**Abstract:**

In this application we mainly show’s that how to store the file with security using Encryption algorithms. User will login into the application by giving a valid email id of whom the file security key must be sent. After successful login the user will upload the file the file will encrypt and stored in the given path and security key sent to given mail id. The user will download the decrypted file by giving security key which is received and decrypt it.

**CHAPTER -1**

**INTRODUCTION**

The File Security System is an application, which concentrates on the standards of data security and content authentication of any system. The standard of the system should discuss the issues of encryption and decryption standards of data management. The issues of the cipher text need to be dealt as per the standards given by the client. The proposed algorithms need to be worked out in formal way to come through the conclusions of implementations.

The Application should manage a portfolio to manage and maintain the user profiles that has participated under the information generation and transfer. The application should take care of the standards of bandwidth and the network jitters that may be caused due to some unconditional constraints that may occur under the operational standards. The application should also take care in protecting the standards used in ciphering the text, and should manage the abstraction of the principles applied from time to time.

Encryption of data plays a vital role in the real time environment to keep the data out of reach of unauthorized people, such that it is not altered and tampered. The File Security System is software, which tries to alter the originality of the text into some encrypted form. The major task of the File Security System is to provide the user the flexibility of passing the information implementing the encryption standards as per the specification and algorithms proposed and store the information in a form that is unreadable. The Application should have a reversal process as of which should be in a position to decrypt the data to its original format upon the proper request by the user. While the Encryption and Decryption is done the application should confirm the standards of authentication and authorization of the user. .

**CHAPER-2**

**SYSTEM ANALYSIS**

**THE STUDY OF THE SYSTEM**

* To conduct studies and analyses of an operational and technological nature, and
* To promote the exchange and development of methods and tools for operational analysis as applied to defense problems.

**EXISTING SYSTEM**:

In previous applications there we need to store the file in database and encrypt the file. Storing file in database is not secure so to overcome the existing system we developed this application.

**PROPOSED SYSTEM:**

In Proposed system we will not store the file in the database so there is no issue in unsecure of a file. The person who is having decryption key must also have the encrypted file to decrypt the file.

**CHAPTER-3**

**SYSTEM REQUIREMENT SPECIFICATION**

**Functional Requirements:**

By conducting the requirements analysis we listed out the requirements that are useful to restate the problem definition.

* Insert the image into database
* Split the image into no of parts.
* Merge the parts.
* Identify the image.
* Draw image manually.
* Maintain separate login for admin and operator.
* Maintain information about each criminal

**Module Description**

The application has the only one module

1.**User:**

User will login into the application by giving username and password and the valid mail id. After logging the user will upload the file and the file will be encrypted security key is send to mail id and if he wants to decrypt the file he need to enter the security key which is send to mail id and select the encrypted file.

**CHAPTER-4**

**ER-Diagram**

File upload

manage

View file

View file

owner

Manages

Admin

Decrypt file

**CHAPTER-5**

**SYSTEM REQUIREMENTS**

**HARDWARE REQUIREMENTS:**

* Processor - Pentium –III
* Speed - 1.1 GHz
* RAM - 256 MB (min)
* Hard Disk - 20 GB
* Floppy Drive - 1.44 MB
* Key Board - Standard Windows Keyboard
* Mouse - Two or Three Button Mouse
* Monitor - SVGA

**SOFTWARE REQUIREMENTS:**

* Operating System - Windows95/98/2000/XP
* Application Server - Tomcat5.0/6.X
* Front End - HTML, Java, Jsp
* Scripts - Java Script.
* Server side Script - Java Server Pages.
* Database - My sql
* Database Connectivity - JDBC



Fig-1 java virtual machine

You can think of Java byte codes as the machine code instructions for the Java Virtual Machine (Java VM). Every Java interpreter, whether it’s a development tool or a Web browser that can run applets, is an implementation of the Java VM. Java byte codes help make “write once, run anywhere” possible. You can compile your program into byte codes on any platform that has a Java compiler. The byte codes can then be run on any implementation of the Java VM. That means that as long as a computer has a Java VM, the same program written in the Java programming language can run on Windows 2000, a Solaris workstation, or on an iMac.



### The Java Platform

A platform is the hardware or software environment in which a program runs. We’ve already mentioned some of the most popular platforms like Windows 2000, Linux, Solaris, and MacOS. Most platforms can be described as a combination of the operating system and hardware. The Java platform differs from most other platforms in that it’s a software-only platform that runs on top of other hardware-based platforms.

The Java platform has two components:

* The Java Virtual Machine (Java VM)
* The Java Application Programming Interface (Java API)

You’ve already been introduced to the Java VM. It’s the base for the Java platform and is ported onto various hardware-based platforms.

The Java API is a large collection of ready-made software components that provide many useful capabilities, such as graphical user interface (GUI) widgets. The Java API is grouped into libraries of related classes and interfaces; these libraries are known as packages. The next section, What Can Java Technology Do? Highlights what functionality some of the packages in the Java API provide.

The following figure depicts a program that’s running on the Java platform. As the figure shows, the Java API and the virtual machine insulate the program from the hardware.



Native code is code that after you compile it, the compiled code runs on a specific hardware platform. As a platform-independent environment, the Java platform can be a bit slower than native code. However, smart compilers, well-tuned interpreters, and just-in-time byte code compilers can bring performance close to that of native code without threatening portability.

## What Can Java Technology Do?

The most common types of programs written in the Java programming language are applets and applications. If you’ve surfed the Web, you’re probably already familiar with applets. An applet is a program that adheres to certain conventions that allow it to run within a Java-enabled browser.

However, the Java programming language is not just for writing cute, entertaining applets for the Web. The general-purpose, high-level Java programming language is also a powerful software platform. Using the generous API, you can write many types of programs.

An application is a standalone program that runs directly on the Java platform. A special kind of application known as a server serves and supports clients on a network. Examples of servers are Web servers, proxy servers, mail servers, and print servers. Another specialized program is a servlet. A servlet can almost be thought of as an applet that runs on the server side. Java Servlets are a popular choice for building interactive web applications, replacing the use of CGI scripts. Servlets are similar to applets in that they are runtime extensions of applications. Instead of working in browsers, though, servlets run within Java Web servers, configuring or tailoring the server.

How does the API support all these kinds of programs? It does so with packages of software components that provides a wide range of functionality. Every full implementation of the Java platform gives you the following features:

* **The essentials**: Objects, strings, threads, numbers, input and output, data structures, system properties, date and time, and so on.
* **Applets**: The set of conventions used by applets.
* **Networking**: URLs, TCP (Transmission Control Protocol), UDP (User Data gram Protocol) sockets, and IP (Internet Protocol) addresses.
* **Internationalization**: Help for writing programs that can be localized for users worldwide. Programs can automatically adapt to specific locales and be displayed in the appropriate language.
* **Security**: Both low level and high level, including electronic signatures, public and private key management, access control, and certificates.
* **Software components**: Known as JavaBeansTM, can plug into existing component architectures.
* **Object serialization**: Allows lightweight persistence and communication via Remote Method Invocation (RMI).
* **Java Database Connectivity (JDBCTM)**: Provides uniform access to a wide range of relational databases.

The Java platform also has APIs for 2D and 3D graphics, accessibility, servers, collaboration, telephony, speech, animation, and more. The following figure depicts what is included in the Java 2 SDK.



### ODBC

Microsoft Open Database Connectivity (ODBC) is a standard programming interface for application developers and database systems providers. Before ODBC became a de facto standard for Windows programs to interface with database systems, programmers had to use proprietary languages for each database they wanted to connect to. Now, ODBC has made the choice of the database system almost irrelevant from a coding perspective, which is as it should be. Application developers have much more important things to worry about than the syntax that is needed to port their program from one database to another when business needs suddenly change.

Through the ODBC Administrator in Control Panel, you can specify the particular database that is associated with a data source that an ODBC application program is written to use. Think of an ODBC data source as a door with a name on it. Each door will lead you to a particular database. For example, the data source named Sales Figures might be a SQL Server database, whereas the Accounts Payable data source could refer to an Access database. The physical database referred to by a data source can reside anywhere on the LAN.

The ODBC system files are not installed on your system by Windows 95. Rather, they are installed when you setup a separate database application, such as SQL Server Client or Visual Basic 4.0. When the ODBC icon is installed in Control Panel, it uses a file called ODBCINST.DLL. It is also possible to administer your ODBC data sources through a stand-alone program called ODBCADM.EXE. There is a 16-bit and a 32-bit version of this program and each maintains a separate list of ODBC data sources.

From a programming perspective, the beauty of ODBC is that the application can be written to use the same set of function calls to interface with any data source, regardless of the database vendor. The source code of the application doesn’t change whether it talks to Oracle or SQL Server. We only mention these two as an example. There are ODBC drivers available for several dozen popular database systems. Even Excel spreadsheets and plain text files can be turned into data sources. The operating system uses the Registry information written by ODBC Administrator to determine which low-level ODBC drivers are needed to talk to the data source (such as the interface to Oracle or SQL Server). The loading of the ODBC drivers is transparent to the ODBC application program. In a client/server environment, the ODBC API even handles many of the network issues for the application programmer.

The advantages of this scheme are so numerous that you are probably thinking there must be some catch. The only disadvantage of ODBC is that it isn’t as efficient as talking directly to the native database interface. ODBC has had many detractors make the charge that it is too slow. Microsoft has always claimed that the critical factor in performance is the quality of the driver software that is used. In our humble opinion, this is true. The availability of good ODBC drivers has improved a great deal recently. And anyway, the criticism about performance is somewhat analogous to those who said that compilers would never match the speed of pure assembly language. Maybe not, but the compiler (or ODBC) gives you the opportunity to write cleaner programs, which means you finish sooner. Meanwhile, computers get faster every year.

**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. As you discovered earlier in this chapter, 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.

The remainder of this section will cover enough information about JDBC for you to know what it is about and how to use it effectively. This is by no means a complete overview of JDBC. That would fill an entire book.

### 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 you some insight as to why certain classes and functionalities behave the way they do. The eight design goals for JDBC are as follows:

1. **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.

1. **SQL Conformance**

SQL syntax varies as you move from database vendor to 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.

1. **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.
2. **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.

1. **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.

1. **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.

1. **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.

Java ha two things: a programming language and a platform. Java is a high-level programming language that is all of the following

Simple Architecture-neutral

Object-oriented Portable

Distributed High-performance

Interpreted multithreaded

Robust Dynamic

Secure

Java is also unusual in that each Java program is both compiled and interpreted. With a compile you translate a Java program into an intermediate language called Java byte codes the platform-independent code instruction is passed and run on the computer.

Compilation happens just once; interpretation occurs each time the program is executed. The figure illustrates how this works.

**JavaProgram**

**Compilers**

**Interpreter**

**My Program**

You can think of Java byte codes as the machine code instructions for the Java Virtual Machine (Java VM). Every Java interpreter, whether it’s a Java development tool or a Web browser that can run Java applets, is an implementation of the Java VM. The Java VM can also be implemented in hardware.

Java byte codes help make “write once, run anywhere” possible. You can compile your Java program into byte codes on my platform that has a Java compiler. The byte codes can then be run any implementation of the Java VM. For example, the same Java program can run Windows NT, Solaris,

1.MAP Visualization

Charts showing values that relate to geographical areas. Some examples include: (a) population density in each state of the United States, (b) income per capita for each country in Europe, (c) life expectancy in each country of the world. The tasks in this project include:

Sourcing freely redistributable vector outlines for the countries of the world, states/provinces in particular countries (USA in particular, but also other areas);

Creating an appropriate dataset interface (plus default implementation), a rendered, and integrating this with the existing XYPlot class in JFreeChart;

Testing, documenting, testing some more, documenting some more.

## 2. Time Series Chart Interactivity

Implement a new (to JFreeChart) feature for interactive time series charts --- to display a separate control that shows a small version of ALL the time series data, with a sliding "view" rectangle that allows you to select the subset of the time series data to display in the main chart.

## 3. Dashboards

There is currently a lot of interest in dashboard displays. Create a flexible dashboard mechanism that supports a subset of JFreeChart chart types (dials, pies, thermometers, bars, and lines/time series) that can be delivered easily via both Java Web Start and an applet.

## 4. Property Editors

The property editor mechanism in JFreeChart only handles a small subset of the properties that can be set for charts. Extend (or reimplement) this mechanism to provide greater end-user control over the appearance of the charts.

**What is a Java Web Application?**

A Java web application generates interactive web pages containing various types of markup language (HTML, XML, and so on) and dynamic content. It is typically comprised of web components such as JavaServer Pages (JSP), servlets and JavaBeans to modify and temporarily store data, interact with databases and web services, and render content in response to client requests.

Because many of the tasks involved in web application development can be repetitive or require a surplus of boilerplate code, web frameworks can be applied to alleviate the overhead associated with common activities. For example, many frameworks, such as JavaServer Faces, provide libraries for templating pages and session management, and often promote code reuse.

**What is Java EE?**

Java EE (Enterprise Edition) is a widely used platform containing a set of coordinated technologies that significantly reduce the cost and complexity of developing, deploying, and managing multi-tier, server-centric applications. Java EE builds upon the Java SE platform and provides a set of APIs (application programming interfaces) for developing and running portable, robust, scalable, reliable and secure server-side applications.

Some of the fundamental components of Java EE include:

* Enterprise JavaBeans (EJB): a managed, server-side component architecture used to encapsulate the business logic of an application. EJB technology enables rapid and simplified development of distributed, transactional, secure and portable applications based on Java technology.
* Java Persistence API (JPA): a framework that allows developers to manage data using object-relational mapping (ORM) in applications built on the Java Platform.

**JavaScript and Ajax Development**

JavaScript is an object-oriented scripting language primarily used in client-side interfaces for web applications. Ajax (Asynchronous JavaScript and XML) is a Web 2.0 technique that allows changes to occur in a web page without the need to perform a page refresh. JavaScript toolkits can be leveraged to implement Ajax-enabled components and functionality in web pages.

**Web Server and Client**

Web Server is a software that can process the client request and send the response back to the client. For example, Apache is one of the most widely used web server. Web Server runs on some physical machine and listens to client request on specific port.

A web client is a software that helps in communicating with the server. Some of the most widely used web clients are Firefox, Google Chrome, Safari etc. When we request something from server (through URL), web client takes care of creating a request and sending it to server and then parsing the server response and present it to the user.

**HTML and HTTP**

Web Server and Web Client are two separate softwares, so there should be some common language for communication. HTML is the common language between server and client and stands for **H**yper**T**ext**M**arkup **L**anguage.

Web server and client needs a common communication protocol, HTTP (**H**yper**T**ext**T**ransfer **P**rotocol) is the communication protocol between server and client. HTTP runs on top of TCP/IP communication protocol.

Some of the important parts of HTTP Request are:

* **HTTP Method** – action to be performed, usually GET, POST, PUT etc.
* **URL** – Page to access
* **Form Parameters** – similar to arguments in a java method, for example user,password details from login page.

Sample HTTP Request:

|  |  |
| --- | --- |
| 1  2  3 | GET /FirstServletProject/jsps/hello.jsp HTTP/1.1  Host: localhost:8080  Cache-Control: no-cache |

Some of the important parts of HTTP Response are:

* **Status Code** – an integer to indicate whether the request was success or not. Some of the well known status codes are 200 for success, 404 for Not Found and 403 for Access Forbidden.
* **Content Type** – text, html, image, pdf etc. Also known as MIME type
* **Content** – actual data that is rendered by client and shown to user.

**MIME Type or Content Type**: If you see above sample HTTP response header, it contains tag “Content-Type”. It’s also called MIME type and server sends it to client to let them know the kind of data it’s sending. It helps client in rendering the data for user. Some of the mostly used mime types are text/html, text/xml, application/xml etc.

### 

### Understanding URL

URL is acronym of Universal Resource Locator and it’s used to locate the server and resource. Every resource on the web has it’s own unique address. Let’s see parts of URL with an example.

**http://localhost:8080/FirstServletProject/jsps/hello.jsp**

**http://** – This is the first part of URL and provides the communication protocol to be used in server-client communication.

**localhost** – The unique address of the server, most of the times it’s the hostname of the server that maps to unique IP address. Sometimes multiple hostnames point to same IP addresses and web server virtual host takes care of sending request to the particular server instance.

**8080** – This is the port on which server is listening, it’s optional and if we don’t provide it in URL then request goes to the default port of the protocol. Port numbers 0 to 1023 are reserved ports for well known services, for example 80 for HTTP, 443 for HTTPS, 21 for FTP etc.

**FirstServletProject/jsps/hello.jsp** – Resource requested from server. It can be static html, pdf, JSP, servlets, PHP etc.

### 

### Why we need Servlet and JSPs?

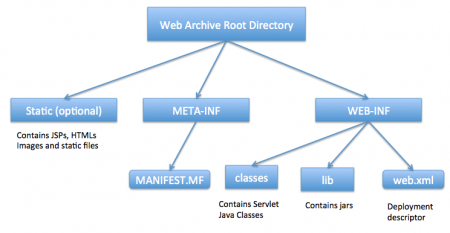
Web servers are good for static contents HTML pages but they don’t know how to generate dynamic content or how to save data into databases, so we need another tool that we can use to generate dynamic content. There are several programming languages for dynamic content like PHP, Python, Ruby on Rails, Java Servlets and JSPs.

Java Servlet and JSPs are server side technologies to extend the capability of web servers by providing support for dynamic response and data persistence.

### 

### Web Application Directory Structure

Java Web Applications are packaged as Web Archive (WAR) and it has a defined structure. You can export above dynamic web project as WAR file and unzip it to check the hierarchy. It will be something like below image.

[](http://www.journaldev.com/wp-content/uploads/2013/08/WAR-directory-structure.png)

**CHAPTER-6**

**SYSTEM DESIGN**

During analysis, the focus is on what needs to be done, independent of how it is done. During design, decisions are made about how the problem will be solved, first at high level, then at increasingly detailed levels.

System design is the first design stage in which the basic approach to solving the problem is selected. During system design, the overall structure and style are decided. The system architecture is the overall organization of the system into components called subsystems. The architecture provides the context in which more detailed decisions are made in later design stages. By making high level decisions that apply to the entire system, the system designer partitions the problem into subsystems so that further work can be done by several designers working independently on different subsystems.

The system designer must make the following decisions:

* Organize the system into subsystems.
* Identify the concurrency inherent in the problem.
* Allocate subsystems to processors and tasks.
* Choose an approach for management of data stores.
* Handle access to global resources.
* Choose the implementation of control in software.
* Handle boundary conditions.
* Set trade-off priorities.

**UML DIAGRAMS**

Global Use Case Diagrams:

Identification of actors:

Actor: Actor represents the role a user plays with respect to the system. An actor interacts with, but has no control over the use cases.

Graphical representation:



<<Actor name>>

An actor is someone or something that:

Interacts with or uses the system.

* Provides input to and receives information from the system.
* Is external to the system and has no control over the use cases.

Actors are discovered by examining:

* Who directly uses the system?
* Who is responsible for maintaining the system?

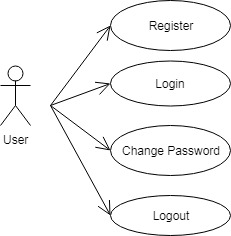
The actors identified in this system are:

1. System Administrator
2. Customer
3. Customer Care

Identification of usecases:

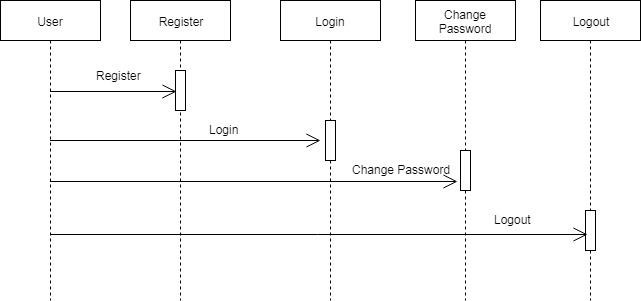
Construction of Usecase diagrams:

A use case diagram in the Unified Modeling Language (UML) is a type of behavioral diagram defined by and created from a Use-case analysis. Its purpose is to present a graphical overview of the functionality provided by a system in terms of actors, their goals (represented as use cases), and any dependencies between those use cases. The main purpose of a use case diagram is to show what system functions are performed for which actor. Roles of the actors in the system can be depicted.



**SEQUENCE DIAGRAMS**

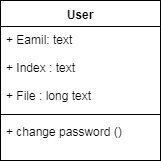
A sequence diagram in Unified Modeling Language (UML) is a kind of interaction diagram that shows how processes operate with one another and in what order. It is a construct of a Message Sequence Chart. Sequence diagrams are sometimes called event diagrams, event scenarios, and timing diagrams.

****

**Fig: Sequence diagram**

**CLASS DIAGRAM:**

In software engineering, a class diagram in the Unified Modeling Language (UML) is a type of static structure diagram that describes the structure of a system by showing the system's classes, their attributes, operations (or methods), and the relationships among the classes. It explains which class contains information.

****

**CHAPTER-7**

**SCREEN SHOTS**

**WELCOME**

**OWNER LOGIN**

**REGISTRATION**

**USER REGITRATION**

**UPLOAD FILE**

**VIEW FILE**

**VIEW REQUEST**

**DECRYPT FILE**

**CHAPTER-8**

**CONCLUSION**

The entire project has been developed and implemented as per the requirements stated by the user, it is found to be bug free as per the testing standards that is implemented. Any specification-untraced errors will be concentrated in the coming versions, which are planned to be developed in near future. The system at present does not take care of lower level check constraints in accessing the file types in distributed environments, which is to be considered in the future up gradations.

As per the present status the project developed is well equipped to handle the Central file system of an organization in a server and provide access to the users with various privileges as prescribed by the higher authorities in the password file.

**CHAPTER-9**

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