

**AN INTEGRATED APPROACH TO OPTIMIZING USERS FROM ONLINE
DATA RESOURCES USING CRYPTOGRAPHY AND NETWORK
TOPOLOGY MECHANISM**

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ABSTRACT

An Integrated Approach to Optimizing Users from Online Data Resources Using Cryptography and Network Topology Mechanism is basically a simulation based work in which fetching of a particular data from large number of data flow and generate a unique key in the form of cryptography and matching it on further references. This process will be based on mesh topology based network technology. The underline principle is the phenomenon of “An Integrated Approach to Optimizing Users from Online Data Resources Using Cryptography and Network Topology Mechanism” we can generate new patterns of data optimization techniques. Here large amount of data are proceed in daily manner so much data is need to proceed the existing technology is good but new one is needed always. So the research work is always going on different fields for better solution. In this process, the source of data methods of collection, the evaluation of the existing system and the organization structure of the system problem are presented. It includes specific methods which were used in order to achieve the objectives of the project, particular requirements for implementation of the project and a brief explanation of why such methods were used for implementing the proposed system, also included is a brief description of the current system of data optimization.

KEYWORDS: Data Optimization, Cryptography, Network Topology, Data Resources.

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INTRODUCTION

An Integrated Approach to Optimizing Users from Online Data Resources Using Cryptography and Network Topology Mechanism is basically a simulation based work in which fetching of a particular data from large number of data flow and generate a unique key in the form of cryptography and matching it on further references. This process will be based on mesh topology based network technology.

Cryptography: The art of protecting information by transforming it (encrypting it) into an unreadable format, called cipher text. Only those who possess a secret *key* can decipher (or decrypt) the message into plain text. Encrypted messages can sometimes be broken by cryptanalysis, also called *code breaking*, although modern cryptography techniques are virtually unbreakable.

As the Internet and other forms of electronic communication become more prevalent, electronic security is becoming increasingly important. Cryptography is used to protect e-mail messages, credit card information, and corporate data. One of the most popular cryptography systems used on the Internet is Pretty Good Privacy because it's effective and free. Cryptography systems can be broadly classified into symmetric-key systems that use a single key that both the sender and recipient have, and public-key systems that use two keys, a public key known to everyone and a private key that only the recipient of messages uses.

Network topology is the arrangement of the various elements (links, nodes, etc.) of a computer network. Essentially, it is the topological structure of a network, and may be depicted physically or logically. *Physical* topology refers to the placement of the network's various components, including device location and cable installation, while logical topology shows how data flows within a network, regardless of its physical design. Distances between nodes, physical interconnections, transmission rates, and/or signal types may differ between two networks, yet their topologies may be identical.

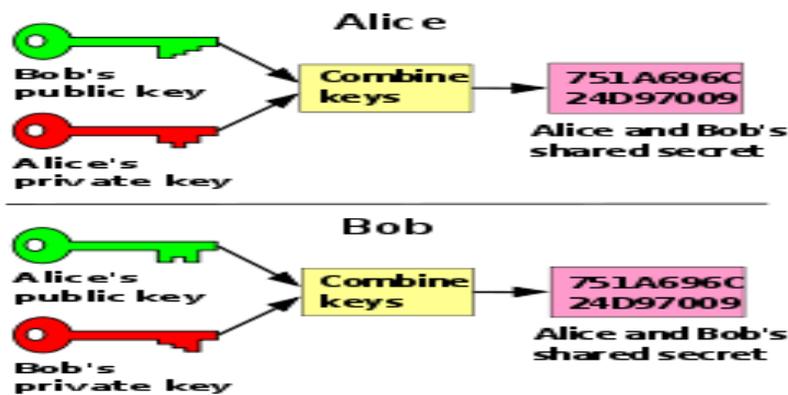


Fig: 1 Key Management Using Cryptography

MOTIVATION: The underline principle is the phenomenon of “An Integrated Approach to Optimizing Users from Online Data Resources Using Cryptography and Network Topology Mechanism” we can generate new patterns of data optimization techniques. Here large amount of data are proceed in daily manner so much data is need to proceed the existing technology is good but new one is needed always. So the research work is always going on different fields for better solution. Here the aim of “cryptography and network topology” is as follows:

- Fetching particular data of large number of database.
- Generate a unique key from cryptography techniques for security manner.
- Increasing the Efficiency of security.

Results should be reliable for different methods or technique Using asymmetric encryption (RSA) we want to develop simple encryption security tool. The software will be a web app along with a desktop application and have email/chat functions.

Security and integrity are imposed by using 'state of the art' Online software with initiatives to ensure the security and integrity of processes. I will design, and implement the optimization technique onto our secure server which also stores the database of eligible users. This database is removed from the server once an process is completed. **Security** of process is implemented by requiring users to provide authentication details before gaining access to

the online processing. Depending upon the information available through an database, and also depending upon the level of security required, varying levels of authentication may be applied. Obviously, the higher the level of authentication, the greater the level of security. Typically two or three levels of authentication are used. For example, a Member Number in association with a uniquely allocated secret Password or Personal Identification Number might be applied in the context of online process.

METHODOLOGY USED: In this process, the source of data methods of collection, the evaluation of the existing system and the organization structure of the system problem are presented. It includes specific methods which were used in order to achieve the objectives of the project, particular requirements for implementation of the project and a brief explanation of why such methods were used for implementing the proposed system, also included is a brief description of the current system of data optimization.

In this approach I will use: State management mechanism

- (i) Session Key Generation
- (ii) Cookies

Cryptography algorithm

- (i) Encryption/Decryption
- (ii) Public & private key

Ajax based service Mesh Topology

Tool used: - Visual Studio 2010 & sql server 2008 for database.

System Implementation Technologies

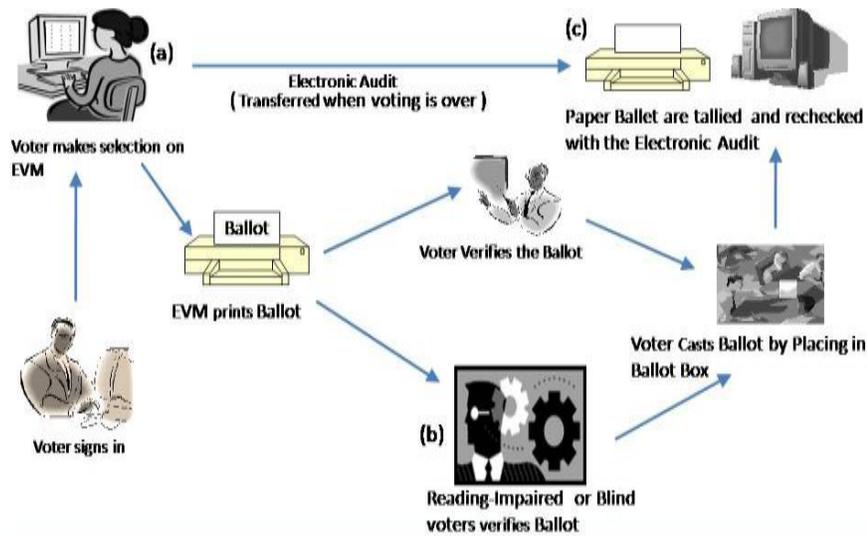
The optimization-based technique was developed as an online information system to offer users convenient access. Several tools used during implementation include the following:

SOFTWARE

- i. SQL DBMS-it allows combination, extraction, manipulation and organization of data in the voters' database. It is platform independent and therefore can be implemented and used across several such as Windows, Linux server and is compatible with various hardware mainframes. It is fast in performance, stable and provides business value at a low cost.
- ii. HTML -Hypertext Markup Language-This is currently the core of the web world, it is a language used to makeup web page. It is the glue that holds everything together. Although HTML was used for the implementation of the OVS, it is highly compatible with eXtensible HTML (XHTML) which is designed to be a replacement of HTML made to handle data and is also portable between different browsers and platforms with little or no alterations in code. Macromedia Dreamweaver is a prefer tool for designing HTML pages and that is the tool used in coming up with this OVS system.
- iii. Visual studio 2008 coding-This is for advanced user who find v.s.2008 codes easy to work with.
- iv. Testing is done via WAMPSEVER.
- v. Web browsers: Mozilla Firefox, Google chrome, Opera and Internet Explorer

AN EXAMPLE BASED ON ONLINE DATA RESOURCES (Proposed System): The election system is the pillar of the every democracy. The democratic administration is totally dependent on the results of the election. The election process provides the right to every citizen of a country to select a legitimate representative among themselves who can guide the democratic system towards the welfare of the society. The voting system has observed many effective changes over the past few decades, right from the traditional paper ballot voting to electronic voting and now towards the online voting. The voting system is improving step by step, advancement in the new system eliminates the drawbacks of the previous system. Every system tries to overcome the loop holes of the

previous system. The primary goal of this paper is to understand the traditional voting system with the recently proposed voting systems.



Components of Polling :
(a) Electronic Voting Station
(b) Ballot Verification
(c) Ballot Reconciliation

Fig 2: Online Voting System

Definitions of the quality characteristics are defined below: -

- Correctness - extent to which Program satisfies specifications, fulfils user's mission objectives
- Efficiency - amount of computing resources and code required to perform function
- Flexibility - effort needed to modify operational program
- Interoperability - effort needed to couple one system with another
- Reliability - extent to which program performs with required precision
- Reusability - extent to which it can be reused in another application
- Testability - effort needed to test to ensure performs as intended
- Usability - effort required to learn, operate, prepare input, and interpret output

ID	Characteristic	1	2	3	4	5	6	7	8	9	10	11	12
1	Correctness										*		
2	Efficiency										*		
3	Flexibility								*				
4	Integrity/Security											*	
5	Interoperability									*			
6	Maintainability											*	
7	Portability											*	
8	Reliability										*		
9	Reusability									*			
10	Testability									*			
11	Usability											*	
12	Availability											*	

Table 1: Quality Characteristics Table

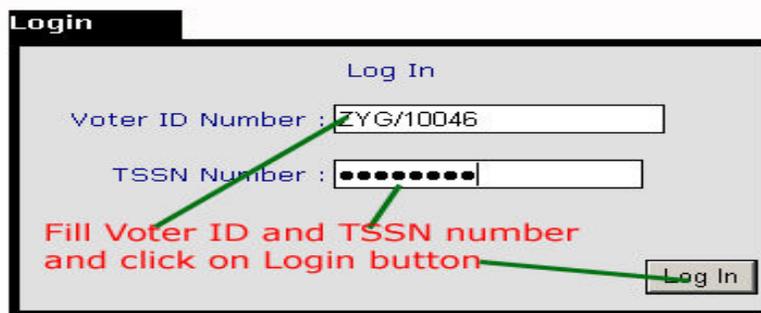


Fig 3: ID – Password generation



Fig 4:Vote generation System

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