

# An Environment for Supporting Collaboration of Distributed Team

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**Abstract-** To implement the project various services and platforms are used by the developer's team in order to interact with each other and to share the resources required for the project. the team needs to learn a new software tool to carry out each activity and learn each tool; it becomes too difficult to remember when the team uses more number of tools. in this project, we have integrated all the functionalities with some additional features. using this tool will lead to increase in efficiency and productivity of the distributed team. all the data of the teams project is stored at a central database which is located on cloud, hence the data will be available anytime anywhere. all the functionalities in this tool are well organized and we are trying to implement the user friendly interface. the team will be connected consistently and will have real time interaction with each other. the focus of our project is to the support a small developer's team interaction while developing the software. the primary function is to share information about project-related activities. the information sharing enables members to make quick decisions about project actions and goals. the developer's team can participate in real time and create software; also they can make constant changes to the code and release new versions of their software.

**Keywords-** Distributed teams, Database, Cloud Services

## I. INTRODUCTION

The Concept of distributed Team is a group of individuals who work across time, space and organizational boundaries connected by webs of communication technology. But practically, Distributed team is a group of People working on the same objective which are separated by geographical location whether that means working on different levels of the same building, or in a neighboring city, or in a totally different time zone. So, we have proposed this tool in which we are integrating all the functionalities required to work in the virtual environment.

## II. LITERATURE SURVEY

**1. Ali M. Sagheer, et.al 2011 [1]**, this paper provide us the Advanced encryption system, which is useful in secure transmission of file or messages. But we have observed that, if the mail-gateway wants to search a keyword "lunch" in the mail, it cannot search the contents of the file as it is encrypted so, it can't make routing decisions. The goal here is to give the gateway the ability to test whether "lunch" is keyword in mail, but the mail-gateway must not learn anything else about the mail.

**2. Fu-Kuo, et.al 2013 [3]** enables us to search encrypted keywords without compromising the security of the original data. In this paper, we address three important issues of PEKS scheme such as refreshing keywords,

removing secure channel and processing multiple keywords. So, in the paper we have removed the secured channel and constructed a new PEKS which is based on Identity Based Encryption (IBE). Punam V. Maitri, et.al 2014[9] using BRA algorithm secured file transmission is provided, where user sets time and frequency. The performance of file transmission is increased. It concludes that BRA algorithm is way better than AES algorithm as the data is transmitted with minimum delay. For increasing speed of encryption of data concept of multithreading is used.

**3. Tor Erlend Fgri, et.al 2016 [7]** we addressed the problems faced by the virtual distributed team, to overcome the issues, a web based working environment which is the result of analysis of the An Environment for Supporting Collaboration of Distributed Team. problem faced by distributed users. So the proposed tool is an integrative framework where the distributed users can share a common workspace.

## III. ARCHITECTURE DESCRIPTION

As the database will be accessible in every stage of operations, it must be well connected with all the functions of the tool. Admin will have all the right to manage the database and the user will be able to upload media and view or download the media resources. The

code section will be separated from the common shared media as project which is being developed.

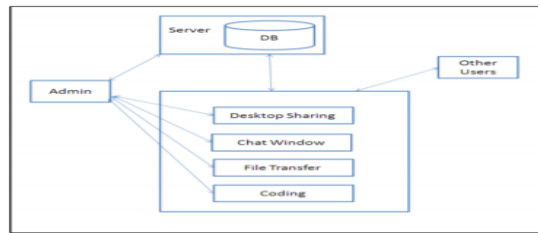


Fig.1 Basic System Architecture.

#### IV. ALGORITHM

There are various functionalities used in this tool for the interaction between different user like chatting, video conferencing and media sharing. To implement these functions, we need various algorithms such as PEKS algorithm, AES encryption algorithm, RSA algorithm, BRA algorithm and STL algorithm. We have analyzed them and according to our requirement following algorithms are important such as BRA algorithm for Image/video/audio compression and PEKS for secure retrieval of data from the cloud.

**1. Byte Rotation Algorithm (BRA) Algorithm** - The multiple encryption and multilevel encryption system provides sufficient security. But a security level is increased, the time for encryption and decryption along with the complexity of algorithm is also increased. Also speed and performance of these systems is low. This is the major cause of decreasing the speed and efficiency of the encryption system. In this work we will implement a new encryption algorithm Byte Rotation Algorithm which enhances the security as well as speed of the encryption scheme. We studied two algorithms for network security. One is Byte-Rotation algorithm (BRA) and second is Advance Encryption Standard algorithm (AES). In BRA algorithm random key generation technique and symmetric key is used. Implementation of both algorithms is done by java programming language. File encryption and decryption time is also calculated by .net programming language. The Byte-Rotation algorithm gives higher quality result as compared to AES algorithm.

1. It is a Symmetric Key Block Cipher Algorithm.
2. Each block size is of 16 bytes.
3. Size of Key matrix is 16 bytes.
4. Values of Key matrix are randomly selected.

Public Key Encryption with keyword Search (PEKS) A non-interactive searchable encryption scheme (PEKS) that is much secure against an dynamic chosen keyword attack gives rise to a ciphertext guessing leading to leak the private key which is used to encrypt the file, making it vulnerable to hackers. We define and construct a mechanism that enables Alice to provide a key to the gateway that enables the gateway to test whether the word

urgent is a keyword in the email without learning anything else about the email. We refer to this mechanism as Public Key Encryption with keyword Search. Consider an example, Suppose Bob wants to send encrypted email to Alice using Alice's public key. Both the contents of the email and the keywords are encrypted. In this case the mail gateway cannot see the keywords and hence cannot make routing decisions. As a result, the mobile people project is unable to process secure email without violating user privacy. Our goal is to enable Alice to give the gateway the ability to test whether "urgent" is a keyword in the email, but the gateway should learn nothing else about the email. More generally, Alice should be able to specify a few keywords that the mail gateway can search for, but learn nothing else about incoming mail. To do so, Bob encrypts his email using a standard public key system. He then appends to the resulting cipher text a Public-Key Encryption with keyword Search (PEKS) of each keyword. To send a message  $M$  with keywords  $W_1, \dots, W_m$  Bob sends  $E_{\text{pub}}(M) \parallel \text{PEKS}(\text{Apub}, W_1) \parallel \dots \parallel \text{PEKS}(\text{Apub}, W_m)$  Where  $\text{Apub}$  is Alice's public key.

The point of this form of encryption is that Alice can give the gateway a certain trapdoor  $TW$  that enables the gateway to test whether one of the keywords associated with the message is equal to the word  $W$  of Alice's choice. Given  $\text{PEKS}(\text{Apub}, W_0)$  and  $TW$  the gateway can test whether  $W = W_0$ . If  $W \neq W_0$  the gateway learns nothing more about  $W_0$ . Note that Alice and Bob do not communicate in this entire process. Bob generates the searchable encryption for  $W_0$  just given Alice's public key The problem is computationally difficult (NP-hard), however, there are efficient heuristic algorithms that are commonly employed and converge quickly to a local optimum. Online Compiler This project is best solution for programmers who want to do coding any time anywhere without any IDE. We are going to create online compiler and virtual editor to compile and run various programs in a group.

This distributed application will help development team to open and programming file and do changes, after changes anyone can compile and check whether there is any error, if there is no error then they can run and check program output there only. Algorithm to work on Online Compiler Create new program file and save with .c extension (if we are running c program) Write a program into that file and save it. Compile a code using compile button given on compiler page Check if there is any error. If no error then click to execute button to run and see the output I. CONCLUSION In this project, we have studied existing software tools and observed the problems faced by the users who are trying to interact efficiently with their peer members In order to remove these obstacles; we can merge all the required services which are necessary for development of the project. This will help the

distributed team to come together and develop a project from a single tool. Various different algorithms are analysed and compared for our web tool and various data encryption techniques and compression algorithms are used to make the process fast and secure.

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