

Secure Software System for email

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Abstract— In today's business world there are just too few hours to get everything done, and, too many tasks that need to be done. When you do take the time for them, you lose opportunity to look at developing your business and keeping it moving ahead. By the end of day, you often wonder where the day went and what you have to show for it. More than ever, you need way to get more out of the time you have, devoting less of your resources to never ending paperwork and record keeping for your business. Freeing up time, and resources, that should be used more productively. Communication to other is an indispensable part of any organization and individual's life. And we all definitely needed a breakthrough from manual ledger entries and more advanced and easy communication.

Index Terms— DFD, Evaluation, Implementation, Maintenance, MVC, Testing, and, Validation.

1 INTRODUCTION

IN today's business world there are just too few hours to get everything done, and, too many tasks that need to be done.

When you do take the time for them, you lose opportunity to look at developing your business and keeping it moving ahead. By the end of day, you often wonder where the day went and what you have to show for it. More than ever, you need way to get more out of the time you have, devoting less of your resources to never ending paperwork and record keeping for your business. Freeing up time, and resources, that should be used more productively. Communication to other is an indispensable part of any organization and individual's life. And we all definitely needed a breakthrough from manual ledger entries and more advanced and easy communication.

Driven by deregulation, consolidation and information technology, the communication services industry is busy reshaping itself-moving away from traditional approach of communication, providing 24-hours-a-day communication to each other.

Now today people are starting communication via internet through different mail services. Our project is one of such type of mail services which provide easy and fast communication between different parties. Computer and communication technologies have brought revolutionary changes in the information acquisition, processing, storage, retrieval and propagation. Keeping in view of the latest trend in Information Technologies (IT), I have developed a windows-based software called Secure Software System (for email) Using JSP, which provides the total solutions for email Automation. Secure Software System (for email) is designed using Client-Server Architecture, which imparts extra strength to storage capacity, multiple accesses to single database, backup and re-

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store facilities. This software has been designed after a comprehensive study of different related functions practiced by

email service providers. The user-friendly GUI software is quiet easy to work with. It is Web application software, which can run on any Windows Operating System and various hardware platforms. Secure Software System (for email) assists in performing day-to-day operations of the email.

2 SYSTEM ANALYSIS

The system analysis can be divided into three major steps as follows:

1. Client's Requirement (Specification)
2. Evaluate the System Concept for Feasibility
3. Economical and Technical Analysis

1. Client's Requirement

Secure Software System (for email) believes in the fact that the efficiency of business is solely dependent on the performance of the Service Staffs. It depends upon, how fast they perform their communication task related to a customer/service, so that timely completion of their projects is achieved.

The main requirement of the Secure Software System (for email) is to provide facilities to add mail service users (new), instant access, and delivery of mails within the intranet; the application must be able to work with different types of clients and maintaining their day-to-day transaction by computerized system.

2. Evaluate the System Concept for Feasibility

While developing application we shall consider few important points like Secure Software System (for email) so that the project should not go beyond the estimates and budgets. We shall also consider technical terms like Performance Constraint that may affect the ability to achieve an acceptable system. This project will be well documented to support Management and end-users so that problem can be solved at the meantime when it requires.

3. Economical and Technical Analysis

Before developing system we shall carry out the cost benefit analysis so that some direct benefit can be gained. In Secure Software System (for email), application execution time and liability of the system is very important factor because if these parameters go beyond the limit, it directly affects the system performance. As this program works on Windows Platform, i.e. Windows 98/2000, it support multiprogramming concept. It is very user friendly as well, so a non-technical person can easily works on this system. This project can work with other applications without affecting their working. This project will also handle unexpected situation and inform errors to the user in the correct format, so that right decision can be taken at worst situation.

3 PROCESS LOGIC

3.1 Modules

- **New User:** In this module the new user is created in the database by asking the user to fill up his/her details. These details contain:
 - User ID
 - Password
 - Secret Question
 - Answer
 - Occupation

The user then submits these details and a new account are generated if the chosen user ID does not already exist. At this time the account is created and the user gets an auto generated mail from the administrator for the confirmation of new account containing the welcome message.

- **User Login:** Here already existing users login by giving their USER ID and PASSWORD and click on the Log In button. After this a new page is opened from where the user can see the mail and compose the mail.
- **Forgot Password:** This module is used if any user forgets his/her password. Here the user follows the FORGOT PASSWORD link display on the Login page. And then a new page is open where user submits his ID, 'Secret Question' and its 'Answer'. If the Answer matches then the server sends the secret password to the user.
- **Check Mail:** Here a user can check his mails by clicking on the check button. The mails which are already read are not bold while the mails which are not read are bold .Here all the mails are arranged according to the date.
- **Compose Mail:** Here the user can write and send mail to any user registered to the Secure Software System (For Email) server by giving the recipient Id and Subject.

- **Delete Mail:** Here the user can delete the mail by simply clicking onto the check button corresponding to the mail.
- **System Generated Mail:** In this module whenever a new user opens his account he will get a system generated mail as a confirmation of new account from administration.

Interaction of modules

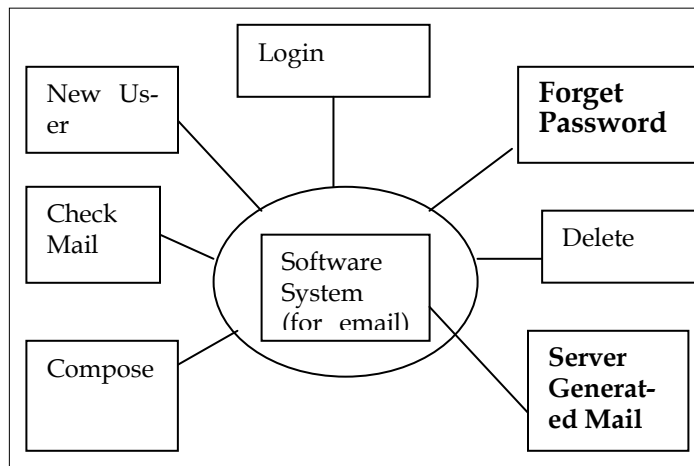


Fig 1: The modules of Secure Software System (for email) using

J2EE.

Table 1: Validation Checks

Presence Check	Checks that data has been entered into a field and that it has not been left blank. e.g., check that a surname is always entered into each record in a database of addresses.
Type Check	Checks that an entered value is of a particular type. e.g., check that age is numeric.
Length Check	Checks that an entered value e.g. surname is no longer than a set number of characters.
Range Check	Checks that an entered value falls within a particular range. For example the age of a person should be in the range 0 to 130 years.
Format Check	Checks that an entered value has a particular format. e.g., a new-style car registration number should consist of a letter followed by 1 to 3 numbers followed by 3 letters.
Check	A check digit is a digit attached to the end of a string of digits. It is calculated from the other digits and used to help ensure that the whole

Digit	string is inputted correctly.
Parity Check	Used in data communications to ensure that data is not corrupted when it is sent down a transmission medium such as a telephone line.

TDEV	Productivity	(Month)
Application Programs	PM = 2.4*(KDSI) 1.05	TDEV = 2.5*(PM) 0.38
Utility Programs	PM = 3.0*(KDSI) 1.12	TDEV = 2.5*(PM) 0.35
System Programs	PM = 3.6*(KDSI) 1.20	TDEV = 2.5*(PM) 0.32

Table 2: Weights for Features

	Simple	Average	Complex	Total
Outputs	4	5 (2)	7	10
Inquiries	4	5(1)	7 (1)	12
Inputs	3	4(1)	6 (1)	10
Files	7	10 (1)	15(1)	25
Interfaces	5	7	10	
Fp un-adjusted				57

Person Month: $PM = 2.4 * (KLOC) 1.05 = 2.4 * 2.1 1.05 = 5.2$
 Development Time (Months): $TDEV = 2.5 * (PM) 0.38 = 2.5 * 5.2 0.38 = 4.6$
 Average Staffing Levels: $ASL = PM / TDEV = 5.2/4.6 = 1.13$

3.2 System Characteristics

The Secure Software System (for email) includes following types of benefits:

1. **Cost Saving Benefits:** It leads to reduction in administrative and operational costs. For example, the size of the clerical staff, used in the support of communication activity, is reduced.
2. **Cost Avoidance benefits:** It eliminates user administrative and operational costs. For example, there is no need to hire addition staff in future to handle an administrative activity after the Secure Software System (for email) will be implemented.
3. **Improved Service level benefits:** Secure Software System (for email) will be beneficial, as it will perform all implemented activities very quickly. Providing mail enquiry information within few second is an example of this type of benefit.
4. **Improved Information Benefits:** The Secure Software System (for email) leads to better information for decision-making.

3.3 Technical Feasibility

Technical feasibility centers on the existing computer system hardware, software, etc. and to what extent it can support the proposed addition. The proposed system is implemented in Java Server Pages (**JSP**) as Front End for generating views; **Servlets** are used to develop the components, which are used to implement the Front Controller Design Pattern, SQL Server 2000 is used as the backend.

- **Does the necessary Technology exist today?**

While designing the system, it is kept in mind whether the application and software that are used in the system, are popular and existing in that area or not otherwise it may lead to a great difficulty and obtaining the results. **Secure Software System (for**

Table 3: Cost Estimation by Cocomo Model

	Programmer	Development Time
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email) is designed and implemented using the most popular open source products like SQL Server 2000 and Apache Tomcat which are renowned for quality.

- **System expandability**

The system is flexible i.e. It should be able to cope up with the change that are to be made according to the user's requirement. **Secure Software System** (for email) is designed using Model View Controller (MVC) model and Front Controller Design Pattern which gives it a highly decoupled architecture and making it very adaptable to changes in future.

3.4 Behavioral Feasibility

People are inherited resistant to change, and computers have been known to facilitate change. An estimate should be made of how strong a reaction the user staff is likely to have towards the development of a computerized system.

3.5 Operational Feasibility

The system has a Graphical User Interface (GUI) which interacts with the user and hides the internal complexities of the system. So the proposed system is easy to operate and thus the system is feasible operationally. Secure Software System (for email) is designed to be very user friendly thus making it very easy for layman to start operating quickly.

4 CONCLUSION

The Secure Software System (for email) integrates the necessary modules that are needed to successfully run your operation. This integration eliminates redundant data and redundant data entry. Organizations should run their business but rather provide them the timely information they need to make better decisions.

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