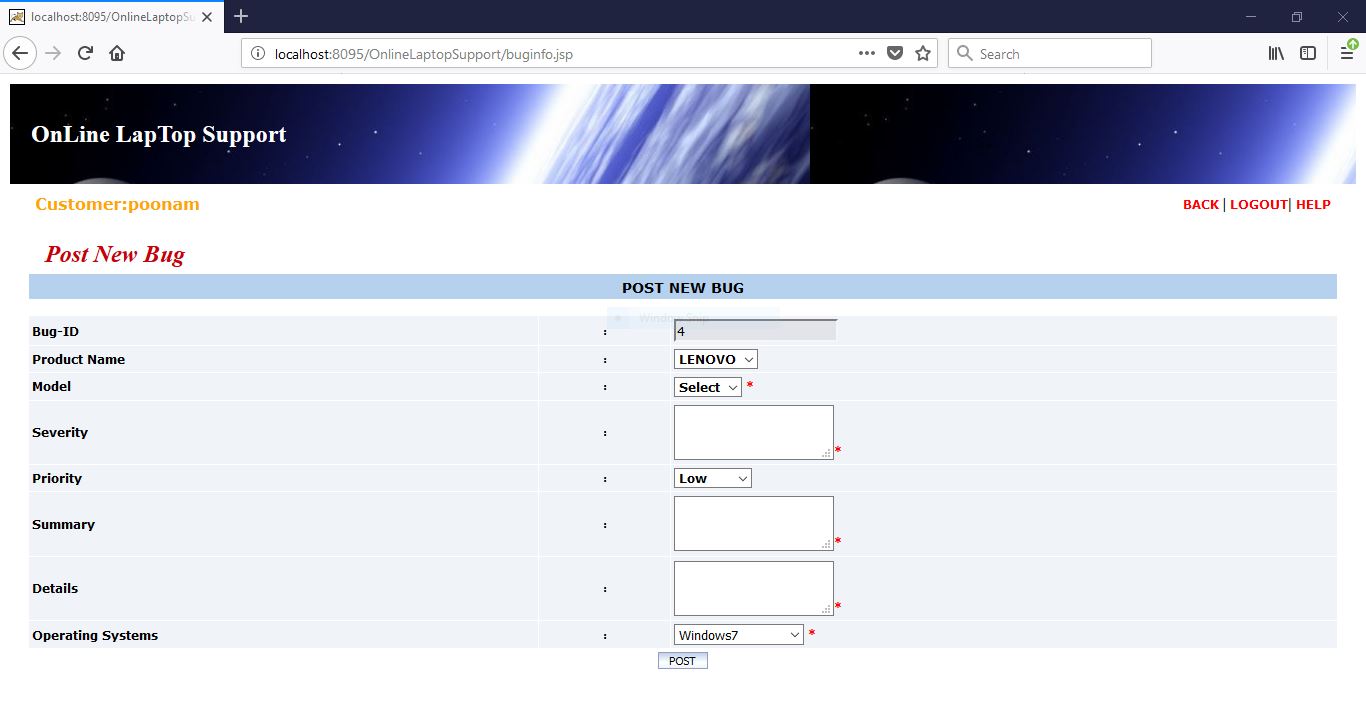
**Customer login**

****

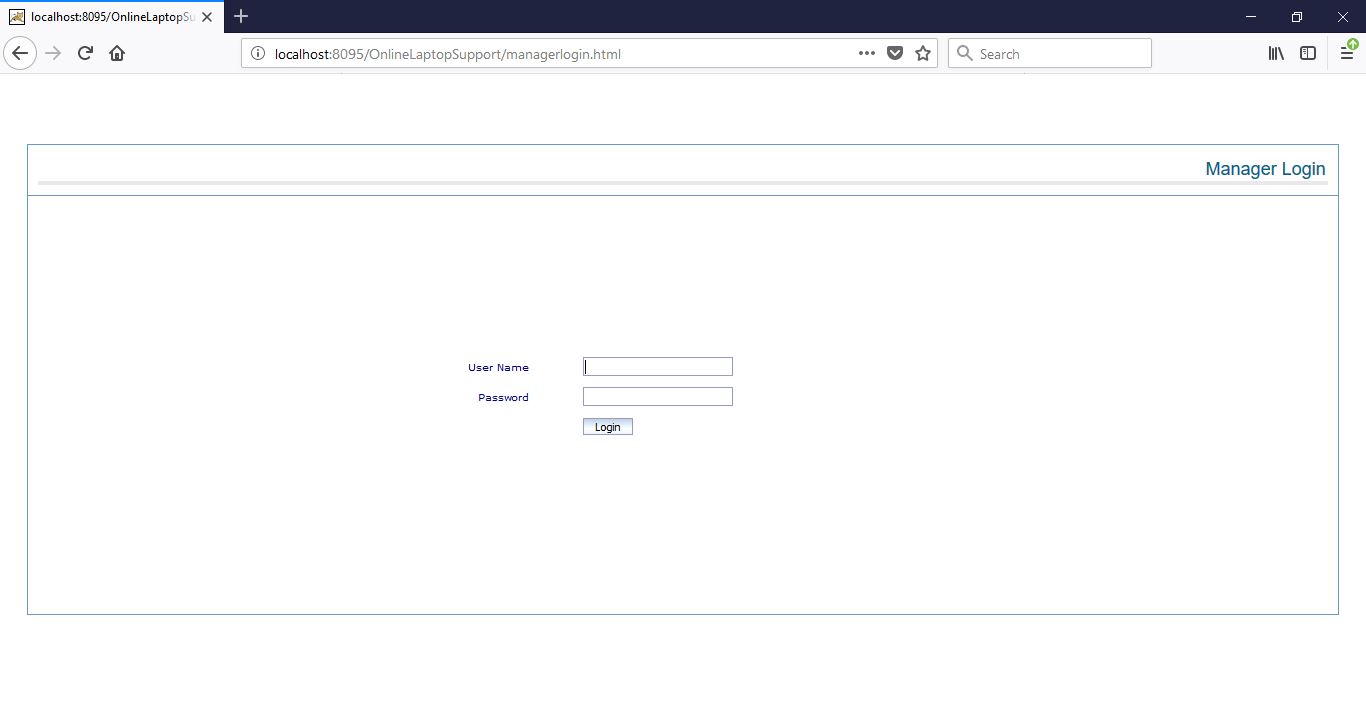
**Customer Home Page**

****

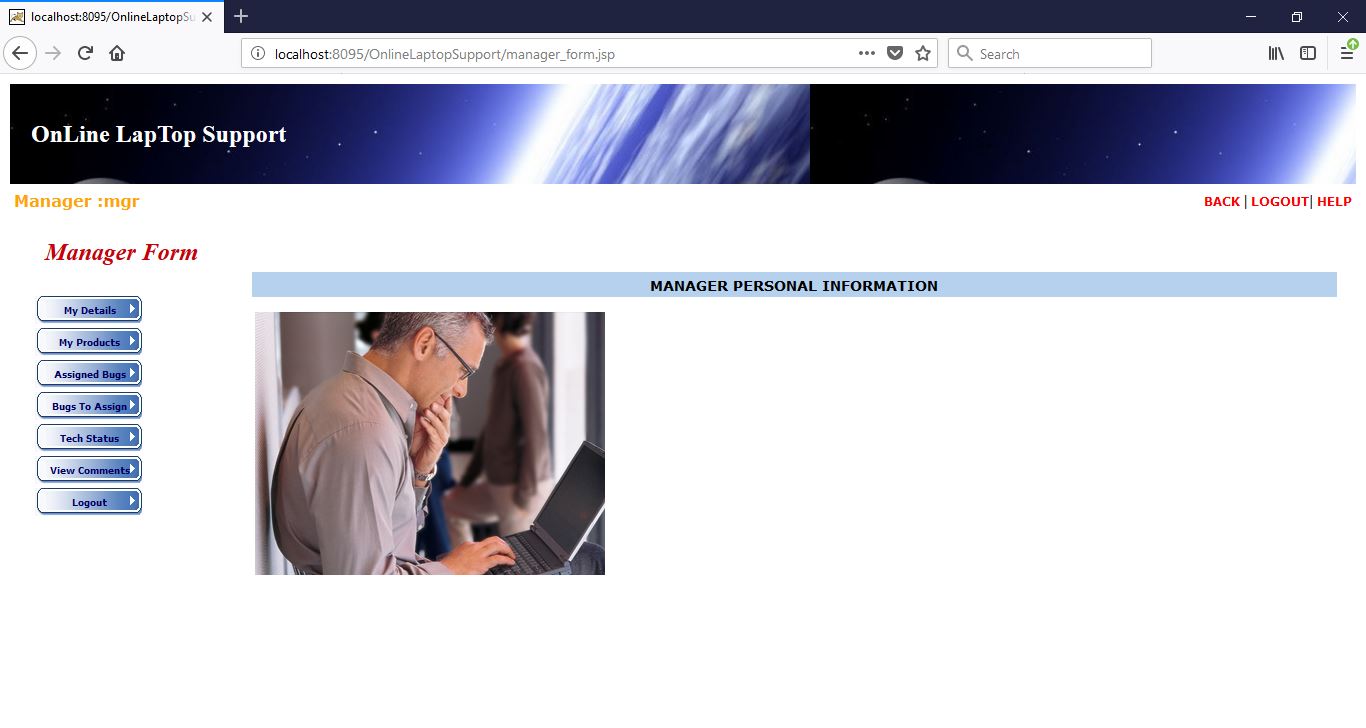
**Posting New Bug**

****

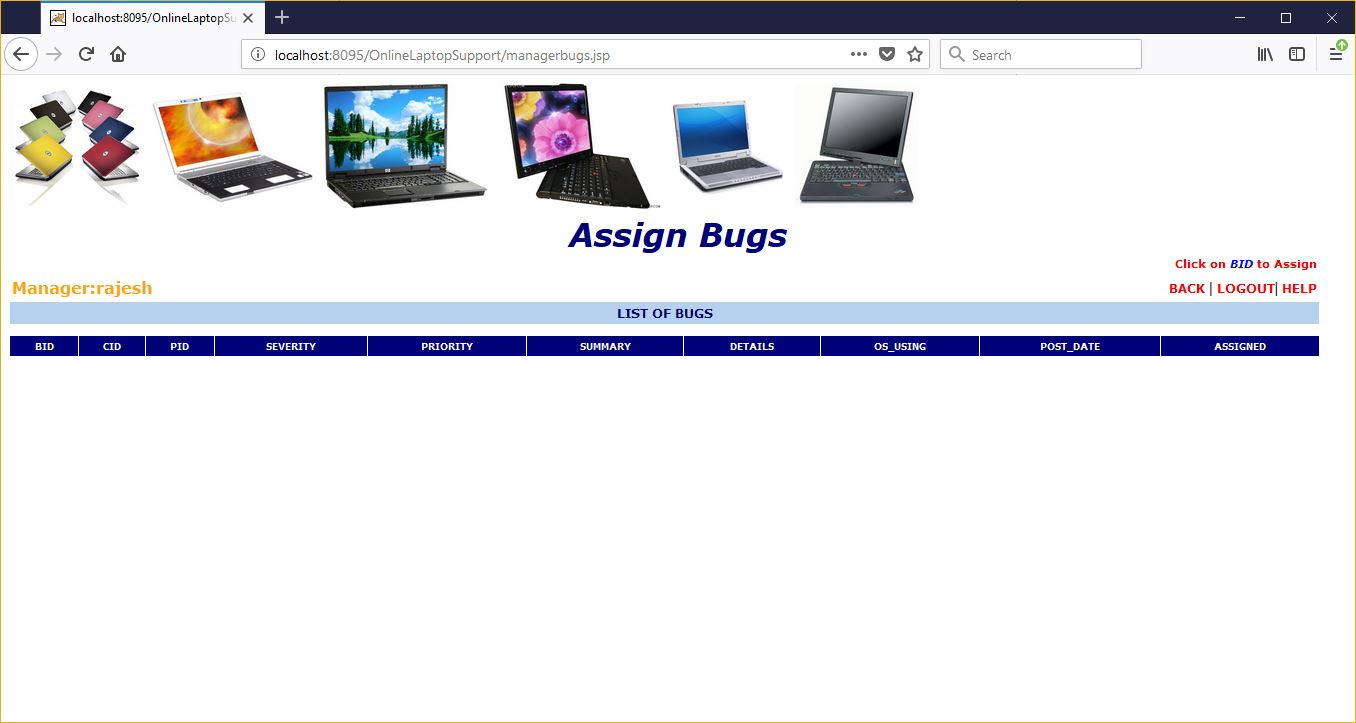
**Manager Login**

****

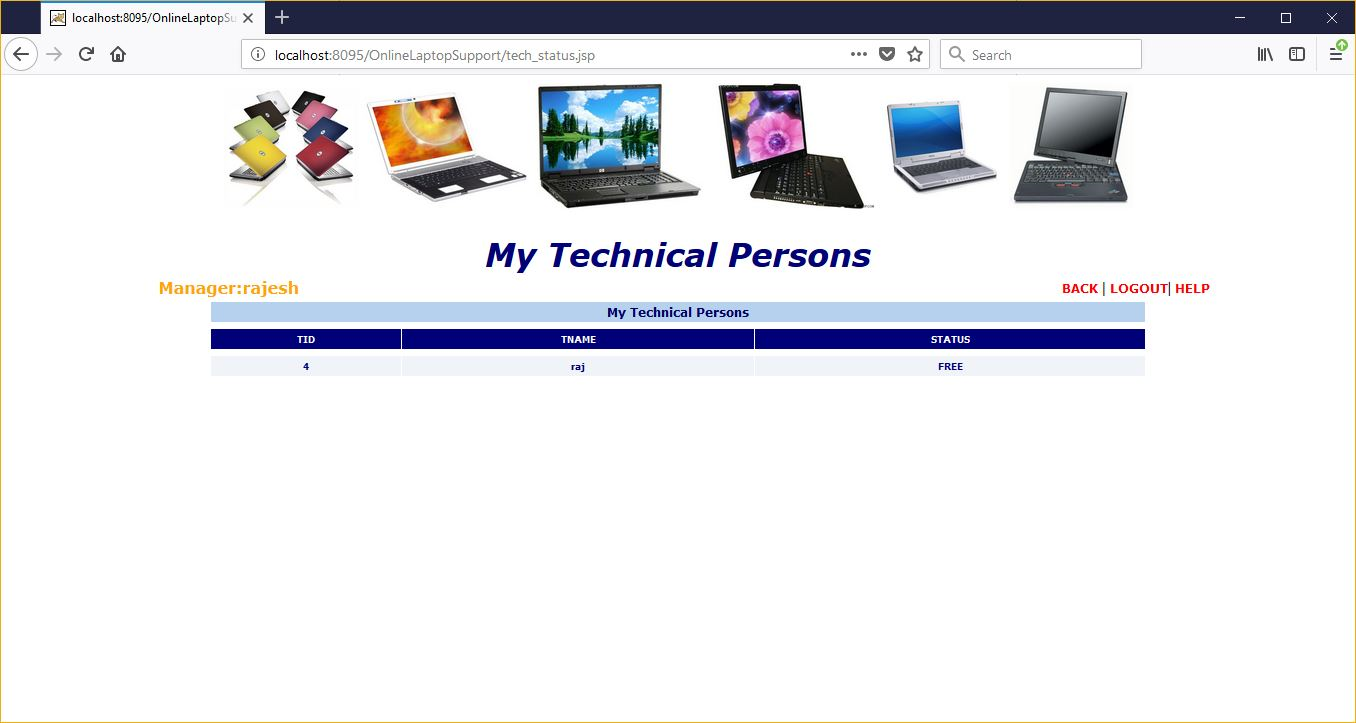
**Manager Home Page**

****

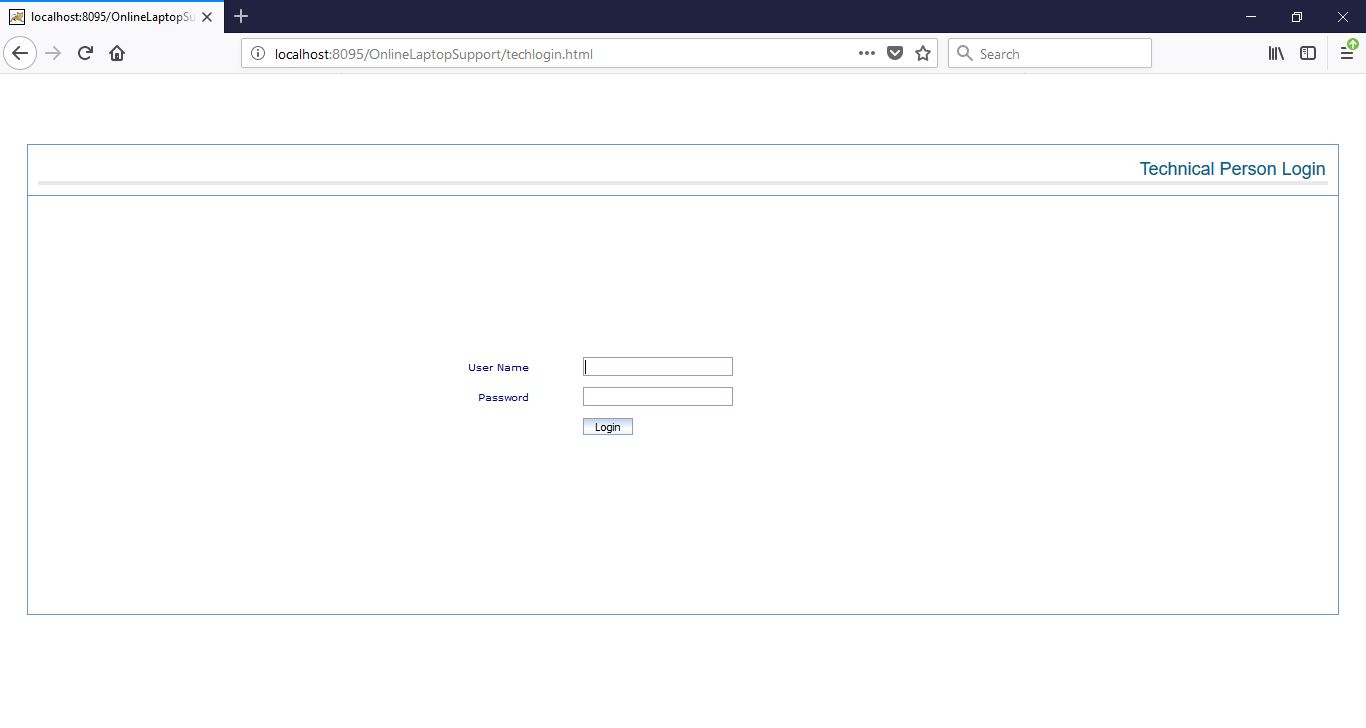
**Assigning Bugs**

****

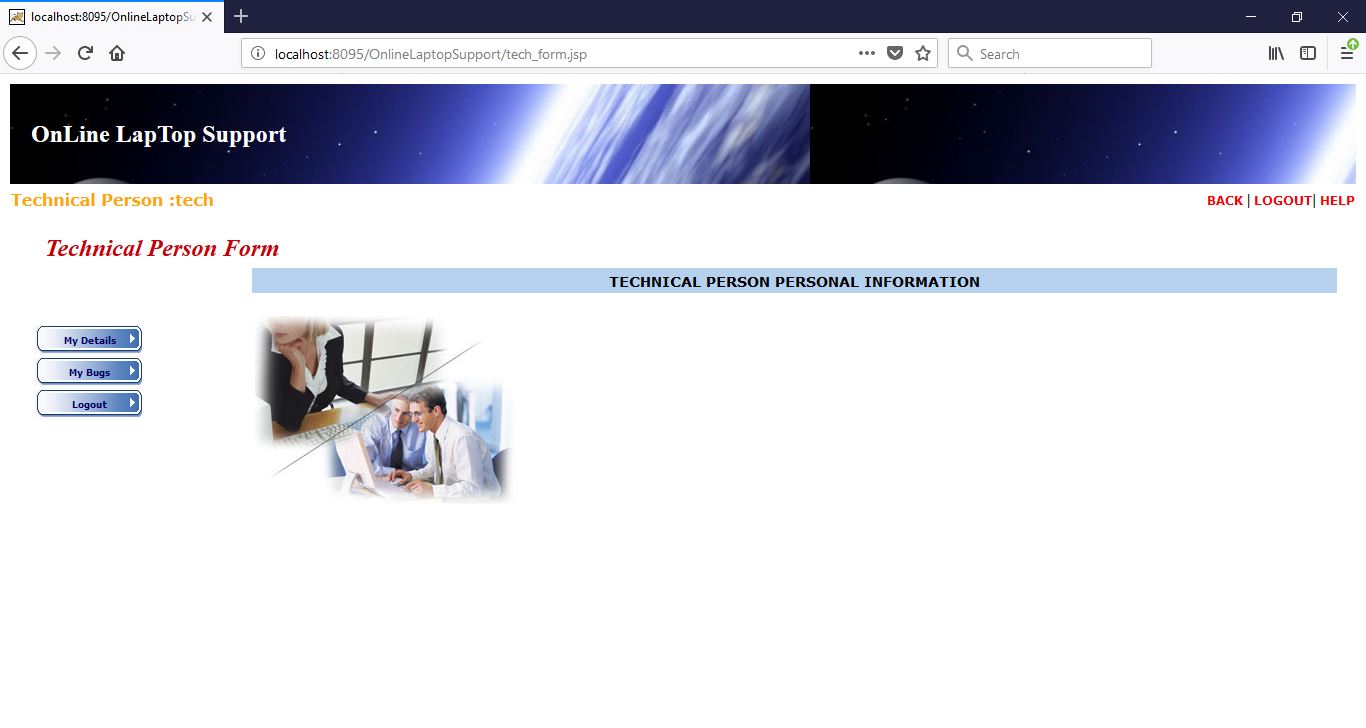
**Technical Persons**

****

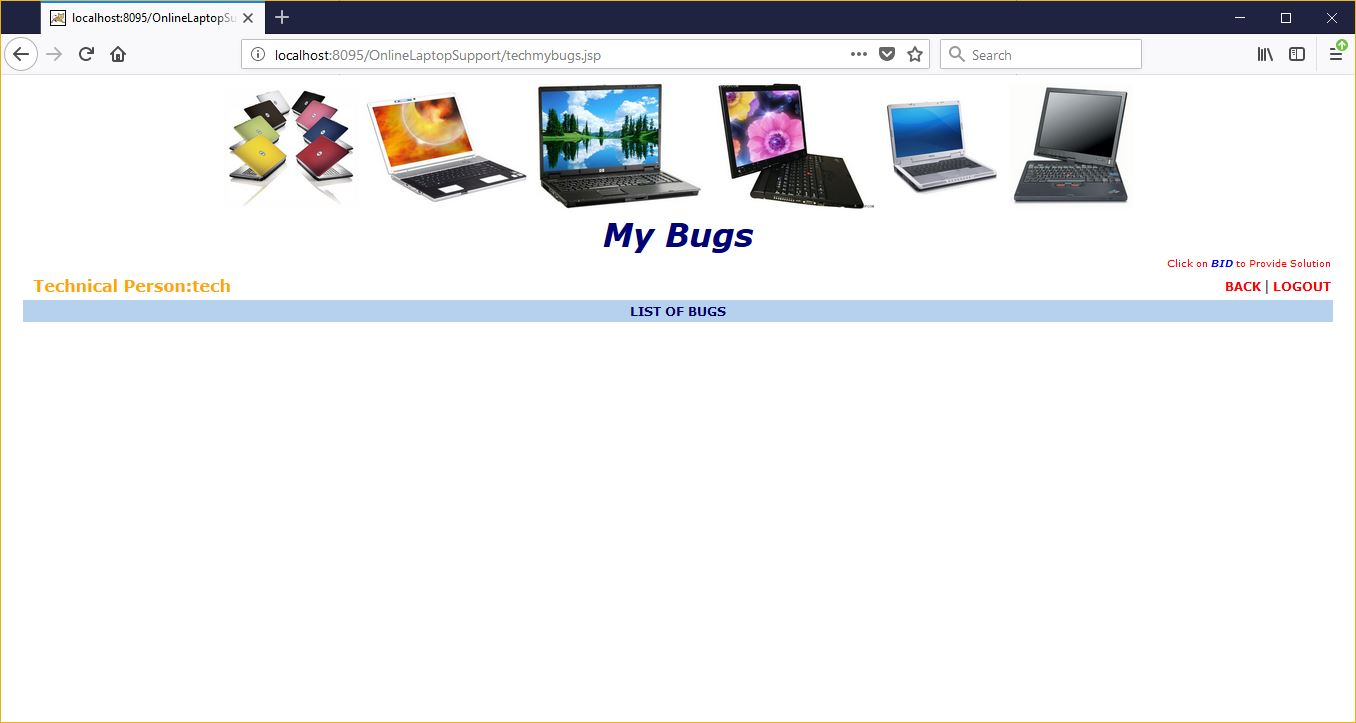
**Technical Person Login**

****

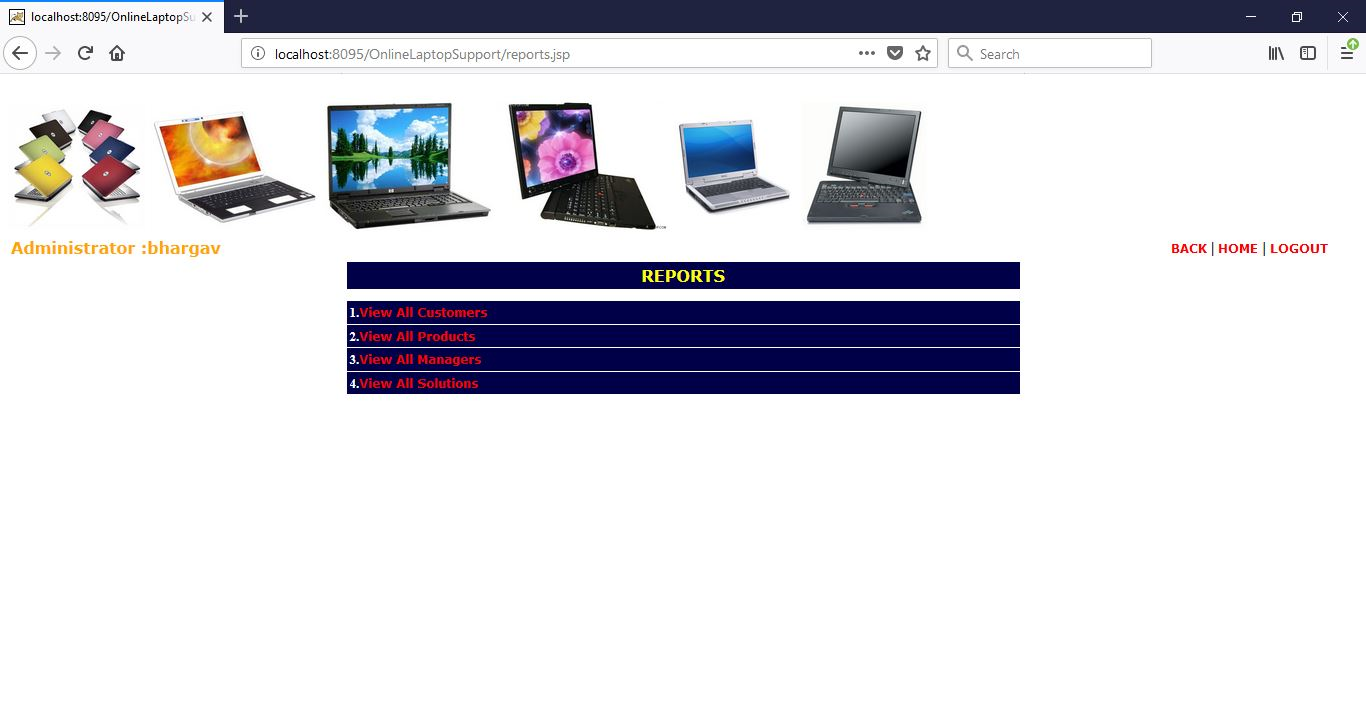
**Tech Person Home Page**

****

**Bugs assigned**

****

**Reports**

****

**10.coding**

**Signin.jsp**

<html>

<body bgcolor="navyblue">

<center>

<%@page import="java.sql.\*,mybean.\*,javax.servlet.http.\*"%>

<%@page errorPage="err.jsp"%>

<%!

Connection con=null;

HttpSession session=null;

%>

<%

String uid=request.getParameter("uid");

String pwd=request.getParameter("pwd");

if(con==null)

{

con=DB.getConnection();

}

Statement st=con.createStatement();

ResultSet rs=st.executeQuery("select password from customers where cuname='"+uid+"'");

if(rs.next())

{

if(pwd.equals(rs.getString(1)))

{

session=request.getSession(true);

session.putValue ("cuname",uid);

response.sendRedirect("cust\_form.jsp");

}

else

{

response.sendRedirect("customerlogin.html");

}

}

else

{

response.sendRedirect("customerlogin.html");

}

%>

</body>

</html>

**Technical status.jsp**

<html>

<head>

<style>

a

{

text-decoration:none;

color:red;

font-size:9pt;

font-family:verdana;

font-weight:bold;

}

a:hover

{

color:blue;

text-decoration: underline;

}

</style>

</head>

<body>

<%@page import="java.sql.\*,mybean.\*"%>

<%@page errorPage="err.jsp"%>

<%!

Connection con=null;

int mid;

%>

<%

con=DB.getConnection();

Statement st1=con.createStatement();

ResultSet rs1=st1.executeQuery("select mid from managers where muname='"+session.getValue("muname")+"'");

if(rs1.next())

{

mid=rs1.getInt(1);

// out.println(mid);

}

else

{

out.println("<h1>Session Expired</h1>");

}

Statement st2=con.createStatement();

ResultSet rs2=st2.executeQuery("select tid,tname,status from tech\_persons where mid="+mid);

ResultSetMetaData rsmd=rs2.getMetaData();

%>

<br>

&nbsp;&nbsp;<font style="font-size=9pt;font-family:verdana;color:orange"><strong>Manager :<%=session.getValue("muname")%></strong></font>

<table width=98% >

<tr><td>&nbsp;&nbsp;&nbsp;</td><td><a href="manager\_form.jsp">BACK</a><b>&nbsp;|&nbsp;<a href="signout.jsp"><b>LOGOUT</b></a> </td></tr>

</table>

<table align=center bgcolor=white border=0 cellspacing=1 width=70%>

<tr bgcolor=#b5d1ee ><td height=20 colspan=3 align=middle style="font-size=9pt;font-family:verdana;color:#000080"><strong>My Technical Persons</strong></td></tr>

<!-- //empty row -->

<tr><td height=5></td></tr>

<tr bgcolor=#000077>

<%

for(int i=1;i<=rsmd.getColumnCount();i++)

{

%>

<td height=20 align=middle style="font-size=7pt;font-family:verdana;color:white;font-weight:bold">

<%=rsmd.getColumnName(i)%>

<%

}

%>

</tr>

<!-- //empty row -->

<tr><td height=5></td></tr>

<%

String bcolor;

for(int i=1;rs2.next();i++)

{

if(i%2==0)

bcolor="#e3f2eb";

else

bcolor="#f0f4f9";

%> <tr bgcolor=<%=bcolor%>>

<%

for(int j=1;j<=rsmd.getColumnCount();j++)

{

%> <td height=20 align=middle style="font-size=8pt;font-family:verdana;color:#000080"><%=rs2.getString(j)%></td>

<%

}//eof for

%>

</tr>

<%

}//eof outer-for

%></table></body>

</html>

**Customerlink.jsp**

<html>

<%

out.println(request.getParameter("submit"));

String cuname=(String) session.getValue("cuname");

out.println(cuname);

if(request.getParameter("submit").equals("My Details"))

response.sendRedirect("showcdetails.jsp");

else if(request.getParameter("submit").equals("My Bugs"))

response.sendRedirect("mybugs.jsp");

else if(request.getParameter("submit").equals("Post New Bug"))

response.sendRedirect("buginfo.jsp");

else if(request.getParameter("submit").equals("My Solutions"))

response.sendRedirect("custsolutions.jsp");

else if(request.getParameter("submit").equals("Logout"))

response.sendRedirect("signout.jsp");

%>

</html>

**MyProducts.jsp**

<html>

<head>

<style>

a

{

text-decoration:none;

color:red;

font-size:9pt;

font-family:verdana;

font-weight:bold;

}

a:hover

{

color:blue;

text-decoration: underline;

}

</style>

</head>

<body>

<%@page import="java.sql.\*,mybean.\*"%>

<%@page errorPage="err.jsp"%>

<center><font size=6pt color=#000077 face=verdana><b><i>My Products</i></b></font></center>

<br>

<img src="D:\Tomcat 4.1\webapps\ROOT\p1.gif" style="width=9%"></img>

<img src="D:\Tomcat 4.1\webapps\ROOT\p4.gif" style="width=16%"></img>

<img src="D:\Tomcat 4.1\webapps\ROOT\p7.gif" style="width=16%"></img>

<img src="D:\Tomcat 4.1\webapps\ROOT\p8.gif" style="width=13%"></img>

<img src="D:\Tomcat 4.1\webapps\ROOT\p2.gif" style="width=16%"></img>

<img src="D:\Tomcat 4.1\webapps\ROOT\oracle.gif" style="width=15%"></img>

<br>

<%!

Connection con=null;

ResultSetMetaData rsmd=null;

ResultSet rs=null,rs1;

%>

<%

try{

con=DB.getConnection();

Statement st=con.createStatement();

rs1=st.executeQuery("select mid from managers where muname='"+session.getValue("muname")+"'");

if(!rs1.next())

out.println("<h2>Session Expired</h2><br>");

int mid= rs1.getInt(1);

Statement st1=con.createStatement();

rs= st1.executeQuery("select \* from products where mid="+mid+" order by pid");

rsmd=rs.getMetaData();

}

catch(Exception e)

{

out.println(e);

}

%>

<br>

<font style="font-size=9pt;font-family:verdana;color:orange"><strong>Manager :<%=session.getValue("muname")%></strong></font>

<table width=98% >

<tr><td align=right><a href="manager\_form.jsp">BACK</a><b>&nbsp;|&nbsp;</b><a href="signout.jsp"><b>LOGOUT</b></a> </td></tr>

</table>

<center>

<table width=98% bgcolor=white cellpadding=3 cellspacing=1>

<tr><td colspan=12 align=center bgcolor=#b5d1ee height=20 style="font-size:9pt;font-family:verdana;color:#000066"><b>LIST OF BUGS</b></td></tr>

<tr><td height=10></td></tr>

<tr>

<%

try{

for(int i=1;i<rsmd.getColumnCount();i++)

{

%>

<td align="center" height=20 bgcolor=#000077 style="font-weight:bold;font-size:7pt;font-family:verdana;color:white"><b><%= rsmd.getColumnName(i) %>

</td></b>

<%

}

String bcolor;

while(rs.next())

{

%>

<tr>

<%

for(int i=1;i<rsmd.getColumnCount();i++)

{

if(i%2==0)

bcolor="#fof4f9";

else

bcolor="#e3f2eb";

%> <td align="center" height=20 bgcolor=<%=bcolor%> style="font-weight:bold;font-size:7pt;font-family:verdana;color:#000080">

<b>

<%= rs.getString(i)%>

</b>

</td>

<% }// end of for

%>

</tr>

<%

}//end of while

}//end of try

catch(Exception e)

{

out.println(e);

}

%>

</tr></table>

</body>

</html>

**Signout.jsp**

<html>

<body bgcolor="navyblue">

<%

session.invalidate();

%>

<h1>Signed out Completely.........</h1>

<center><a href="homepage.html"> <b>Home</b></a></center>

</body>

</html>

**11. CONCLUSION**

This web-based application minimizes the problems of customers who are facing the problems with laptops. Customers can enjoy the task , doing it ease and also by saving the valuable time .The effective utilization of the laptop will be improved.

**12. BIBLOGRAPHY**

Modern System Analysis and Design by Jeffery A.Hoffer, J Oey F, George 5th Edition.

Software Engineering – A Practitioners Approach by Rogers S.Pressman, 6th Edition.

Fundamentals of Database System Concepts by Shamkant b.Navathe.

[www.w3schools.com](http://www.w3schools.com)

[www.Programiz.com](http://www.Programiz.com)