

ANONYMOUS AND TRACEABLE GROUP DATA SHARING IN CLOUD COMPUTING

Submitted in partial fulfillment of the
requirements for the award of
Bachelor of Engineering degree in Computer Science and Engineering

By

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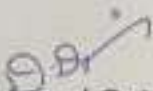
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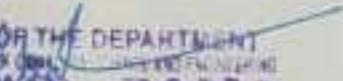
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BONAFIDE CERTIFICATE

This is to certify that this Project Report is the bonafide work **Mullapudi Venkata Sai Pavan** (Reg. no:40110793) and **Mullapudi Avinash** (Reg. no:40110791) who carried out the Project entitled "**ANONYMOUS AND TRACEABLE GROUP DATA SHARING IN CLOUD COMPUTING**" Under my supervision from November 2023 to April 2024.

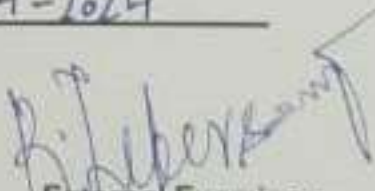

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ABSTRACT

Group data sharing in the cloud has become a topic of discussion in the neighborhood recent decades. With the popularity of the cloud Computing, how to achieve safe and Effective data sharing in cloud environments. An urgent problem to be solved. In addition, anonymity is how to achieve both and being recognizable is also a challenge Cloud for data sharing. This paper focuses on Enabling data sharing and storage. The only group in the cloud with high security and efficiency in an anonymous manner. By The key is to build agreement and group Signature, a novel identifiable group data the partnership scheme is proposed to support. Anonymous multiple users in public clouds. On the one hand, group members can communicate anonymously regarding Group signatures and real identities of Members can betray if necessary. On the other hand, a simple meeting key the key is based on the agreement Start sharing and storing group members secure their data. Note a symmetry A balanced imperfect block design is used for the key generation, it is substantial Reduces the burden on Simple meeting key. Both theoretical and experimental analyzes demonstrate it the proposed scheme is safe and effective for group data sharing in cloud computing. Android OS is a generally new versatile OS which has been consistently assuming control over increasingly more piece of the pie. Simple to utilize, simple to produce for, and open-source, it has gotten an after of engineers who need to make content for the general population. Distributed computing is pitched as the following significant advance for all types of normal data innovation use. From organizations, to non-benefit associations, to single clients, there is by all accounts different applications which can utilize distributed computing to offer better, quicker, and more brilliant registering. This paper means to join the two, assembling a cloud-based application for Android, offering clients the force of distributed computing in the palm. The UI can be constructed rapidly and essentially through XML or graphically, and once an application has been done it very well may be submitted to Android market. One meaning of distributed computing is that of a pool of computational assets, connected together to give a more noteworthy handling power. Androids graphical UIs are worked from the libraries remembered for the SDK, utilizing XML or graphical info.

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CHAPTER 1

INTRODUCTION

Compared to traditional information Sharing and Communication Technology, attracted cloud computing interests because most researchers are short Energy consumption and resource sharing Features. Cannot do cloud computing Provide customers clearly only unlimited Computing resources but also provide users apparently with unlimited storage resources [1] - [3]. Cloud storage is very high important services in cloud computing, it allows everyone to interact Types of electronic products. Also, Different forms of data information can do freely Flows in relation to cloud storage Service, for example, social networks, video Editing and home networks. A little, though focused on group data sharing in the cloud, it refers a condition that multiple users want Achieve information sharing in the group [4], [5] for cooperative purposes. Group data sharing is very practical Applications such as electronic health Networks [6], wireless body area networks [7], and electronic literature in libraries. There are two ways to share data in the cloud Storage. The first is a pattern from one to several, which Refers to the scenario where a client exists allows most people access to his / her data Clients [8]. The second is from the most to the most Sample, which indicates the situation. Many clients in the same group have authority Many clients at have access to their data at the same time.

Consider the following real-life scenario: In Research team in scientific research Organization, each member wants to share their Results and discoveries with their team Members. In this case, the members are the same the team can access all teams Results (e.g., innovative ideas, research Results and experimental data). However, Management and Challenges Increases local storage hassle and the workload of information Group. Outsourcing takes data or time fixes computational workload for cloud Management and challenge issues Occurs due to local storage and reduces Repetition of data information, which Reduces the burden on educational institutions even companies or individuals. However, Due to the reliability of the cloud, the Outsourced data may be leaked Damaged with. In many cases, there are customers only low control in the cloud Does not guarantee service and safety Stored data. In

addition, in some cases, the user prefers anonymously Achieve data sharing in the cloud. Our goal achieving anonymous data sharing under Cloud computing environment within the group with high security and efficiency.

To achieve this goal, the following Challenging factors need to be considered Observation. Our goal is to achieve anonymous data environment in a group manner with high security and efficiency. To achieve this goal, the following challenging problems should be taken into consideration. Firstly, an arbitrary and variable number of group members should be supported. In practical applications, the number of members in each group is arbitrary, and the dynamic joining and exiting of group members is frequent. A desired scheme not only supports the participation of any number of users but also supports efficient key and data updating. The UI can be constructed rapidly and essentially through XML or graphically, and once an application has been done it very well may be submitted to Android market, an entrance through which designers can make their manifestations accessible to Android clients, either free or for benefit. Distributed computing has been seen in a few structures. There has been no single view that has firmly become the undeniable applicant; anyway, there are some regular components between them all. The most glaring of these is that it is a type of conveyed registering, in that unmistakably independent frameworks connect together to shape a cloud. Additionally, there is a thought of on-the-fly versatility, that machines can join and leave the cloud as required. One meaning of distributed computing is that of a pool of computational assets, connected together to give a more noteworthy handling power. These are projects which include allies introducing programming on PCs at home, which associate, when inactive, to their particular mists over the web and figure little pieces of complex logical figuring. Another utilization of the term is to give some type of information adjusting. This undertaking would give a steady stage to empower cooperation through record sharing. To this end, documents might be transferred by one client and accessible to another, all rearranged through a simple to utilize application on an Android gadget. Another difficult issue looked by distributed computing is honesty. Respectability of information intends to ensure that the information has not been changed by an unapproved individual or in an unapproved way It is a strategy for guaranteeing.

CHAPTER 2

LITERATURE REVIEW

[1] Title: "An efficient public auditing protocol with novel dynamic structure for cloud data", *IEEE Trans. Inf. Forensics Security*, vol. 12, no. 10, pp. 2402-2415, Oct. 2017..

Author: J. Shen, J. Shen, X. Chen, X. Huang and W. Susilo

Description: Secured storage system is a critical component in cloud computing. Cloud clients use cloud auditing schemes to verify the integrity of data stored in the cloud. But with the exposure of the auditing secret key to the Cloud Service Provider, cloud auditing becomes unsuccessful, however strong the auditing schemes may be. Therefore, it is essential to prevent the exposure of auditing secret keys, and even if it happens, it is necessary to minimize the damage caused. The existing cloud auditing schemes that are strongly resilient to key exposures are based on Public Key Infrastructure and so have challenges of certificate management/verification. These schemes also incur high computation time during integrity verification of the data blocks. The Identity-based schemes eliminate the usage of certificates but limit the damage due to key exposure, only in time periods earlier to the time period of the exposed key. Some of the key exposure resilient schemes do not provide support for batch auditing. In this paper, an Identity-based Provable Data Possession scheme is proposed.

[2] Title: ".Information Security, Privacy, Availability and Integrity in Cloud Computing: Issues and Current Solutions", in *International Journal of Advanced Computer Science and Applications*, Vol. 7, No. 4, 2016

Author: Master Aldossary, William Allen

Description: With the rapid development of cloud services, the techniques for securely outsourcing the prohibitively expensive computations to entrusted servers are getting more and more attention in the scientific community. Exponentiations modulo a large prime have been considered the most expensive operations in discrete-logarithm-based cryptographic protocols, and they may be burdensome for the resource-limited devices such as RFID tags or smartcards. Therefore, it is important to present an efficient method to securely outsource such operations to (entrusted) cloud servers. In

this paper, the proposed scheme is proven secure against adaptively chosen-cipher text attacks, which is widely recognized as a standard security notion. Extensive performance analysis indicates that the proposed scheme is secure and efficient

[3] Title: “Enabling cloud storage auditing with key-exposure resistance,” *IEEE Trans. Inf. Forensics Security*, vol. 10, no. 6, pp. 1167–1179, Jun. 2015.

Author: J. Yu, K. Ren, C. Wang, and V. Varadharajan

Description: algorithm for (variable-exponent, variable-base) exponentiation modulo a prime in the two untrusted program model. Compared with the state-of-the-art algorithm, the proposed algorithm is superior in both efficiency and check ability. Based on this algorithm, we show how to achieve outsource-secure Cramer-Shoup encryptions and Schnor signatures. We then propose the first efficient outsource-secure algorithm for simultaneous modular exponentiations. Finally, we provide the experimental evaluation that demonstrates the efficiency and effectiveness of the proposed outsourcing algorithms and schemes. It protects the security of Identity-based cloud storage auditing in time periods both earlier and later to the time period of the exposed key. It also provides support for batch auditing. Analysis shows that the proposed scheme is resistant to the replace attack of the Cloud Service Provider, preserves the data privacy against the Third Party Auditor, and can efficiently verify the correctness of data

[4] Title: “New algorithms for secure outsourcing of modular exponentiations,” *IEEE Trans* vol. 25, no. 9, pp. 2386–2396, Sep. 2014.

Author: TIX. Chen, J. Li, J. Ma, Q. Tang, and W. Lou

Description: Data sharing becomes an exceptionally attractive service supplied by cloud computing platforms because of its convenience and economy. As a potential technique for realizing fine grained data sharing, attribute-based encryption (ABE) has drawn wide attentions. However, most of the existing ABE solutions suffer from the disadvantages of high computation overhead and weak data security, which has severely impeded resource-constrained mobile devices to customize the service. The problem of simultaneously achieving fine-graininess, high efficiency on the data owner’s side, and standard data confidentiality of cloud data sharing actually still remains unresolved. This paper addresses this challenging issue by proposing a new attribute-based data sharing scheme suitable for resource-limited mobile users in cloud

computing. The proposed scheme eliminates a majority of the computation task by adding system public parameters besides moving partial encryption computation offline. In addition, a public cipher text test phase is performed before the decryption phase, which eliminates most of computation overhead due to illegitimate cipher texts. For the sake of data security, a Chameleon hash function is used to generate an immediate cipher text, which will be blinded by the offline cipher texts to obtain the final online cipher texts.

[5] Title: "Time based proxy re-encryption scheme for secure data sharing in a cloud environment," *Inf.Sci.*, vol. 258,pp. 355–370, Feb. 2014

Author: Q. Liu, G. Wang, and J. Wu,

Description: Data sharing in cloud computing enables multiple participants to freely share the group data, which improves the efficiency of work in cooperative environments and has widespread potential applications. However, how to ensure the security of data sharing within a group and how to efficiently share the outsourced data in a group manner are formidable challenges. Note that key agreement protocols have played a very important role in secure and efficient group data sharing in cloud computing. In this paper, by taking advantage of the symmetric balanced incomplete block design (SBIBD), we present a novel block design-based key agreement protocol that supports multiple participants, which can flexibly extend the number of participants in a cloud environment according to the structure of the block design. Based on the proposed group data sharing model, we present general formulas for generating the common conference key IC for multiple participants. Note that by benefiting from the $(v, k + 1, 1)$ -block design, the computational complexity of the proposed protocol linearly increases with the number of participants and the communication complexity is greatly reduced. In addition, the fault tolerance property of our protocol enables the group data sharing in cloud computing to withstand different key attacks, which is similar to Yi's protocol.

CHAPTER 3

REQUIREMENTS ANALYSIS

3.1 FEASIBILITY STUDY/RISK ANALYSIS OF THE PROJECT

The feasibility of the project is analyzed in this phase and business proposal is put forth with a very general plan for the project and some cost estimates. During system analysis the feasibility study of the proposed system is to be carried out. This is to ensure that the proposed system is not a burden to the company. For feasibility analysis, some understanding of the major requirements for the system is essential.

Three key considerations involved in the feasibility analysis are

- ◆ ECONOMICAL FEASIBILITY
- ◆ TECHNICAL FEASIBILITY
- ◆ SOCIAL FEASIBILITY

ECONOMICAL FEASIBILITY:

This study is carried out to check the economic impact that the system will have on the organization. The amount of fund that the company can pour into the research and development of the system is limited. The expenditures must be justified. Thus, the developed system as well within the budget and this was achieved because most of the technologies used are freely available. Only the customized products had to be purchased.

TECHNICAL FEASIBILITY:

This study is carried out to check the technical feasibility, that is, the technical requirements of the system. Any system developed must not have a high demand on the available technical resources. This will lead to high demands on the available technical resources. This will lead to high demands being placed on the client. The developed system must have a modest requirement, as only minimal or null changes are required for implementing this system.

SOCIAL FEASIBILITY:

The aspect of study is to check the level of acceptance of the system by the user. This includes the process of training the user to use the system efficiently. The user must not feel threatened by the system, instead must accept it as a necessity. The level of acceptance by the users solely depends on the methods that are employed to educate the user about the system and to make him familiar with it. His level of confidence must be raised so that he is also able to make some constructive criticism, which is welcomed, as he is the final user of the system.

3.2 SOFTWARE REQUIREMENTS SPECIFICATION DOCUMENT

- Operating System : Windows 7/8/10
- Application Server : Tomcat 9.0
- Front End : HTML, JSP
- Scripts : JavaScript.
- Server side Script : Java Server Pages
- Database : My SQL 6.0
- Database Connectivity : JDBC

3.3 UML DIAGRAMS:

UML stands for Unified Modeling Language. UML is a standardized general-purpose modeling language in the field of object-oriented software engineering. The standard is managed, and was created by, the Object Management Group.

The goal is for UML to become a common language for creating models of object-oriented computer software. In its current form UML is comprised of two major components: a Meta-model and a notation. In the future, some form of method or process may also be added to; or associated with, UML.

The UML is a very important part of developing objects oriented software and the software development process. The UML uses mostly graphical notations to express the design of software projects.



FIG NO:3.3.1 USE CASE 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.

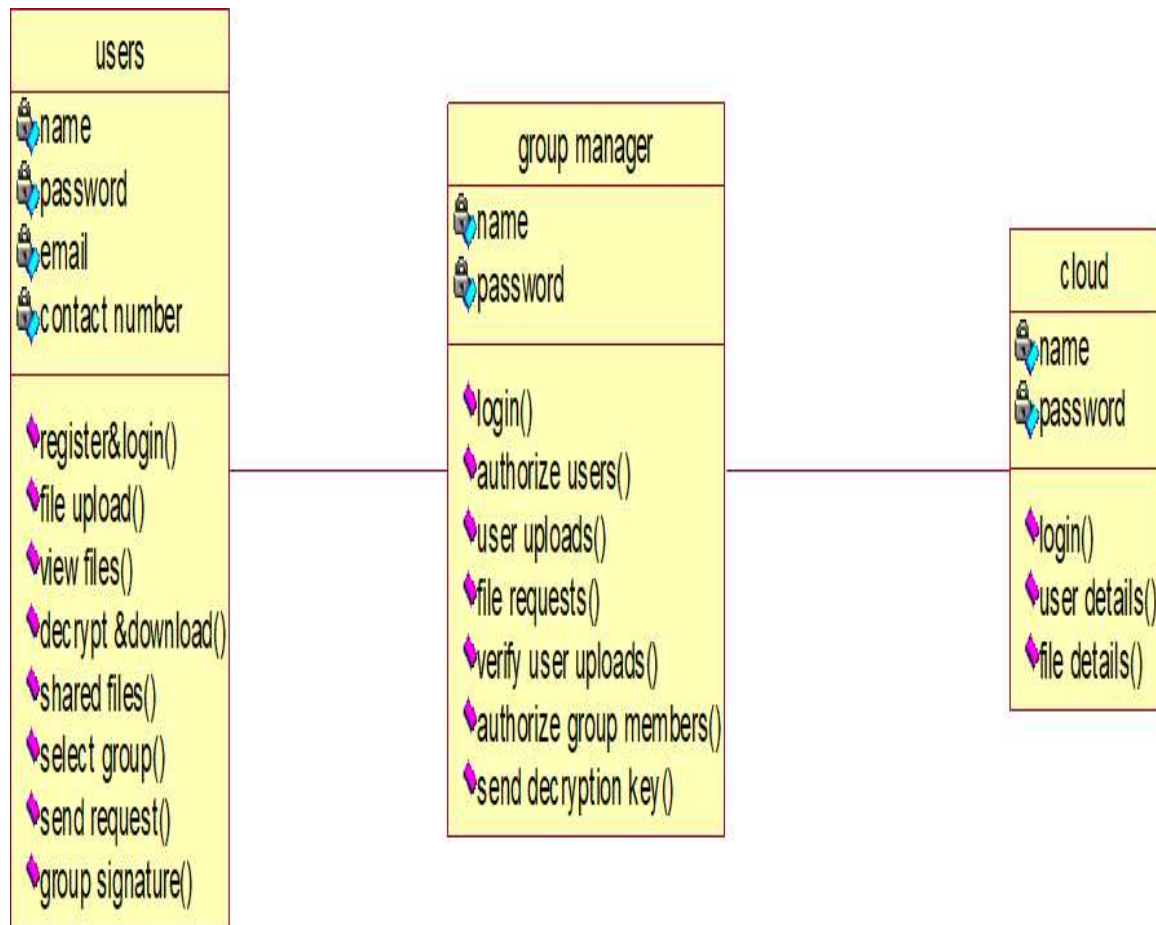


FIG NO:3.3.2 CLASS DIAGRAM

SEQUENCE DIAGRAM:

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.

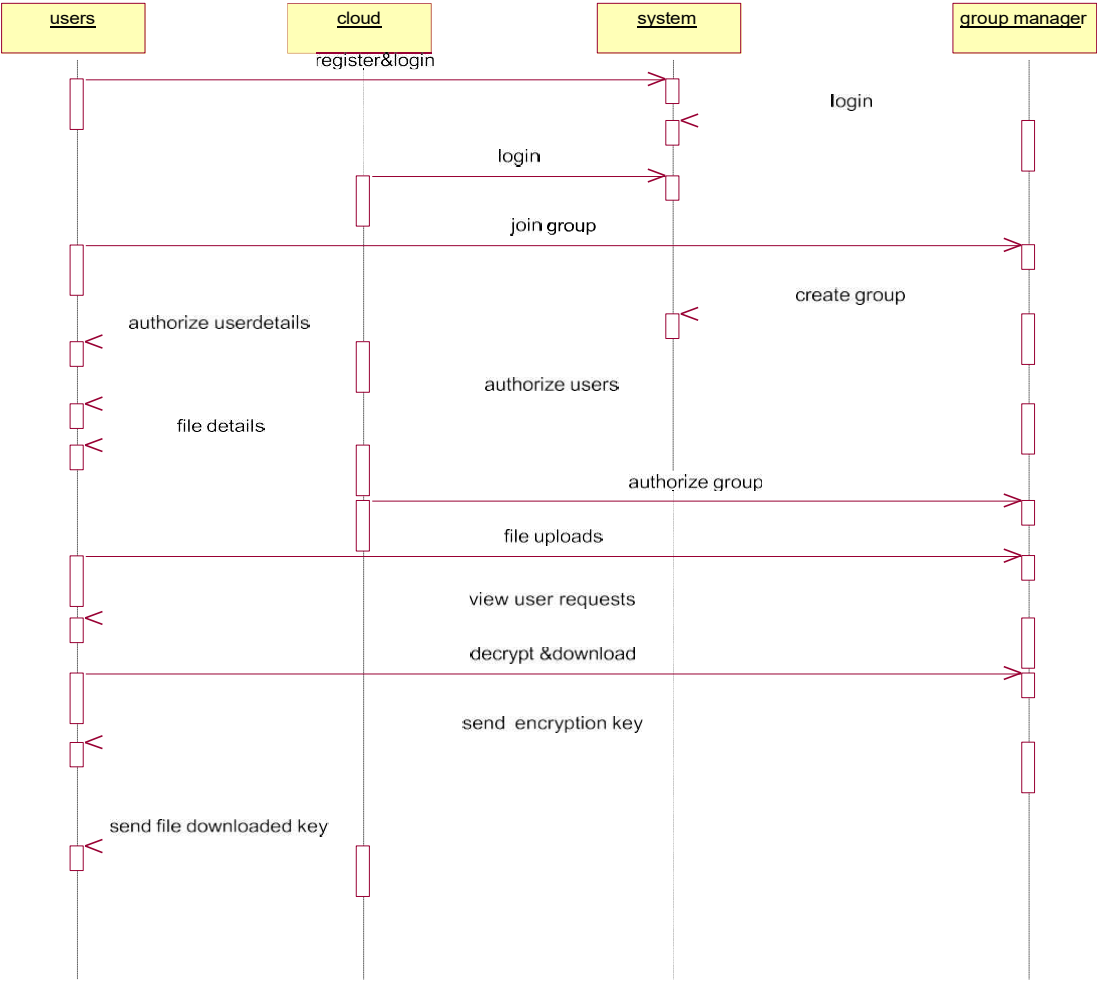


FIG NO3.3.3 SEQUENCE DIAGRAM

COLLABORATION DIAGRAM:

In collaboration diagram the method call sequence is indicated by some numbering technique as shown below. The number indicates how the methods are called one after another. We have taken the same order management system to describe the collaboration diagram. The method calls are similar to that of a sequence diagram. But the difference is that the sequence diagram does not describe the object organization whereas the collaboration diagram shows the object organization.

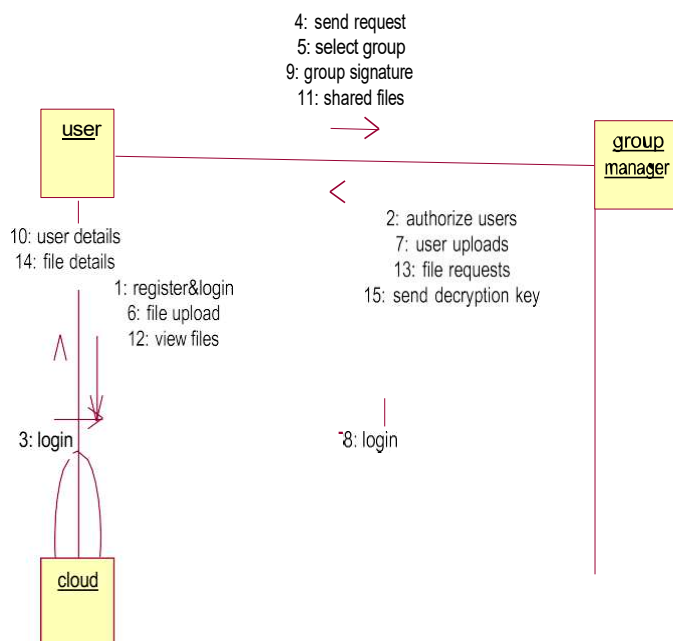


FIG NO:3.3.4 COLLABORATION DIAGRAM

ACTIVITY DIAGRAM:

Activity diagrams are graphical representations of workflows of stepwise activities and actions with support for choice, iteration and concurrency. In the Unified Modeling Language, activity diagrams can be used to describe the business and operational step-by-step workflows of components in a system. An activity diagram shows the overall flow of control.

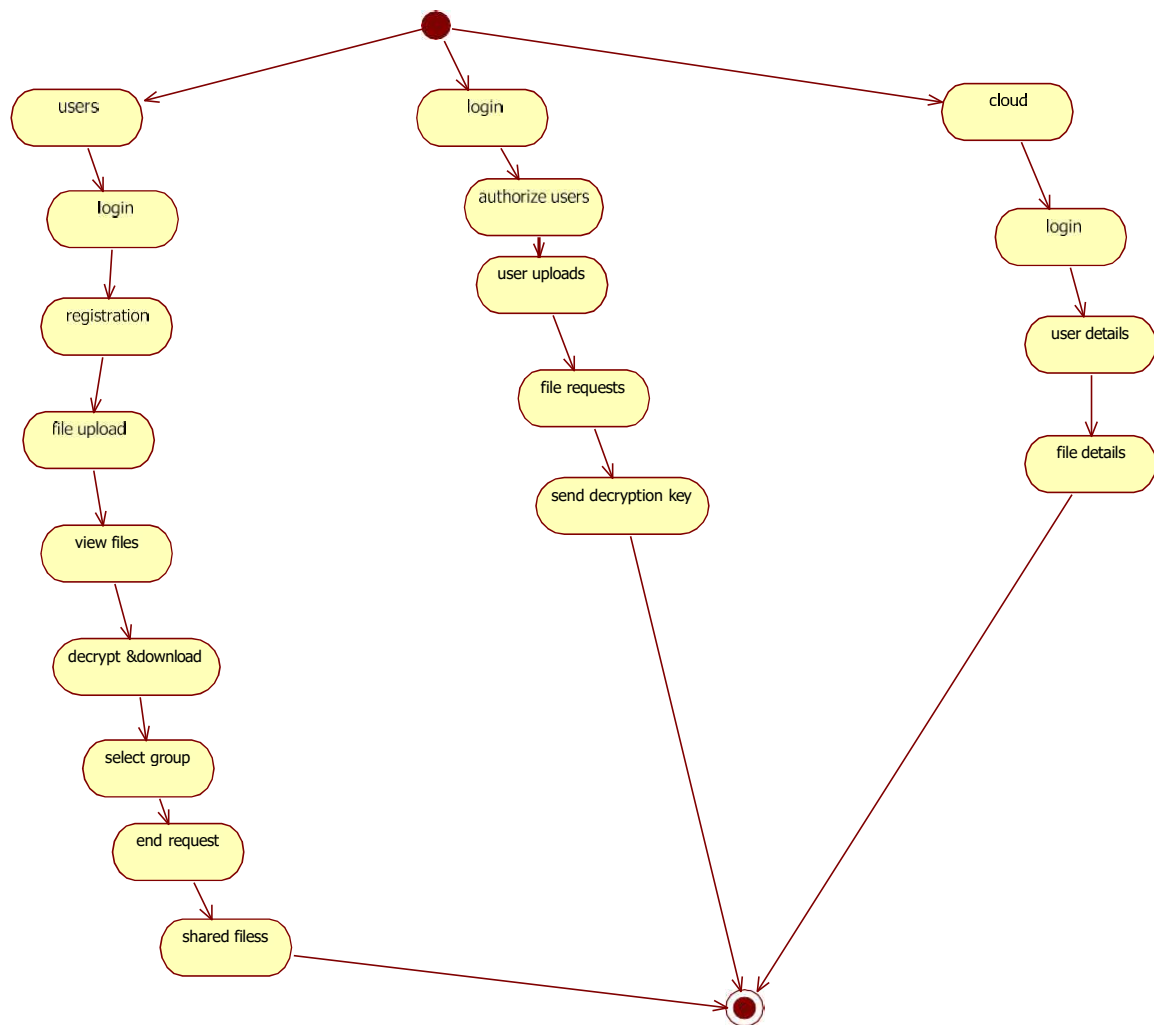


FIG NO:3.3.5 ACTIVITY DIAGRAM

COMPONENT DIAGRAM:

Component diagrams are used to describe the physical artifacts of a system. This artifact includes files, executables, libraries etc. So, the purpose of this diagram is different, Component diagrams are used during the implementation phase of an application. But it is prepared well in advance to visualize the implementation details. Initially the system is designed using different UML diagrams and then when the artifacts are ready component diagrams are used to get an idea of the implementation

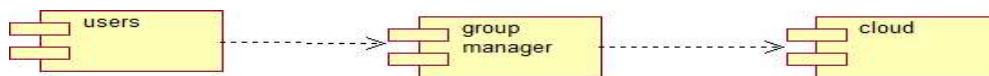


FIG NO:3.3.6 COMPONENT DIAGRAM

DEPLOYMENT DIAGRAM:

Deployment diagram represents the deployment view of a system. It is related to the component diagram. Because the components are deployed using the deployment diagrams. A deployment diagram consists of nodes. Nodes are nothing but physical hard wares used to deploy the application.



FIG NO:3.3.7 DEPLOYMENT DIAGRAM

CHAPTER 4

DESCRIPTION OF PROPOSED SYSTEM

4.1 SELECTED METHODOLOGY/PROCESS MODEL:

To address the above challenges, we Display novel identifiable group data Partnership scheme for cloud computing Recognizable and anonymous. The There are major contributions to this paper. The following.

Arbitrary number of users and Dynamic changes are supported:

Fix arbitrary number of users in Real applications, we introduce the concept Volunteer, which is used to satisfy Specific structure of SBIBD The number of users is rather arbitrary Is limited by the value of prime k . Also, in real cloud storage applications, Customers can join or go free. Proposed the scheme can effectively support dynamics User changes regarding accessibility Control and share many data from many Samples.

The Confidentiality of the Outsourced Data Is Preserved:

In our scheme, the outsourced data are encrypted with a common conference key prior to being uploaded. Attacks or the cloud having no access to the common conference key cannot reveal any information of the data stored in the cloud. The security of the encryption key is based on elliptic curve cryptography (ECC) and the bilinear Diffie-Hellman (BDH) assumption. Consequently, users can safely exchange data with others under the semi-trusted cloud.

Traceability Under an Anonymous Environment Is Achieved by Our Scheme:

With respect to the key agreement, every user in the cloud is able to freely share data with other users. Moreover, users can exchange information in the cloud anonymously with respect to the group signature. Note that the group manager can reveal the real identity of the data owner based on the group signature bound with the data when a dispute occurs.

Authentication Services and Fault-Tolerant Property Are Provided:

During the key agreement, each member exchange messages along with the group signature to declare that their identity is valid. Furthermore, the uploaded data file will be bound with the group signature such that the cloud can verify the validity of the file. In addition, the fault- tolerant property is supported in our scheme, which guarantees

that malicious users can be identified and removed such that a unique common conference key can be derived.

- **Requirement Gathering and analysis** – all possible requirements of the system to be developed are captured in this phase and documented in a requirement specification document.
- **System Design** – the requirement specifications from first phase are studied in this phase and the system design is prepared. This system design helps in specifying hardware and system requirements and helps in defining the overall system architecture.
- **Implementation** – with inputs from the system design, the system is first developed in small programs called units, which are integrated in the next phase. Each unit is developed and tested for its functionality, which is referred to as Unit Testing.
- **Integration and Testing** – All the units developed in the implementation phase are integrated into a system after testing of each unit. Post integration the entire system is tested for any faults and failures.
- **Deployment of system** – Once the functional and non-functional testing is done; the product is deployed in the customer environment or released into the market.
- **Maintenance** – There are some issues which come up in the client environment. To fix those issues, patches are released. Also, to enhance the product some better versions are released. Maintenance is done to deliver these changes in the customer environment. The feasibility of the project is analyzed in this phase and business proposal is put forth with a very general plan for the project and some cost estimates. During system analysis the feasibility study of the proposed system is to be carried out. This is to ensure that the proposed system is not a burden to the company. For feasibility analysis, some understanding of the major requirements for the system is essential.

4.2 ARCHITECTURE/OVERALL DESIGN OF PROPOSED SYSTEM

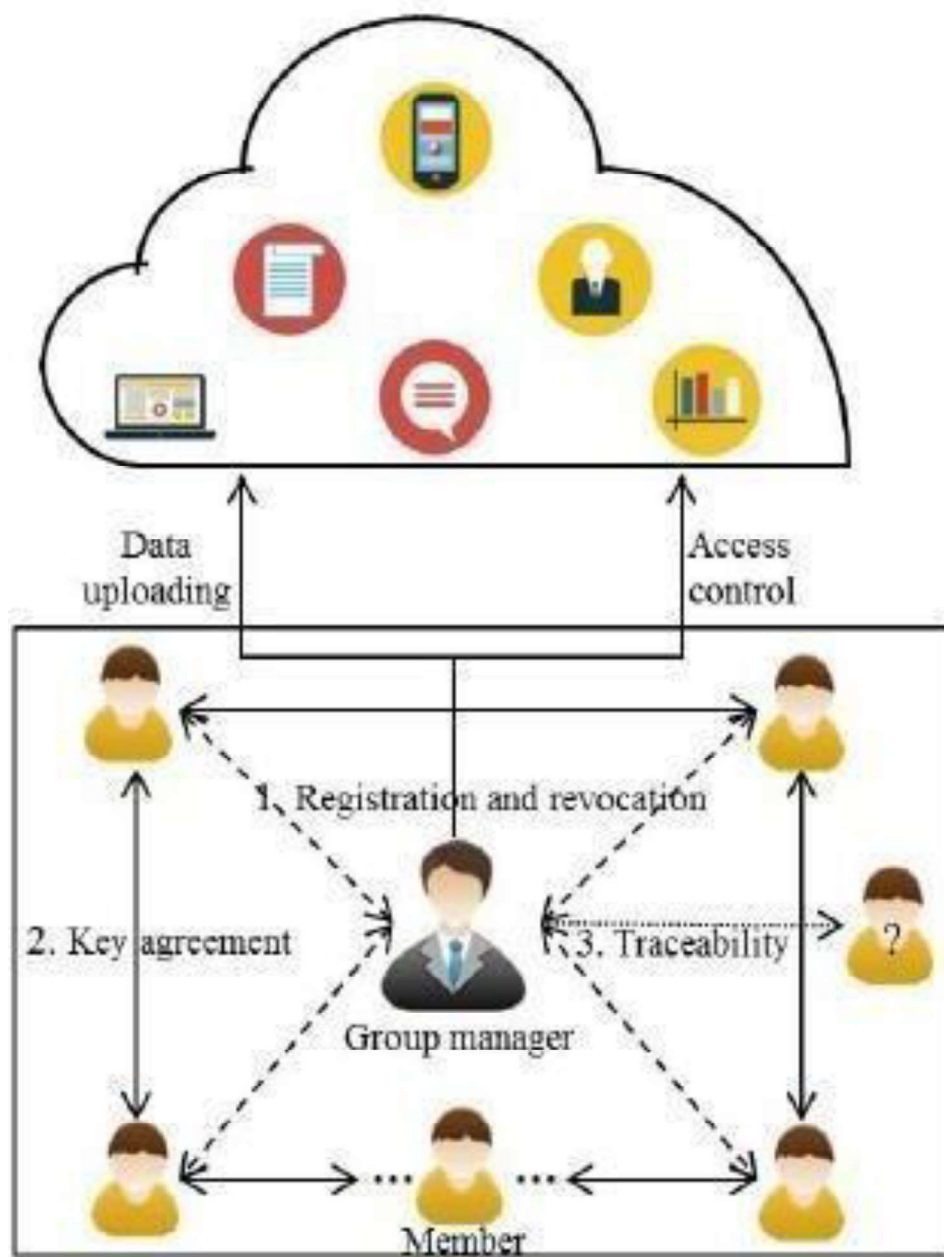


FIG NO:4.2 ARCHITECTURE OF PROPOSED SYSTEM

4.3 DESCRIPTION OF SOFTWARE FOR IMPLEMENTATION:

Java technology is both a programming language and a platform.

The Java Programming Language:

The Java programming language is a high-level language that can be characterized by all of the following buzzwords:

- Simple
- Architecture neutral
- Object oriented
- Portable
- Distributed
- High performance
- Interpreted
- Multithreaded
- Robust
- Dynamic
- Secure

With most programming languages, you either compile or interpret a program so that you can run it on your computer. The Java programming language is unusual in that a program is both compiled and interpreted. With the compiler, first you translate a program into an intermediate language called *Java byte codes* —the platform-independent codes interpreted by the interpreter on the Java platform. The interpreter parses and runs each Java byte code instruction on the computer. Compilation

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

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.

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.

4.4 MODULES

USER:

Users are composed of a series of users based on the SBIBD communication model. In our scheme, members are people with the same interests (e.g., bidder, doctors, and businessmen) and they want to share data in the cloud. The most worrying problem when users store data in the cloud server is the confidentiality of the outsourced data. In our system, users of the same group conduct a key agreement.

CLOUD:

Cloud provides users with seemingly unlimited storage services. In addition to providing efficient and convenient storage services for users, the cloud can also provide data sharing services. However, the cloud has the characteristic of honest but curious. In other words, the cloud will not deliberately delete or modify the uploaded data of users,

but it will be curious to understand the contents of the stored data and the user's identity. The cloud is a semi trusted party in our scheme.

GROUP MANAGER:

Group manager is responsible for generating system parameters, managing group members (i.e., uploading members' encrypted data, authorizing group members, revealing the real identity of a member) and for the fault tolerance detection. The group manager in our scheme is a fully trusted third party to both the cloud and group members

Firstly, users with the same interest register at the group manager so as to share data in the cloud. In addition, user revocation is also performed by the group manager. Secondly, all members of the group based on the SBIBD structure jointly negotiate a common session key, which can be used to encrypt or decrypt the outsourced data. Finally, when a dispute occurs, the group manager is able to reveal the real identity of the group member. Note that in our system model, data uploading and access control are performed by the group manager.

Cloud computing has emerged as a transformative technology, revolutionizing the way businesses and individuals' access and utilize computing resources. At its core, cloud computing involves the delivery of a wide range of computing services over the internet, including servers, storage, databases, networking, software, and analytics. This shift from traditional on-premises infrastructure to cloud-based solutions has led to significant benefits and opportunities across various sectors.

One of the key advantages of cloud computing is its scalability. With cloud services, organizations can easily scale their computing resources up or down based on demand, allowing them to efficiently manage fluctuating workloads without the need for extensive infrastructure investments. This scalability not only improves resource utilization but also enables businesses to quickly adapt to changing market conditions and seize new opportunities.

CHAPTER 5

IMPLEMENTATION DETAILS

5.1 DEVELOPMENT AND DEPLOYMENT SETUP

This will consider the particular decisions open to complete the assignment application. By looking at the central focus and inadequacies of each approach, an informed decision can be made as for how to develop a specialist program. This part will focus in on the Android SDK, likely advances for specialist side assistance, and data structures for sending information

The Primary goals in the development and deployment setup:

1. Provide users a ready-to-use, expressive visual modeling Language so that they can develop and exchange meaningful models.
2. Provide extendibility and specialization mechanisms to extend the core concepts.
3. Be independent of particular programming languages and development process.
4. Provide a formal basis for understanding the modeling language.
5. Encourage the growth of OO tools market.
6. Support higher level development concepts such as collaborations, frameworks, patterns and components.
7. Integrate best practices.
8. **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 Datagram 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 JavaBeans™, can plug into existing component architectures.

Object serialization: Allows lightweight persistence and communication via Remote Method Invocation (RMI).

Java Database Connectivity (JDBC™): 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.

5.2 ALGORITHMS

AES encryption, or **advanced encryption standard**, is a type of cipher that protects the transfer of data online.

Currently, AES is one of the best encryption protocols available, as it flawlessly combines speed and security, letting us enjoy our daily online activities without any disruption.

Having in mind its good qualities, it comes as no surprise that AES has become the industry standard for encryption.

In this article, you will explore the origins of AES, its uses, and potential threats. You will also learn how AES encryption works, going through every round of encryption step-by-step.

AES is an iterative rather than Feistel cipher. It is based on ‘substitution–permutation network’. It comprises of a series of linked operations, some of which involve replacing inputs by specific outputs (substitutions) and others involve shuffling bits around (permutations).

Interestingly, AES performs all its computations on bytes rather than bits. Hence, AES treats the 128 bits of a plaintext block as 16 bytes. These 16 bytes are arranged in four columns and four rows for processing as a matrix –

Unlike DES, the number of rounds in AES is variable and depends on the length of the key. AES uses 10 rounds for 128-bit keys, 12 rounds for 192-bit keys and 14 rounds for 256-bit keys. Each of these rounds uses a different 128-bit round key, which is calculated from the original AES key.

In present day cryptography, AES is widely adopted and supported in both hardware and software. Till date, no practical cryptanalytic attacks against AES has been discovered. Additionally, AES has built-in flexibility of key length, which allows a degree of ‘future-proofing’ against progress in the ability to perform exhaustive key searches.

However, just as for DES, the AES security is assured only if it is correctly implemented and good key management is employed.

5.3 SYSTEM TESTING

The purpose of testing is to discover errors. Testing is the process of trying to discover every conceivable fault or weakness in a work product. It provides a way to check the functionality of components, sub-assemblies, assemblies and/or a finished product. It is the process of exercising software with the intent of ensuring that the software system meets its requirements and user expectations and does not fail in an unacceptable manner. There are various types of tests. Each test type addresses a specific testing requirement.

System testing ensures that the entire integrated software system meets requirements. It tests a configuration to ensure known and predictable results. An example of system testing is the configuration oriented system integration test. System testing is based on process descriptions and flows, emphasizing pre-driven process links and integration points.

TYPES OF TESTS

5.3.1 UNIT TESTING:

Unit testing is usually conducted as part of a combined code and unit test phase of the software lifecycle, although it is not uncommon for coding and unit testing to be conducted as two distinct phases.

Unit testing involves the design of test cases that validate that the internal program logic is functioning properly, and that program inputs produce valid outputs. All decision branches and internal code flow should be validated. It is the testing of individual software units of the application .it is done after the completion of an individual unit before integration. This is a structural testing, that relies on knowledge of its construction and is invasive. Unit tests perform basic tests at component level and test a specific business process, application, and/or system configuration. Unit tests ensure that each unique path of a business process performs accurately to the documented specifications and contains clearly defined inputs and expected results.

5.3.2 INTEGRATION TESTING:

Integration tests are designed to test integrated software components to determine if they actually run as one program. Testing is event driven and is more concerned with the basic outcome of screens or fields. Integration tests demonstrate that although the components were individually satisfaction, as shown by successfully unit testing, the combination of components is correct and consistent. Integration testing is specifically aimed at exposing the problems that arise from the combination of components.

Software integration testing is the incremental integration testing of two or more integrated software components on a single platform to produce failures caused by interface defects.

The task of the integration test is to check that components or software applications, e.g. components in a software system or – one step up – software applications at the company level – interact without error.

Test Results: All the test cases mentioned above passed successfully. No defects encountered.

5.3.3 FUNCTIONAL TEST:

Functional tests provide systematic demonstrations that functions tested are available as specified by the business and technical requirements, system documentation, and user manuals.

Functional testing is centered on the following items:

Valid Input : identified classes of valid input must be accepted.

Invalid Input : identified classes of invalid input must be rejected.

Functions : identified functions must be exercised.

Output : identified classes of application outputs must be exercised.

Systems/Procedures: interfacing systems or procedures must be invoked. Organization and preparation of functional tests is focused on requirements, key functions, or special test cases. In addition, systematic coverage pertaining to identify Business process flows; data fields, predefined processes, and successive processes must be considered for testing. Before functional testing is complete, additional tests are identified and the effective value of current tests is determined.

5.3.4 WHITE BOX TESTING:

White Box Testing is a testing in which the software tester has knowledge of the inner workings, structure and language of the software, or at least its purpose. It is used to test areas that cannot be reached from a black box level.

5.3.5 BLACK BOX TESTING:

Black Box Testing is testing the software without any knowledge of the inner workings, structure or language of the module being tested. Black box tests, as most other kinds of tests, must be written from a definitive source document, such as specification or requirements document, such as specification or requirements document. It is a testing

in which the software under test is treated, as a black box. you cannot “see” into it. The test provides inputs and responds to outputs without considering how the software works.

Test Strategy And Approach: Field testing will be performed manually and functional tests will be written in detail.

Test objectives:

- All field entries must work properly.
- Pages must be activated from the identified link.
- The entry screen, messages and responses must not be delayed.

Features to be tested:

- Verify that the entries are of the correct format
- No duplicate entries should be allowed
- All links should take the user to the correct page.

5.3.6 ACCEPTANCE TESTING:

User Acceptance Testing is a critical phase of any project and requires significant participation by the end user. It also ensures that the system meets the functional requirements.

Test Results: All the test cases mentioned above passed successfully. No defects encountered.

CHAPTER 6

RESULTS AND DISCUSSION

In this project, we present a secure and fault-tolerant key agreement for group data sharing in a cloud storage scheme. Based on the SBIBD and group signature technique, the proposed approach can generate a common conference key efficiently, which can be used to protect the security of the outsourced data and support secure group data sharing in the cloud at the same time. Note that algorithms to construct the SBIBD and mathematical descriptions of the SBIBD are presented in this paper. Moreover, authentication services and efficient access control are achieved with respect to the group signature technique. In addition, our scheme can support the traceability of user identity in an anonymous environment. In terms of dynamic changes of the group member, taking advantage of the key agreement and efficient access control, the computational complexity and communication complexity for updating the common conference key and the encrypted data are relatively low. There are a few extensions to the application which, while superfluous under the necessities laid out already, would offer more noteworthy usefulness to the client and more profundity in the application. A portion of these are changes to existing code to build usefulness, while others are essentially adding new parts. In the first place, executing a document parting calculation while transferring and downloading records. Presently, the application takes an entire document and sends it to the worker for capacity. This just takes into account little documents to be sent and put away. By parting bigger documents, these could likewise be put away, permitting the potential for huge pictures and video to be put away and shared. Another augmentation is execute a portion on clients. As of now there is no restriction, thus clients may transfer however much they need. Clearly, this is impractical because of the expense of putting away information on the worker. Further to this augmentation is another, creating levels of clients. By offering a compensation for administration with more extra room, clients may pick to purchase more or utilize a more modest sum free of charge. Infection filtering of documents being transferred would be a helpful expansion to add. As such countless records having a place with numerous clients would be transferred, checking them would give security to all clients.

CHAPTER 7

CONCLUSION

7.1 CONCLUSION

In this project, we present a secure and fault tolerant key agreement for group data sharing in a cloud storage scheme. Based on the SBIBD and group signature technique, the proposed approach can generate a common conference key efficiently, which can be used to protect the security of the outsourced data and support secure group data sharing in the cloud at the same time.

Note that algorithms to construct the SBIBD and mathematical descriptions of the SBIBD are presented in this paper. Moreover, authentication services and efficient access control are achieved with respect to the group signature technique. In addition, our scheme can support the traceability of user identity in an anonymous environment. In terms of dynamic changes of the group member, taking advantage of the key agreement and efficient access control, the Computational complexity and communication complexity for updating the common conference key and the encrypted data are relatively low.

7.2 RESEARCH ISSUES

Distributed computing permits the clients to store their information on the capacity area kept up by an outsider. When the information is transferred into the cloud the client loses its authority over the information and the information can be altered by the aggressors. The aggressor might be an internal (CSP) or outside. Unapproved access is additionally a typical practice because of frail access control. The assurance of data emerges the accompanying difficulties: The security and protection issues identified with information stockpiling are privacy, respectability and accessibility

Confidentiality

The significant question in distributed computing is privacy. Information classification implies getting to the information exclusively by approved clients and is firmly identified with authentication. In another way privacy implies keeping clients information mysterious in the cloud frameworks. As we are putting away the information on a distant worker and moving the power over the information to the supplier here emerges the inquiries, for example, For guaranteeing classification, cryptographic encryption

changing over the information into a structure called figure text that can be seen exclusively by the approved clients. Encryption is a proficient strategy for ensuring the information however have the snag that information will be lost once the encryption key is stealed. calculations. Blow-fish is a fat and basic encryption calculation.

7.3 IMPLEMENTATION ISSUES

Privacy: The user data can be accessed by the host company with or without permission. The service provider may access the data that is on the cloud at any point in time. They could accidentally or deliberately alter or even delete information.

Compliance: There are many regulations in places related to data and hosting. To comply with regulations (Federal Information Security Management Act, Health Insurance Portability and Accountability Act, etc.) the user may have to adopt deployment modes that are expensive.

Security: Cloud-based services involve third-party for storage and security. Can one assume that a cloud-based company will protect and secure one's data if one is using their services at a very low or for free? They may share users' information with others. Security presents a real threat to the cloud.

Sustainability: This issue refers to minimizing the effect of cloud computing on the environment. Citing the server's effects on the environmental effects of cloud computing, in areas where climate favors natural cooling and renewable electricity is readily available, the countries with favorable conditions, such as Finland, Sweden, and Switzerland are trying to attract cloud computing data centers. But other than nature's favors, would these countries have enough technical infrastructure to sustain the high- end clouds

Abuse: While providing cloud services, it should be ascertained that the client is not purchasing the services of cloud computing for a nefarious purpose. In 2009, a banking Trojan illegally used the popular Amazon service as a command-and-control channel that issued software updates and malicious instructions to PCs that were

infected by the malware So the hosting companies and the servers should have proper measures to address these issues.

Recovery of lost data in contingency: Before subscribing any cloud service provider goes through all norms and documentations and check whether their services match your requirements and sufficient well-maintained resource infrastructure with proper upkeeping. Once you subscribed to the service you almost hand over your data into the hands of a third party. If you are able to choose proper cloud service then in the future you don't need to worry about the recovery of lost data in any contingency.

Flexibility is another hallmark of cloud computing. Users can access cloud-based services and applications from anywhere with an internet connection, using a variety of devices, including laptops, smartphones, and tablets. This accessibility promotes remote work and collaboration, enabling teams to collaborate effectively across geographic boundaries and time zones. Additionally, cloud computing eliminates the need for users to be tethered to specific hardware or locations, enhancing productivity and efficiency.

Cost-efficiency is a compelling driver for the adoption of cloud computing. Unlike traditional on-premises solutions that require significant upfront capital investment in hardware and software, cloud services operate on a pay-per-use model, allowing organizations to pay only for the resources they consume. This pay-as-you-go pricing structure not only reduces financial barriers to entry but also enables businesses to optimize their IT spending and better align it with their operational needs.

Reliability and performance are critical considerations for any computing infrastructure, and cloud computing excels in this regard. Cloud providers typically offer robust and resilient infrastructure, with redundant systems and data centers to ensure high availability and uptime. Additionally, cloud services often leverage advanced technologies, such as load balancing and auto-scaling, to optimize performance and deliver a seamless user experience even during peak demand periods.

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APPENDIX

SOURCE CODE:

```
DOCTYPE html>
```

```
<html lang="en">
```

```
<head>
```

```
<meta charset="utf-8">
```

```
<meta content="width=device-width, initial-scale=1.0" name="viewport">
```

```
<title>Cryptanalysis </title>
```

```
<meta content="" name="description">
```

```
<meta content="" name="keywords">
```

```
<!-- Favicons -->
```

```
<link href="assets/img/favicon.png" rel="icon">
```

```
<link href="assets/img/apple-touch-icon.png" rel="apple-touch-icon">
```

```
<!-- Google Fonts -->
```

```
<link  
href="https://fonts.googleapis.com/css?family=Open+Sans:300,300i,400,400i,600,600i,700,700i|Lato:400,300,700,900" rel="stylesheet">
```

```
<!-- Vendor CSS Files -->
```

```
<link href="assets/vendor/bootstrap/css/bootstrap.min.css" rel="stylesheet">
```

```
<link href="assets/vendor/icomfont/icomfont.min.css" rel="stylesheet">
```

```
<link href="assets/vendor/venobox/venobox.css" rel="stylesheet">
```

```
<link href="assets/vendor/owl.carousel/assets/owl.carousel.min.css"
rel="stylesheet">
```

```
<!-- Template Main CSS File -->
```

```
<link href="assets/css/style.css" rel="stylesheet">
```

```
<!-- =====
```

```
* Template Name: Amoeba - v2.3.0
```

```
* Template URL: https://bootstrapmade.com/free-one-page-bootstrap-template-amoeba/
```

```
* Author: BootstrapMade.com
```

```
* License: https://bootstrapmade.com/license/
```

```
===== -->
```

```
</head>
```

```
<body>
```

```
<!-- ===== Header ===== -->
```

```
<header id="header" class="fixed-top">
```

```
<div class="container">
```

```
<div class="logo float-left">
```

```
<h1 class="text-light" style="font-size: 20px!important;"><a href="index.html"><span>Cryptanalysis of an Anonymous and Traceable Group Data Sharing in Cloud Computing</span></a></h1>
```

```
<!-- Uncomment below if you prefer to use an image logo -->
```

```
<!-- <a href="index.html"></a>-->

</div>

<nav class="nav-menu float-right d-none d-lg-block">

<ul>

<li class="active"><a href="uhome.jsp">Home</a></li>

<li class="drop-down"><a href="">Groups</a>

<ul>

<li><a href="vg.jsp">View Groups</a></li>

<li><a href="vmg.jsp">View My Groups</a></li>

<li><a href="vog.jsp">View Other Groups</a></li>

</ul></li>

<li class="drop-down"><a href="">Files</a>

<ul>

<li><a href="up.jsp">Upload File</a></li>

<li><a href="vmf.jsp">My files</a></li>

</ul></li>

<li class="drop-down"><a href="">Requests</a>

<ul>

<li><a href="requests.jsp">View File Requests</a></li>

<li><a href="myfilerequests.jsp">View My File Requests</a></li>

</ul></li>

<li class="drop-down"><a href="">Response</a>

<ul>

<li><a href="filerequessts.jsp">View File Request Status</a></li>

```


 Logout

</nav><!-- .nav-menu -->

</div>

</header><!-- End #header -->

<main id="main">

 <!-- ===== Breadcrumbs ===== -->

 <section class="breadcrumbs">

 <div class="container">

 <div class="d-flex justify-content-between align-items-center">

<!-- <h2>Portfolio Details</h2>
-->

 Home

 File

 Upload File

 <!-- Portfolio

 Portfolio Details -->

 </div>

```

```

</div>

</section><!-- Breadcrumbs -->

<section class="portfolio-details">
 <div class="container">

 <div class="" align="center">

 <%String haha=null;
String ab=null;
String a="Your Registration Successfully Completed";
haha=request.getParameter("msg");
System.out.println("hahahahahah===== "+haha);
if(haha==null){
System.out.println("=====");
}

else if(haha.equals(a)){

%>

<p style="color: green;font-weight: bold;"><%=haha %></p>

<%}

else if(haha.equals("failed")){

%>

```

<p style="color: red;font-weight: bold;">Your Email Id Already Registered</p>

<%

}

else{

}

%>

<h2>Upload File</h2>

<br>

<br>

<div class="col-lg-5 col-md-12">

<form action="forms/up.jsp" method="post" role="form" class="">

<div class="form-group">

<input type="text" class="form-control" required="required" name="name" placeholder="Name" data-rule="minlen:3" data-msg="Please enter Name" />

<div class="validate"></div>

</div>

<div class="form-group">

<input type="file" name="file" class="form-control" required="required" placeholder="Email" data-rule="email" data-msg="Please enter a valid email" />

<div class="validate"></div>

</div>

<input type="submit" value="Upload">

</form>

</div>

</div>

</div>

</div>

</section>

</main><!-- End #main -->

<!-- ===== Footer ===== -->

<footer id="footer" style="position: fixed;bottom: 0;left: 0;right: 0">

<div class="container">

</div>

</footer><!-- End #footer -->

<a href="#" class="back-to-top"><i class="icofont-simple-up"></i></a>

<!-- Vendor JS Files -->

<script src="assets/vendor/jquery/jquery.min.js"></script>

```
<script src="assets/vendor/bootstrap/js/bootstrap.bundle.min.js"></script>
<script src="assets/vendor/jquery.easing/jquery.easing.min.js"></script>
<script src="assets/vendor/php-email-form/validate.js"></script>
<script src="assets/vendor/isotope-layout/isotope.pkgd.min.js"></script>
<script src="assets/vendor/venobox/venobox.min.js"></script>
<script src="assets/vendor/owl.carousel/owl.carousel.min.js"></script>

<!-- Template Main JS File -->
<script src="assets/js/main.js"></script>

</body>

</html>

DOCTYPE html>
<html lang="en">

<head>
 <meta charset="utf-8">
 <meta content="width=device-width, initial-scale=1.0" name="viewport">

 <title>Cryptanalysis </title>
 <meta content="" name="description">
 <meta content="" name="keywords">

 <!-- Favicons -->
```

```

<link href="assets/img/favicon.png" rel="icon">

<link href="assets/img/apple-touch-icon.png" rel="apple-touch-icon">

<!-- Google Fonts -->
<link
href="https://fonts.googleapis.com/css?family=Open+Sans:300,300i,400,400i,600,600i,700,700i|Lato:400,300,700,900" rel="stylesheet">

<!-- Vendor CSS Files -->
<link href="assets/vendor/bootstrap/css/bootstrap.min.css" rel="stylesheet">
<link href="assets/vendor/icomfont/icomfont.min.css" rel="stylesheet">
<link href="assets/vendor/venobox/venobox.css" rel="stylesheet">
<link href="assets/vendor/owl.carousel/assets/owl.carousel.min.css"
rel="stylesheet">

<!-- Template Main CSS File -->
<link href="assets/css/style.css" rel="stylesheet">

<!-- =====
* Template Name: Amoeba - v2.3.0
* Template URL: https://bootstrapmade.com/free-one-page-bootstrap-template-amoeba/
* Author: BootstrapMade.com
* License: https://bootstrapmade.com/license/
===== -->

</head>

```

<body>

<!-- ===== Header ===== -->

<header id="header" class="fixed-top">

<div class="container">

<div class="logo float-left">

<h1 class="text-light" style="font-size: 20px!important;"><a href="index.html"><span>Cryptanalysis of an Anonymous and Traceable Group Data Sharing in Cloud Computing</span></a></h1>

<!-- Uncomment below if you prefer to use an image logo -->

<!-- <a href="index.html"></a>-->

</div>

<nav class="nav-menu float-right d-none d-lg-block">

<ul>

<li><a href="csphome.jsp">Home</a></li>

<li><a href="ag.jsp">Add Group</a></li>

<li class="drop-down"><a style=" color: white; ">Users</a>

<ul>

<li><a href="url.jsp">New Registered Users</a></li>

<li><a href="ugreuest.jsp">Joining Requests </a></li>

</ul></li>

<li><a href="vgc.jsp">Groups-Users</a></li>

```
Logout
```

```

```

```
</nav><!-- .nav-menu -->
```

```
</div>
```

```
</header><!-- End #header -->
```

```
<main id="main">
```

```
<!-- ===== Breadcrumbs ===== -->
```

```
<section class="breadcrumbs">
```

```
<div class="container">
```

```
<div class="d-flex justify-content-between align-items-center">
```

```
<!-- <h2>Portfolio Details</h2>
```

```
-->
```

```
Home
```

```
User
```

```
New Registered Users
```

```
<!-- Portfolio
```

```
Portfolio Details -->
```

```

```

```
</div>
```

</div>

</section><!-- Breadcrumbs -->

<section id="hero">

<div class="hero-container">

<iframe src="forms/url.jsp" width="95%" height="100%"></iframe>

</div>

<br>

</section>

</main><!-- End #main -->

<!-- ===== Footer ===== -->

<footer id="footer">

<div class="container">

</div>

</footer><!-- End #footer -->

<a href="#" class="back-to-top"><i class="icofont-simple-up"></i></a>

<!-- Vendor JS Files -->

<script src="assets/vendor/jquery/jquery.min.js"></script>

<script src="assets/vendor/bootstrap/js/bootstrap.bundle.min.js"></script>

```
<script src="assets/vendor/jquery.easing/jquery.easing.min.js"></script>

<script src="assets/vendor/php-email-form/validate.js"></script>

<script src="assets/vendor/isotope-layout/isotope.pkgd.min.js"></script>

<script src="assets/vendor/venobox/venobox.min.js"></script>

<script src="assets/vendor/owl.carousel/owl.carousel.min.js"></script>

<!-- Template Main JS File -->

<script src="assets/js/main.js"></script>

</body>

</html>
```

## **USER:**

```
<!DOCTYPE html>

<html lang="en">

<head>

 <meta charset="utf-8">

 <meta content="width=device-width, initial-scale=1.0" name="viewport">

 <title>Cryptanalysis </title>

 <meta content="" name="description">

 <meta content="" name="keywords">
```

```

<!-- Favicons -->

<link href="assets/img/favicon.png" rel="icon">

<link href="assets/img/apple-touch-icon.png" rel="apple-touch-icon">

<!-- Google Fonts -->

<link
href="https://fonts.googleapis.com/css?family=Open+Sans:300,300i,400,400i,600,600i,700,700i|Lato:400,300,700,900" rel="stylesheet">

<!-- Vendor CSS Files -->

<link href="assets/vendor/bootstrap/css/bootstrap.min.css" rel="stylesheet">

<link href="assets/vendor/icomfont/icomfont.min.css" rel="stylesheet">

<link href="assets/vendor/venobox/venobox.css" rel="stylesheet">

<link href="assets/vendor/owl.carousel/assets/owl.carousel.min.css"
rel="stylesheet">

<!-- Template Main CSS File -->

<link href="assets/css/style.css" rel="stylesheet">

<!-- =====

* Template Name: Amoeba - v2.3.0

* Template URL: https://bootstrapmade.com/free-one-page-bootstrap-template-amoeba/

* Author: BootstrapMade.com

* License: https://bootstrapmade.com/license/

===== -->

```

</head>

<body>

<!-- ===== Header ===== -->

<header id="header" class="fixed-top">

<div class="container">

<div class="logo float-left">

<h1 class="text-light" style="font-size: 20px!important;"><a href="index.html"><span>Cryptanalysis of an Anonymous and Traceable Group Data Sharing in Cloud Computing</span></a></h1>

<!-- Uncomment below if you prefer to use an image logo -->

<!-- <a href="index.html"></a>-->

</div>

<nav class="nav-menu float-right d-none d-lg-block">

<ul>

<li class=""><a href="index.html">Home</a></li>

<li><a href="csp.jsp">CSP</a></li>

<li class="drop-down"><a href="" style="color: white;">User</a>

<ul>

<li><a href="userl.jsp">Login</a></li>

<li><a href="userr.jsp">Registration</a></li>

```


</nav><!-- .nav-menu -->

</div>

</header><!-- End #header -->

<main id="main">

 <!-- ===== Breadcrumbs ===== -->

 <section class="breadcrumbs">

 <div class="container">

 <div class="d-flex justify-content-between align-items-center">

<!-- <h2>Portfolio Details</h2>
-->

 Home

 User Login

 <!-- Portfolio

 Portfolio Details -->

 </div>

</div>

</div>

</section><!-- Breadcrumbs -->

```

```
<!-- ===== Portfolio Details Section ===== -->
```

```
<section class="portfolio-details">
```

```
 <div class="container">
```

```
 <div class="" align="center">
```

```
 <%String haha=null;
```

```
String ab=null;
```

```
String r="0";
```

```
String r1="2";
```

```
String r2="nr";
```

```
haha=request.getParameter("r");
```

```
System.out.println("hahahahahah===== "+haha);
```

```
if(haha==null){
```

```
System.out.println("=====");
```

```
}
```

```
else if(haha.equals("1")){
```

```
%>
```

```
<p>Your registration not accepted </p>
```

```
<%}
```

```
else if(haha.equals(r1)){
```

```
%>
```

<p>Your registration was rejected </p>

<%} else if(haha.equals(r2)){

%>

<p>Your are not registered user or entered wrong credentials</p>

<%} %>

<h2>USER LOGIN</h2>

<br>

<br>

<div class="col-lg-5 col-md-12">

<form action="forms/userl.jsp" method="post" role="form" class="">

<div class="form-group">

<input type="email" name="email"required="required" class="form-control" placeholder="Email" data-rule="email" data-msg="Please enter a valid email" />

<div class="validate"></div>

</div>

<div class="form-group">

<input type="password" class="form-control"required="required" name="password"placeholder="Password" data-rule="minlen:1" data-msg="Please enter password" />

<div class="validate"></div>

</div>

```

 <input type="submit" value="SUBMIT">

 </form>

 </div>

</div>

</div>

</div>

</section><!-- End Portfolio Details Section -->

</main><!-- End #main -->

<!-- ===== Footer ===== -->

<footer id="footer" style="position: fixed; left: 0; bottom: 0; width: 100%;">

 <div class="container">

 </div>

 </footer>

 <i class="icofont-simple-up"></i>

<!-- Vendor JS Files -->

<script src="assets/vendor/jquery/jquery.min.js"></script>

```

```

<script src="assets/vendor/bootstrap/js/bootstrap.bundle.min.js"></script>
<script src="assets/vendor/jquery.easing/jquery.easing.min.js"></script>
<script src="assets/vendor/php-email-form/validate.js"></script>
<script src="assets/vendor/isotope-layout/isotope.pkgd.min.js"></script>
<script src="assets/vendor/venobox/venobox.min.js"></script>
<script src="assets/vendor/owl.carousel/owl.carousel.min.js"></script>

<!-- Template Main JS File -->
<script src="assets/js/main.js"></script>

</body>

</html>

<%@ page language="java" contentType="text/html; charset=ISO-8859-1"
 pageEncoding="ISO-8859-1"%>
<!DOCTYPE html>
<html>
<head>
<meta charset="ISO-8859-1">
<title>Insert title here</title>
<style type="text/css">
td {
 width: 33%
}
</style>

```

```

</head>

<body>

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

 <div align="center">

 <h2 style="text-transform: uppercase;">Group:
 <%=request.getParameter("gname")%>

 </h2>

 <table style="width: 100%">

 <%

 String dsql = "";

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

 Class.forName("com.mysql.jdbc.Driver");

 Connection conn =
 DriverManager.getConnection("jdbc:mysql://localhost:3306/Cryptanalysis", "root",
 "root");

 PreparedStatement po = conn
 .prepareStatement("delete from viewtimeline where myid=" +
 session.getAttribute("id9") + "");

 po.executeUpdate();

 PreparedStatement ps = conn
 .prepareStatement("select id,shretime from filegroup where groupid="
 + gid + " ");

 ResultSet rss = ps.executeQuery();

```

```

while (rss.next()) {
 PreparedStatement p1 = conn.prepareStatement(
 "insert into viewtimeline(shareid,sharetime,sharetype,myid) values (
 " + rss.getString(1)
 + "," + rss.getString(2) + "','sfile','" + session.getAttribute("id9")
 + "');

 p1.executeUpdate();
}

PreparedStatement poi = conn.prepareStatement(
 "select * from viewtimeline where myid='" + session.getAttribute("id9")
+ "' order by sharetime");

ResultSet rssa = poi.executeQuery();

while (rssa.next()) {

 if (rssa.getString(4).equals("sfile")) {

 PreparedStatement poia = conn
 .prepareStatement("select * from filegroup where id='" +
rssa.getString(2) + "'");

 ResultSet rssaa = poia.executeQuery();

 while (rssaa.next()) {

 dsql = "select users.name,files.fname,files.id,users.id from users,files
where users.id=(select userid from filegroup where id='"
 + rssaa.getString(1) + "') and files.id=(select id from files where
id='"
 + rssaa.getString(3) + "'";

```

```

 System.out.println("=====" + dsq);

 PreparedStatement dps = conn.prepareStatement(dsq);

 //out.println(rssaa.getString(1));

 ResultSet drs = dps.executeQuery();

 while (drs.next()) {
%>

<tr align="center">

 <td align="center"><table style="width: 100%" border="1">

 <tr>

 <td style="text-transform: uppercase;"><%=drs.getString(1)%><!--
Sender name --></td>

 <td>Time <%=rssa.getString(3)%></td>

 </tr>

 <tr>

 <td>File Name: <%=drs.getString(2)%></td>

 <td>

 <%if(drs.getString(4).equalsIgnoreCase(session.getAttribute("id9
").toString())){ %>

 <form action="downfil.jsp">

 <input type="hidden" name="fid"
value="<%=rssaa.getString(3)%>">

```

```

 <input type="submit"
 style="background-color: maroon; color: white;"
 value="Download">
 </form>

 <%}

else{

 %>

 <form action="sendfilreq2.jsp">

 <input type="hidden" name="gid" value="<%=gid%>">

 <input type="hidden" name="fid"
value="<%=rssaa.getString(3)%>">

 <input type="submit"
 style="background-color: maroon; color: white;"
 value="Send Request">

 </form>

```

```
 <%} %>
 </td>
</tr>

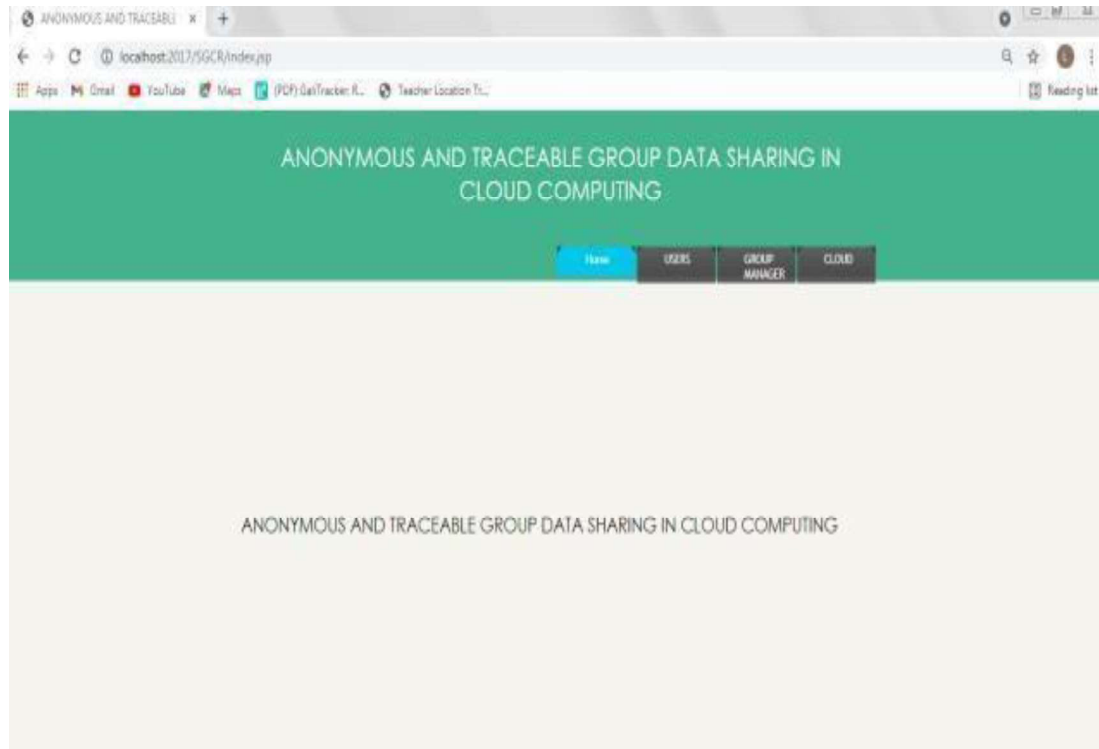
</table></td>
</tr>
<%
 }
 }
 }
 }
%>

</table>
</div>

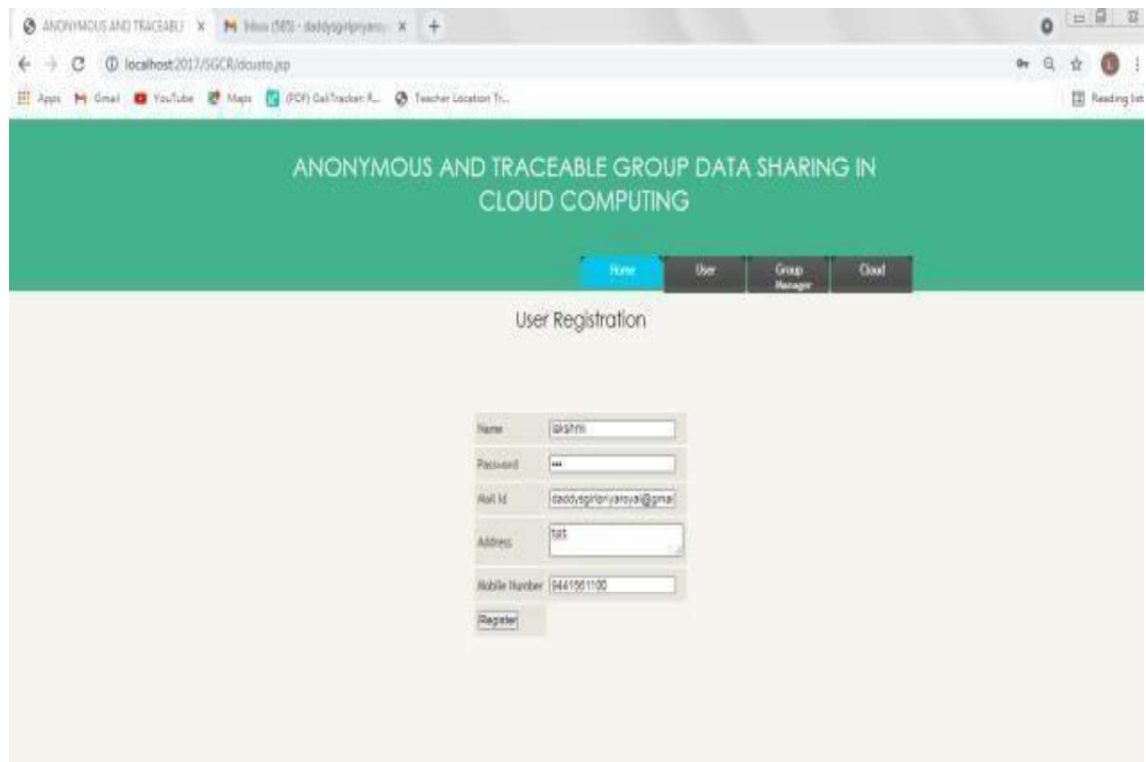
</body>
</html>
```

# SCREENSHOTS

## Home page



## user registration



## Accept requests and join users

The screenshot shows a web browser window with the URL `localhost:2017/SGCR/reqst.jsp`. The page has a green header with the text "ANONYMOUS AND TRACEABLE GROUP DATA SHARING IN CLOUD COMPUTING". Below the header is a navigation bar with buttons: Home, Authorize Users, Files, CreateGroup, Status, Requests, ViewGroups, and Logout. The main content area is titled "Accept and Join Users" and contains a table with the following data:

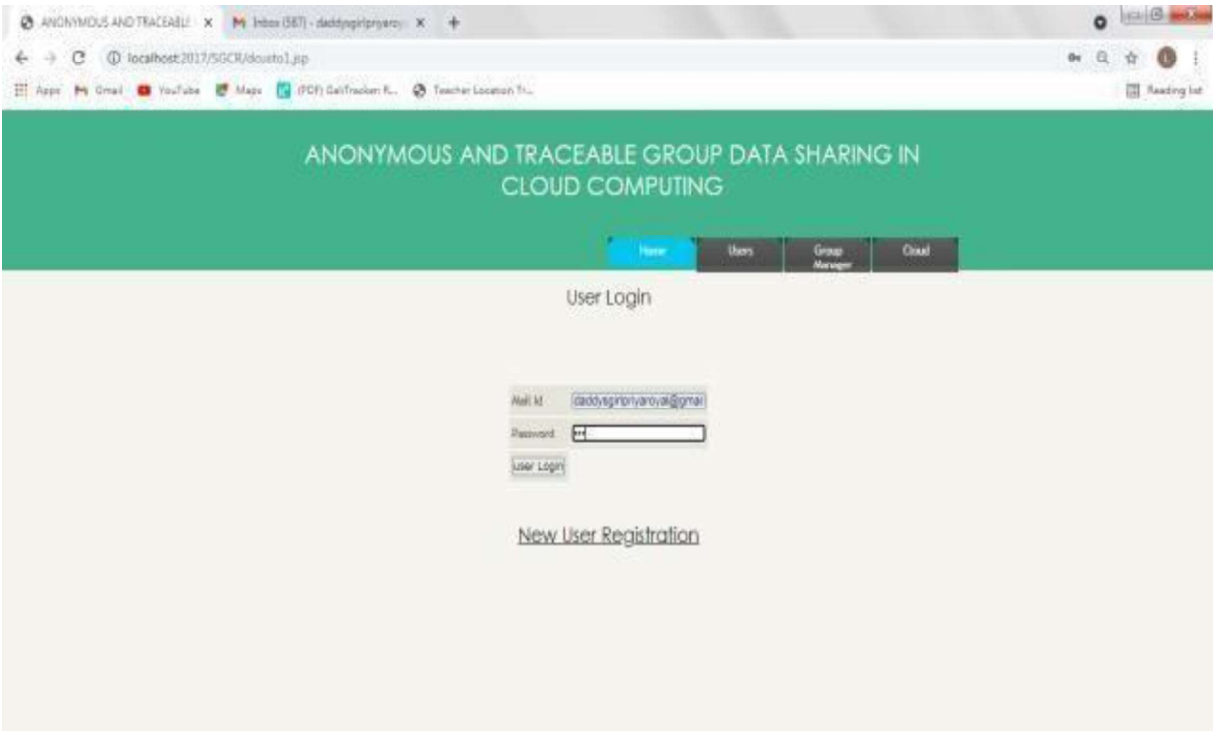
Group Name	Join	Reject	Accept	Cancel
0	daddygirlprinyai@gmail.com	NotActive	Accept	Delete

## Authorize users

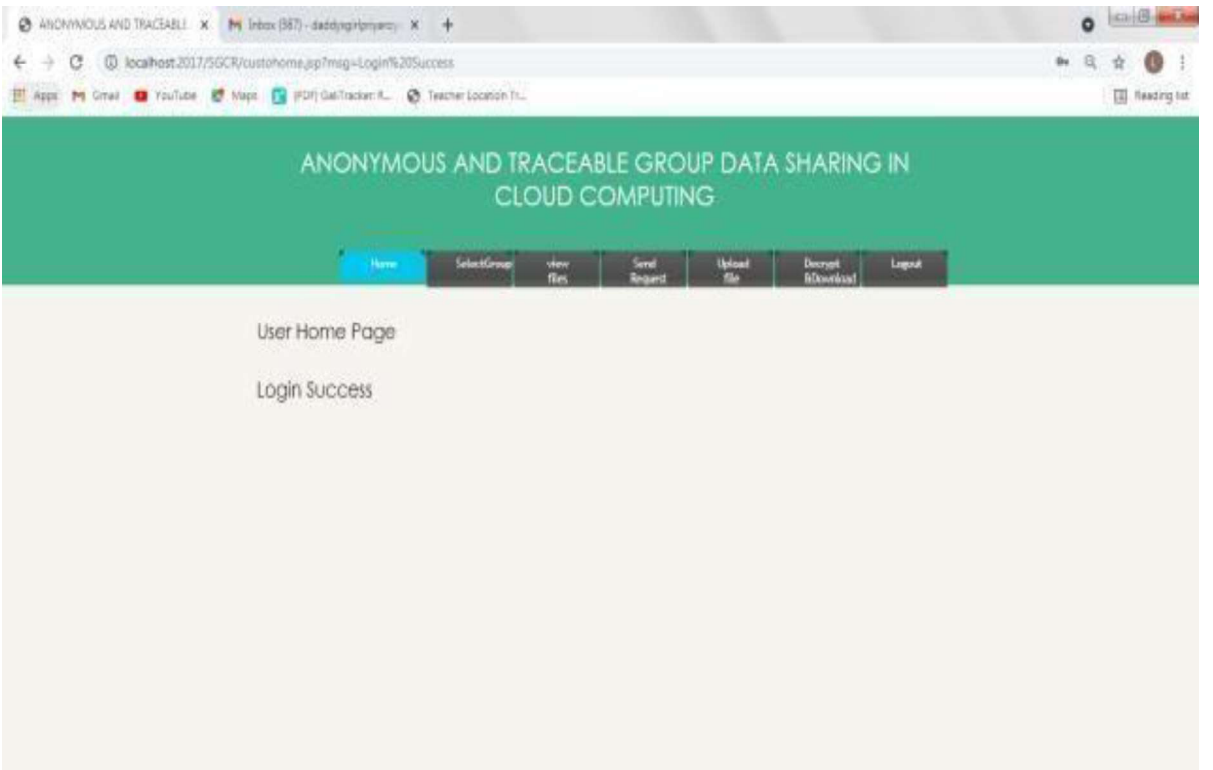
The screenshot shows a web browser window with the URL `localhost:2017/SGCR/viewdous.jsp`. The page has a green header with the text "ANONYMOUS AND TRACEABLE GROUP DATA SHARING IN CLOUD COMPUTING". Below the header is a navigation bar with buttons: Home, Authorize Users, Files, CreateGroup, Status, Requests, ViewGroups, and Logout. The main content area is titled "View Users" and contains a table with the following data:

Group	Group ID	Group Name	Join	Cancel	Reject
teacher	daddygirlprinyai@gmail.com	9447561930	Join	Activate	Delete

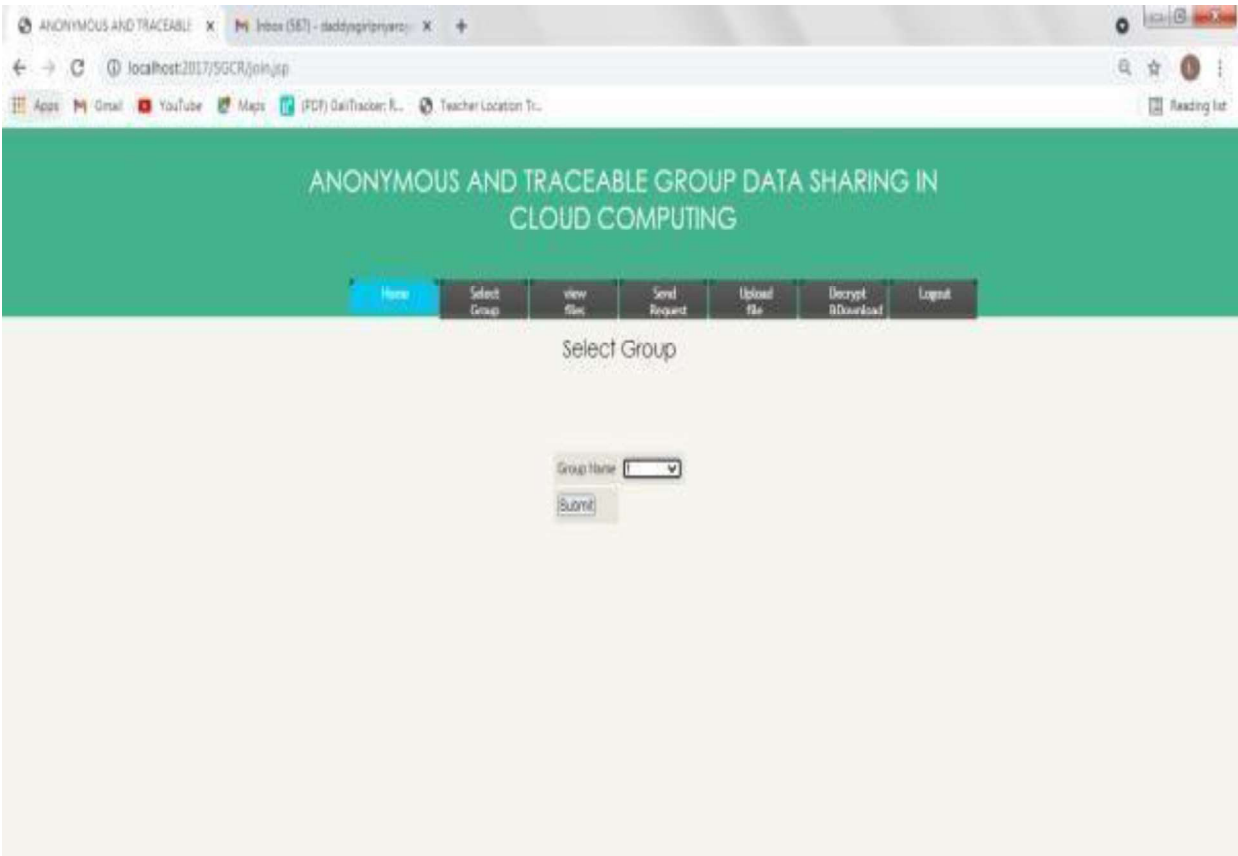
User login page



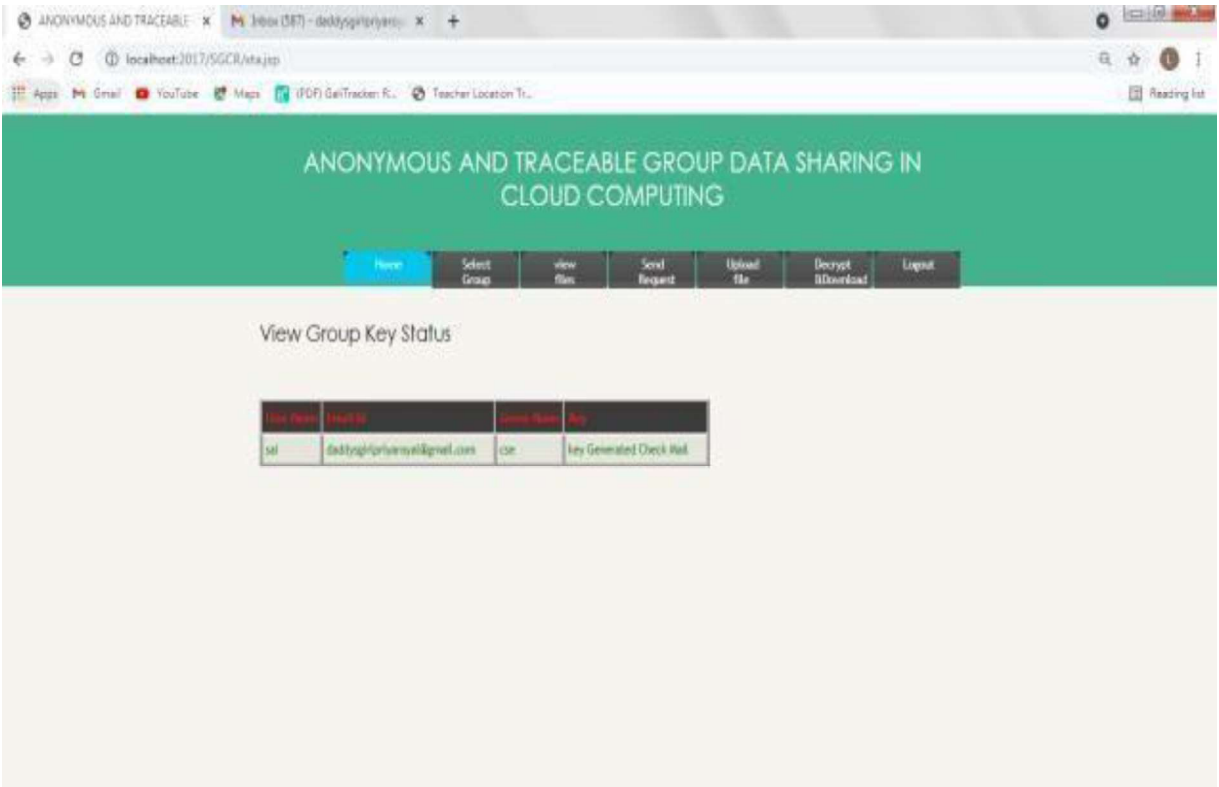
User homepage



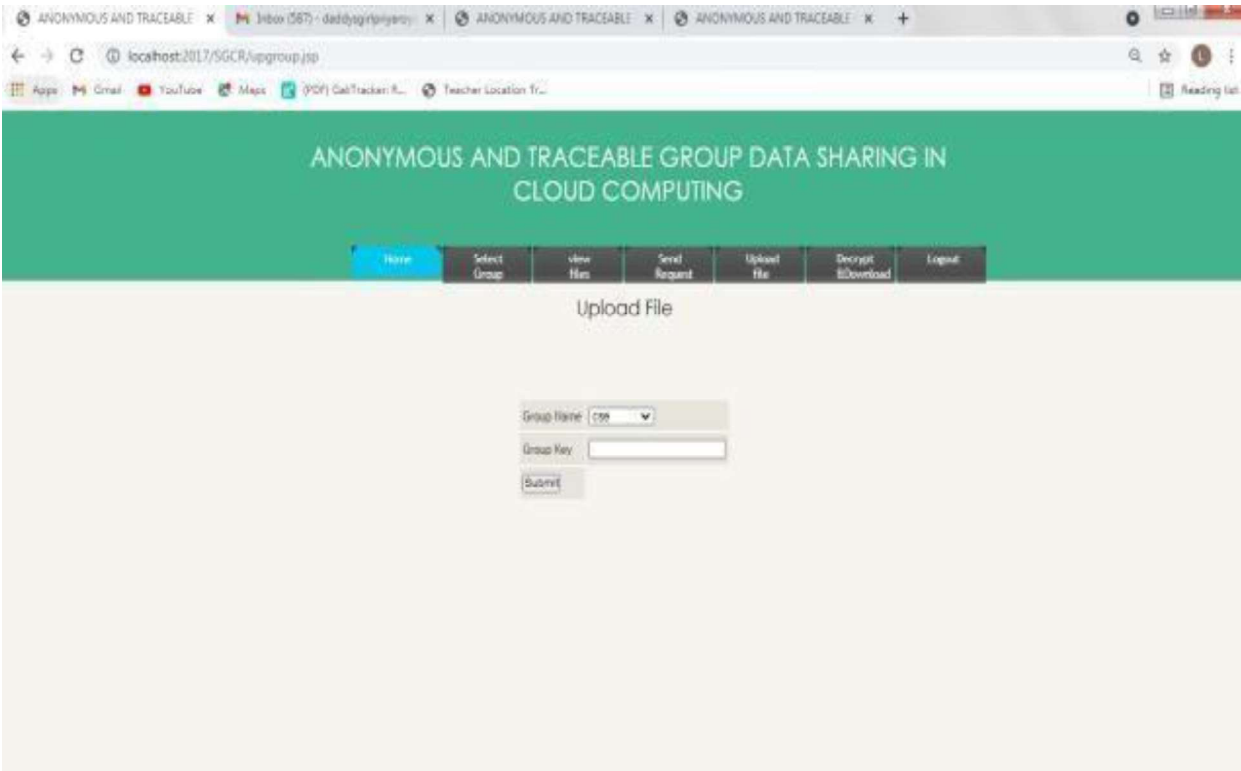
## Select Group



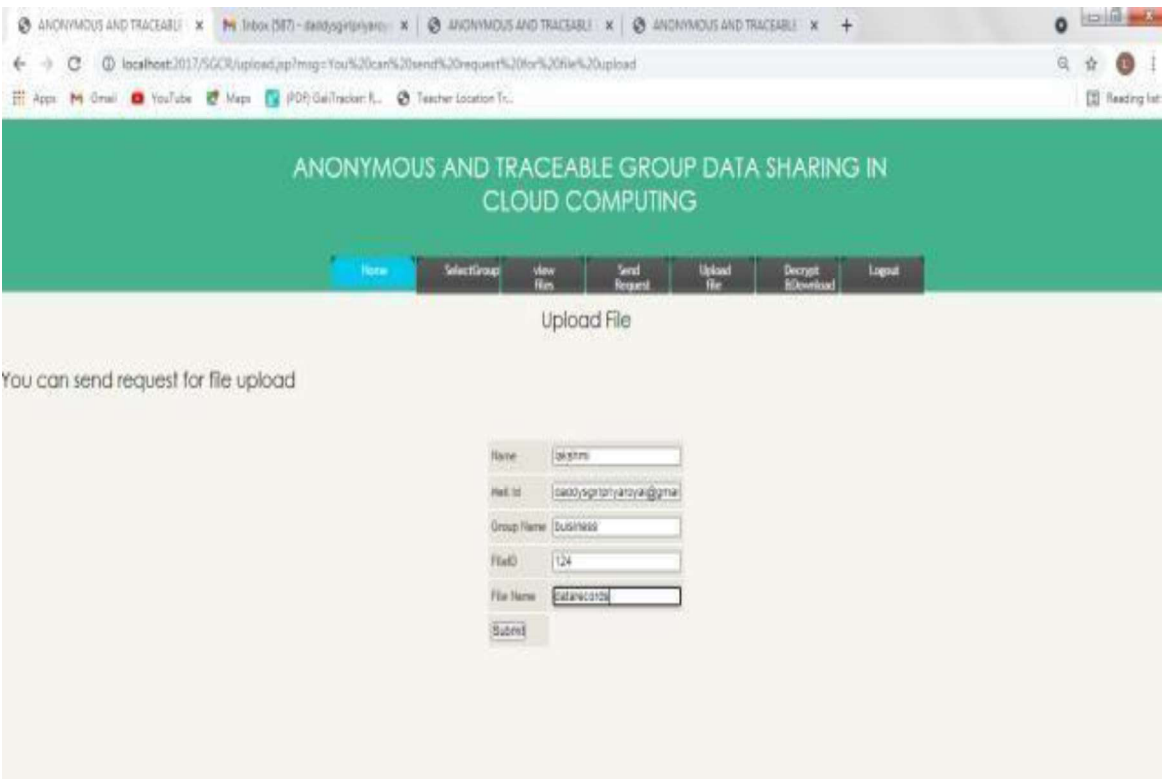
## View Group key status



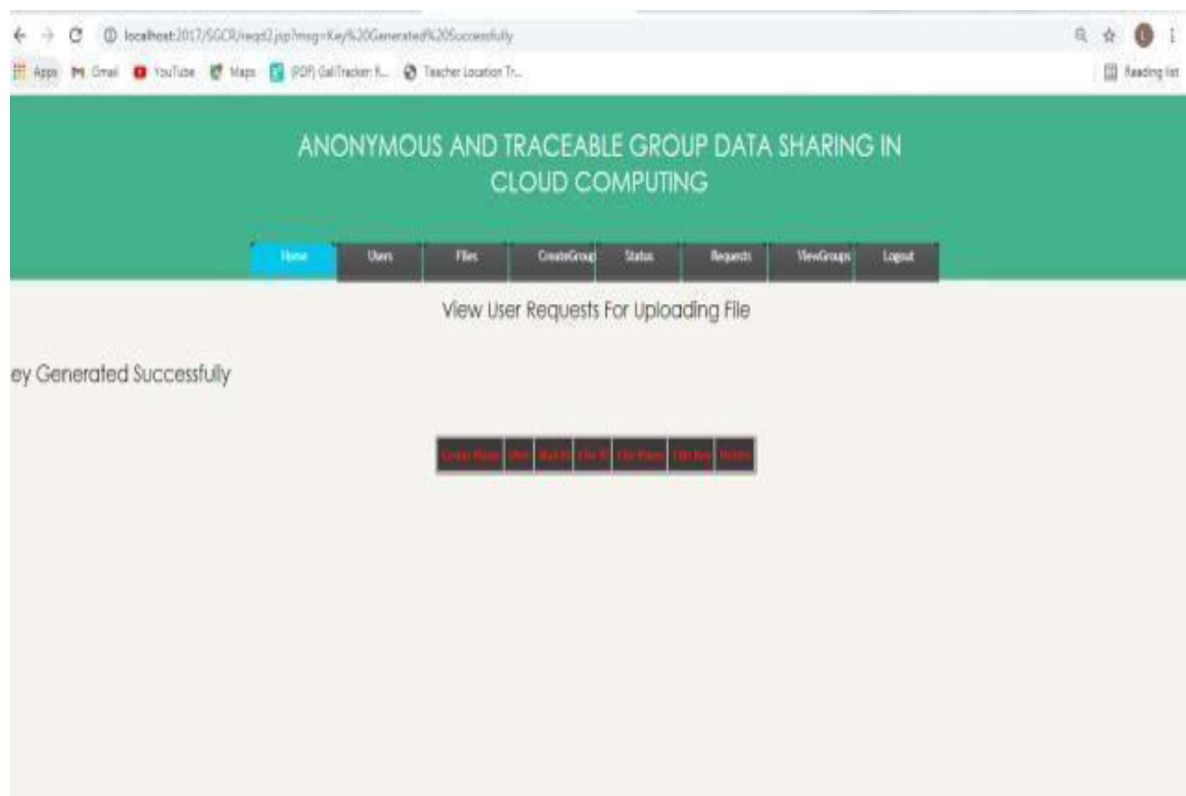
Send upload request



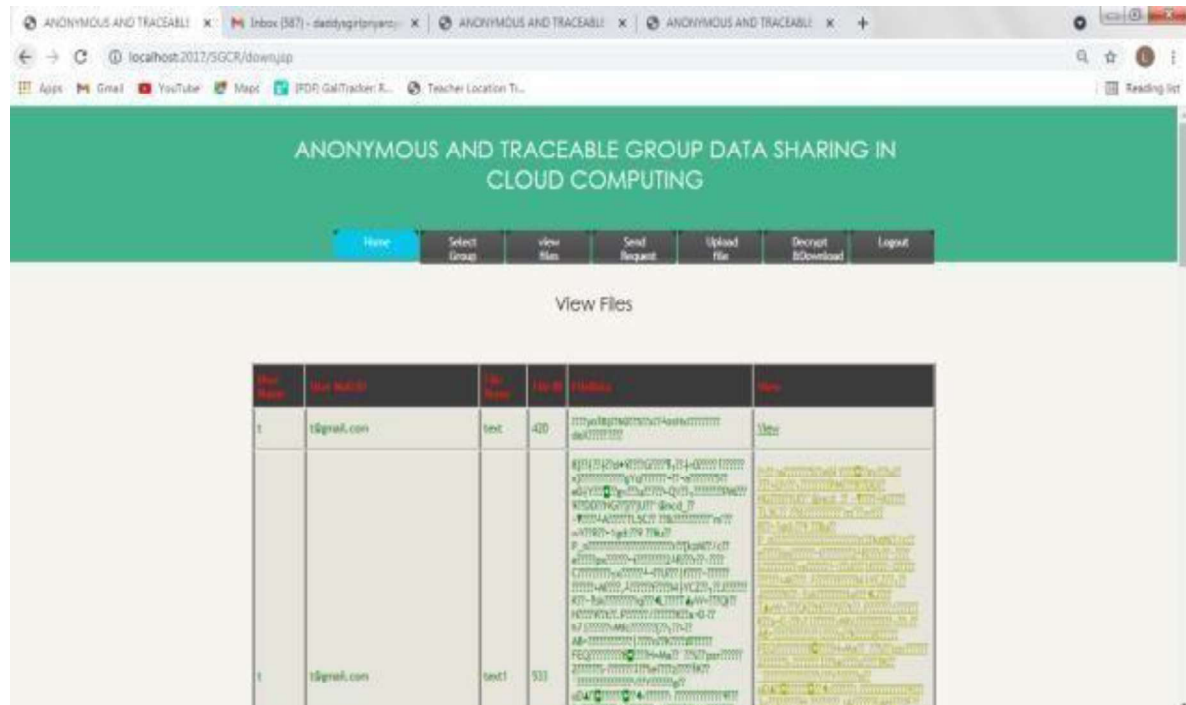
Upload file with filename



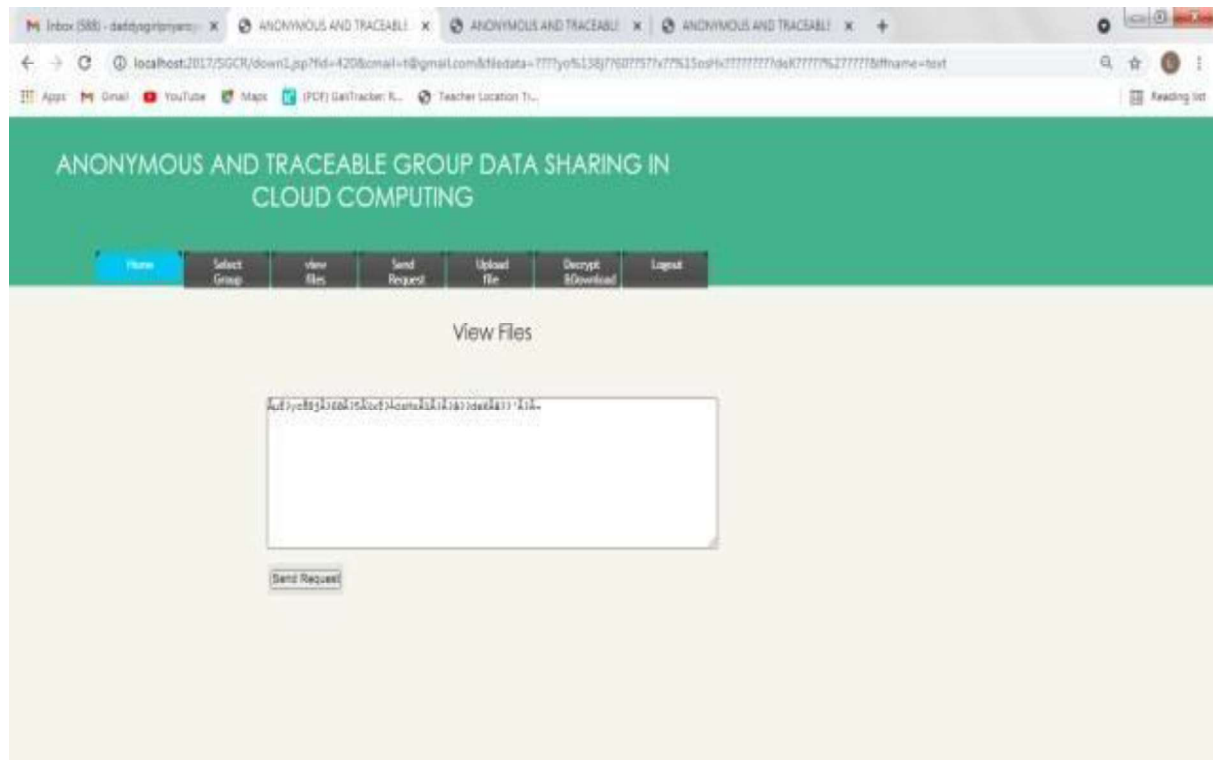
### Group manager view the user upload and generate file key



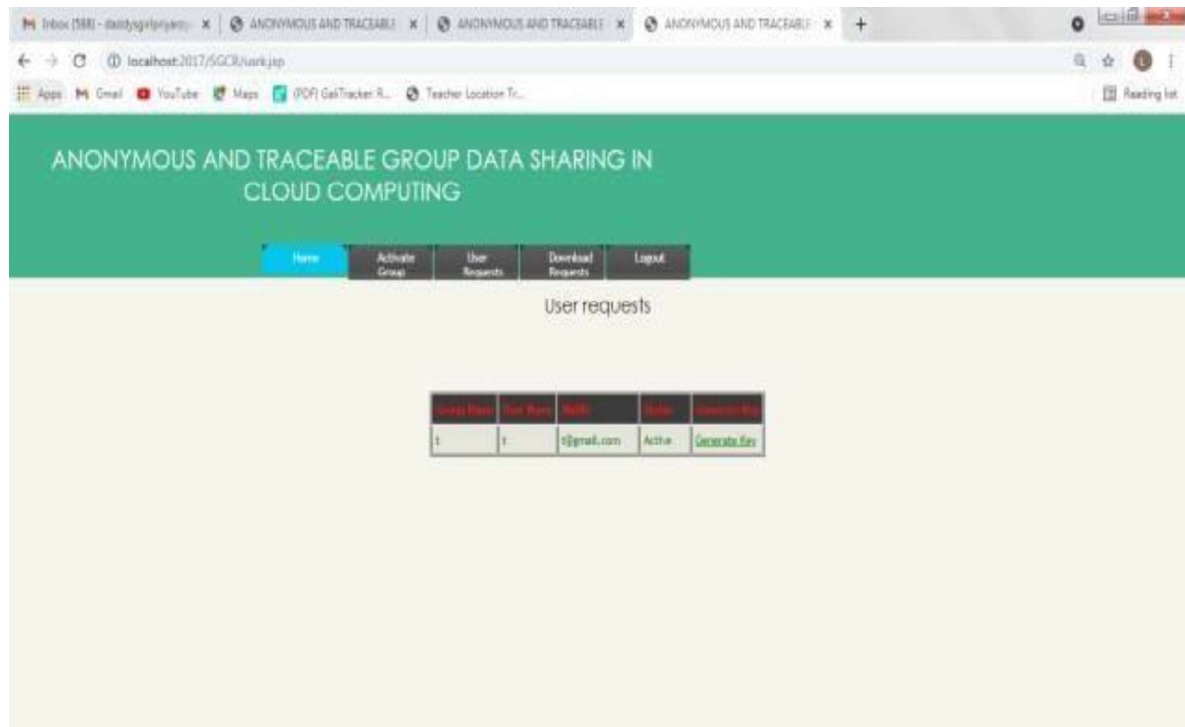
**Send download request**



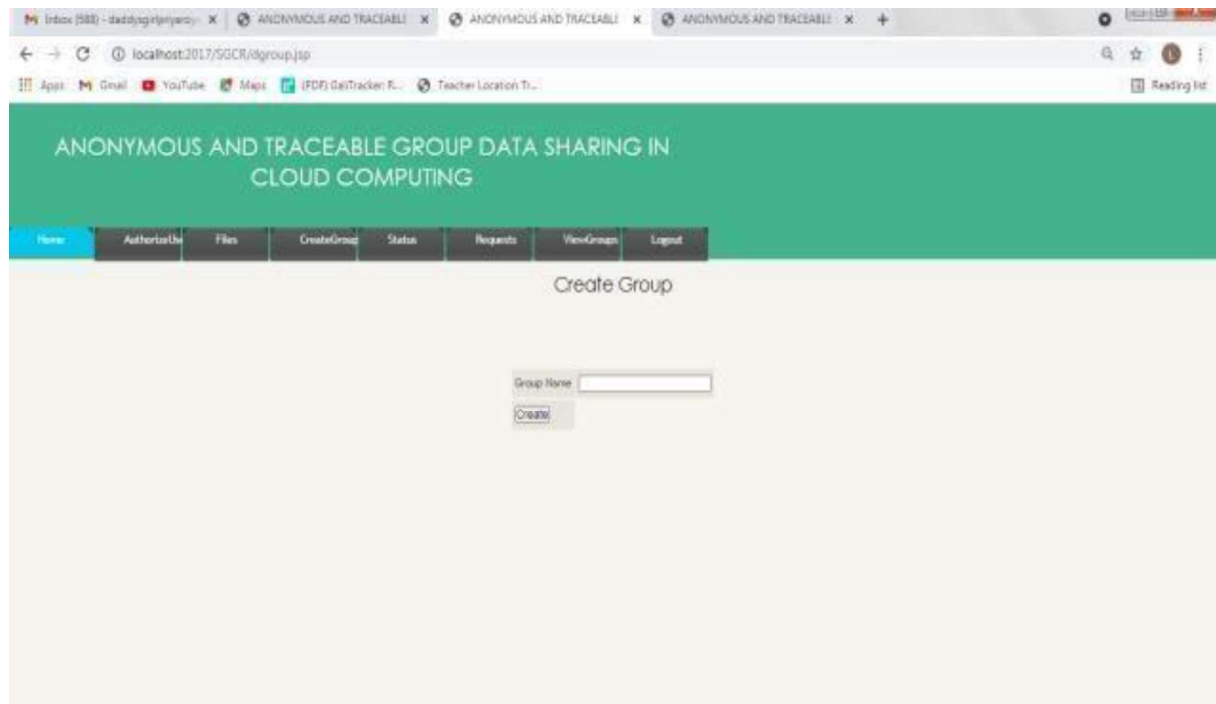
## View files



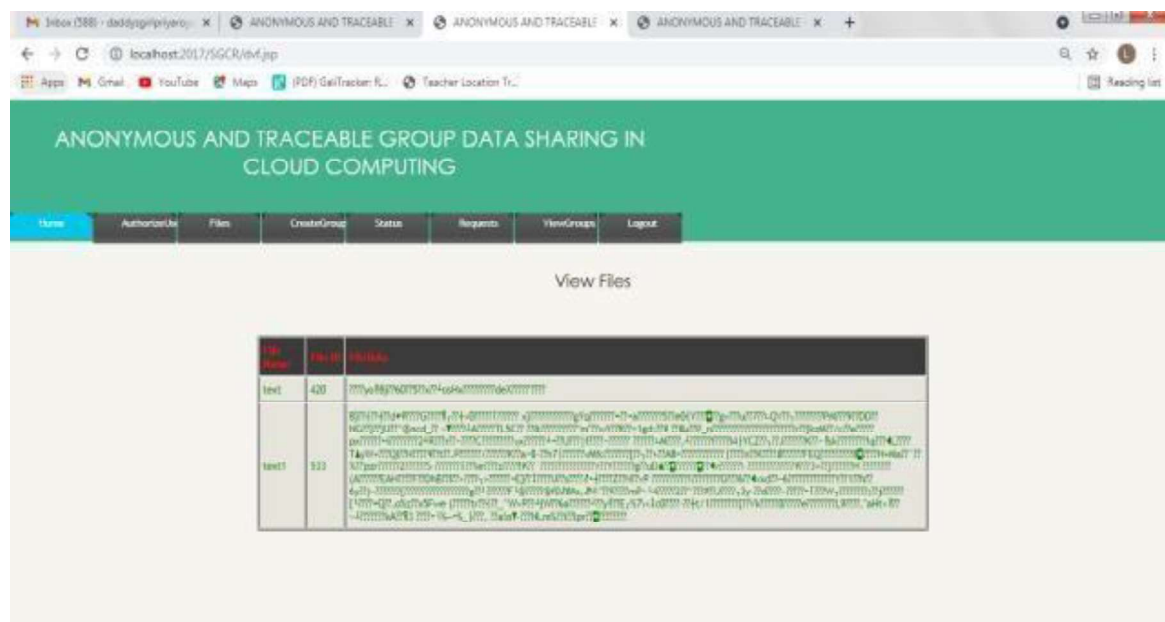
**User requests(cloud)**



### Create group(group):



## View files(group)



## RESEARCH PAPER

# ANONYMOUS AND TRACEABLE GROUP DATA SHARING IN CLOUD COMPUTING

**ABSTRACT-** *The institution's file sharing has been a subject of discussion inside the APC for the previous couple of decades. In choose of cloud computing, how at ease and efficient is the alternate of pc statistics in a cloud computing surroundings. This is a critical issue It must be completed. Also, anonymity is how you deny and identify yourself, i.e. additionally a cloud problem, because things are non-obligatory. This document is meant to share and store statistics. It is very handy to prepare inside the cloud with high protection and performance in a nameless way. The key is the institutional agreement and association, the new identifiable norms which might be proposed to be preserved within the organization's organization. Many clients are nameless inside the public cloud. On the alternative hand, anonymous participants of the organization can handle topics associated with the agency, and the genuine identity of people may be revealed if essential. In evaluation, easy key storage is based totally totally on the design of sharing and storing institution information to guard their facts. Pay interest to the symmetry. Worrying approximately the want for an incomplete format is essential to use at key times. This is the burden of the developer. Meeting the smooth key. Theoretical and experimental computational evaluation show that the proposed scheme is safe and effective for organizing statistical conversation in cloud computing.*

**Keywords:** *Far off Information Uprightness Control (RDIC), Message Validation Code (Macintosh), affirmation, theft, alert, comprehensiveness.*

### INTRODUCTION

Compared with conventional business and communication era, cloud computing has attracted the eye of most researchers as it lacks electricity and verbal exchange capabilities. Cloud computing cannot most effective offer clients with unlimited computing assets within the most green manner, but also offer clients with definitely unlimited storage centers [1] - [3]. Garage Clouds is the biggest cloud computing provider, permitting everybody to connect with each different via various electronic gadgets. In addition, various statistics codecs can be freely distributed via cloud storage as well as social networks, video streaming, and home networks. To a few extent, even though cloud conversation makes a speciality of organization statistics, Refers to a scenario wherein more than one users want to

percentage statistics in a collection for not unusual services [4], [5]. Social commune is extra practical in e-health networks [6], bodily Wi-Fi networks [7], and virtual mailboxes for computer structures in libraries. They keep copies within the cloud. The first computing example is "one computer, all many," which refers to a state of affairs wherein clients allow greater humans to get admission to their purchaser data [8]. Secondly, from the pattern he shows on this place. A single institution has a license for a couple of customers. Multiple clients have the proper to trade their access on the same time. Consider this actual-global situation: a research institute each member of a research employer desires to link their results and conclusions to the consequences of other individuals of the employer. In this example, people are same, the consumer can access all joint events (for instance, growing thoughts, studies, etc.). Results and experimental facts). But handling and troubles develop because of the workload of neighborhood garages and groups of word exchanges. Outsourcing calls for statistics or time, the computational burden is removed by cloud computing. Management and complicated problems. This is achieved from neighboring garages and reduces the duplication of entries, thereby lowering the load on establishments, such as corporations or people. But the organization's information leaked to the cloud, destroying it. In many cases, it's far the clients with the bottom manipulate in the cloud who do no longer make certain the compliance and security of the statistics stored. But in some instances, the person prefers to alternate the facts within a cloud of unknown author. It's achieved to offer the option of nameless records in a cloud computing surroundings that is important for protection and performance. To achieve this intention, there are many things to don't forget. The motive of the comment is to create a completely nameless surroundings in a very at ease and green institutional way. To reap this purpose, it's miles essential to carry out the subsequent tough duties. First of all, it's far essential to place an arbitrary and variable range of participants inside the employer. In strategic applications, each corporation has a huge number of individuals, and mobility in and out of agencies occurs often. The desired plan is not most effective the handiest, it helps It's a chunk of a pain, but it is the layer of net developers. The most important intention of this assignment is: "Safe access rights and friendly facts." change in public clouds is a trouble that needs to be solved. This

document is publicly available and those records are saved securely. It provides excessive protection and performance. In this component, members of the business venture can talk with one another without confirmation. "Users share straightforward keys, securely download files, and store them in the cloud."

#### RELATED WORK

- 1) A suitable records garage device is a critical part distributed computing Cloud clients utilize a cloud evaluating way to deal with affirm the respectability of information put away inside the cloud. Yet, insofar as the call of the key inspecting sport is imparted to the cloud transporter backer, cloud evaluating will win, regardless of how green the figuring devices. Accordingly, it's far basic to forestall the revelation of private keys since, supposing that this happens, it's far fundamental for limit the damage achieved. Existing distributed computing gadgets depend upon public-key foundation that is generally evidence against key revelation, and in this way has affirmation/confirmation issues. Furthermore, these projects require some PC time on account of uprightness of the data interferes. Identity-primarily based strategies save you access to documents, however restriction harm through key income to simplest open instances before a vital time. They now not guide file listening techniques to detect any key system vulnerabilities. This paper proposes a totally identity-based totally approach for probabilistic property records. Full identification-primarily based safety keeps cloud garage for verifiable time before and after the general public key is generated. It additionally presents batch auditing assist. The evaluation indicates that the cause of the paintings is to face up to the assault of the cloud company, to guard private things from 0.33 Party Auditor and to efficiently confirm the correctness of factors.
- 2) With the rapid boom of cloud-based offerings, suitable strategies uncovered to enormously massive computing power servers will benefit increasingly more attention in scientific networks. An extensive variety of modules is considered the handiest they work thru diverse cryptographic protocols, which can be hard for gadgets with restricted talents, such as RFID tags or video games. Therefore, providing an efficient manner to soundly switch such operations to a (depended on) cloud server is crucial. In this article we advise new inexperienced enlargement rules. (Variable publicity, variable base) of the highest level inside the ambiguity model. Compared with the brand new guidelines, the proposed set of rules guarantees each performance and testability. From this set of rules we will teach how to enforce the perfect encryption of Cramer-Shop and Schnarr's 1/three-birthday subscriptions. We consequently endorse a first rule similar to the rule of Simultaneous excessive-velocity modulation. Finally, we provide an experimental

assessment to demonstrate the performance and normal effectiveness of the proposed algorithms and schemes.

- 3) Business accounting is growing as a completely appealing employer issuer due to its comfort and monetary shape thru cloud computing. Public-primarily based encryption (ABE) has acquired a great deal attention as a manner to create open communication. However, most of the existing ABE responses function on bad components along with immoderate gadget prices and prone security records, which substantially discourage operators from the usage of mobile gadgets as powerful sources. The trouble of concurrently achieving granularity, a huge workload for the proprietor of statistics, and equal privateness of information primarily based on cloud records is absolutely insurmountable. This paper solves this tough problem via providing a completely practical cloud-based totally communication engine appropriate for mobile customers. The proposed solution eliminates the big computational burden by way of including public tool options to perform partial encryption calculations. In addition, verification of the cryptographic grievance wide variety is finished before the decryption step, which avoids the most computational expenses as a result of invalid signatures. For statistical safety functions, Chameleon's own bootloader is used to generate the ciphertext at the fly to keep away from imparting the terminal ID offline. The proposed layout has been proven to be effective against adaptive encryption attacks which can be substantial and constantly emerging due to latest security troubles. A lengthy-time period impact evaluation indicates that the proposed scheme is safe and powerful.
- 4) Cloud Partner gives permission in writing in more than one contributors to freely proportion a group of data, thereby increasing the performance of running in a collaborative surroundings and has rich programming competencies. However, finding a manner to reliably distribute records within a collection and effectively communicating better statistics inside a group are principal demanding situations. Note that the dominant protocols of the respondents played the most vital position in ensuring timely and effective conversation inside the group and Cloud Computing In this paper, we introduce a wholly new clause-primarily based APC consensus primarily based on Symmetric Balanced Injection Design (SBIBD). Protocol, which can assist many human beings to amplify the organization of members within the cloud environment consistent with the complete shape. Interruption of production. Based on the not unusual dreams of the proposed APC model, we recommend a popular system for a trendy preferred APC IC key contribution for maximum individuals. Note that because of the appropriate association of blocks ( $v$ , good enough + 1, 1), the computational complexity of the proposed protocol increases linearly with the variety of

people, and the message complexity decreases dramatically. In addition, the fault tolerance of our protocol allows the cloud PC system to face up to many crucial assaults, which is very similar to the Yi protocol.

#### EXISTING SYSTEM

In previous articles, he proposed the fee of encryption to create reporting systems that attempt to replace applicable transactions with semi-dependent features. Other privileges are designed to protect facts from thieves and intruders. The first response, feature-primarily based encryption (KA-ABE), affords a greener approach to era manipulate with simultaneous granularity, scalability, and recording privateness.

#### Drawbacks

Note that the re-encryption machine gives APC with a higher stage of protection than the PC [14], and continues to be prone to malicious behavior through exchanging facts more than one times with the PC.

#### The statistics transmitted is saved personal;

In our scheme, external records may be encrypted the malicious user's public key. Pcm unique earlier than import. Striker or cloud APC That PC does no longer have an In PC the PC KA-ABE tool, if, within the best phrases, the residences of the Data PC computer are happy via permitting Get PC to be created, the data transmitted Can be explained externally. But on occasion it's amusing to be humorous. phrase exchanges, making it suitable for lots sorts of batch computing.

#### PROPOSED WORK

To triumph over these challenges, a new recognizable organization records control device has emerged because of cloud computing. He referred to and without call. Several authors contributed to this newsletter

#### Arbitrary kind of clients and dynamic settings are supported;

How many PC customers. In real laptop applications, we express the concept of an arbitrary PC that satisfies the structure of SBIBD Prime PC, and diverse PC clients are completely arbitrary. i.e., the fee of the top PC is Northman bounded. Additionally, with a real cloud computing software, customers can join or depart for free of charge. The proposed PC computing device can assist the client's mobility in terms of the provision of the laptop and the PC efficiently has the proper get entry to to the PC key meeting. The PC cannot music any statistics about the statistics stored at the PC in the PC cloud. Security of encryption keys is based totally on elliptic curve cryptography (ECC) and the bilinear Daffier-Hellman (BDH) assumption.. In this way, his computer systems can be securely related to the computer systems of different semi-established computer systems within the cloud.

#### Detectability in unknown environments is

#### accomplished by means of our scheme:

The important factor is that the whole thing in the cloud is tied to the figures of the share of different users. In addition, clients of the anonymous creator can rotate the organization's membership facts. Please inform the PC that within the occasion of a dispute bobbing up from the PC, the Head of Institution will affirm the genuine identity of the proprietor of the mark at the PC based at the signature with the PC data..

#### Authentication and fault tolerance offerings are furnished:

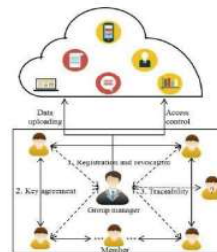
Through key computation, every message is signed help the corporation confirm your felony identity. In addition, the obtained statistics may be blended with a signature installation, so that the authenticity of the cloud record can be demonstrated. Additionally, our design is supported by capability, which could diagnose and cast off attackers to attain a completely unique public key.

#### Advantages

The proposed method successfully generates a not unusual key for changing phrases that can be used to protect the security of transmitted records, even as preserving the convenience of a group conversation inside cloud computer systems.

Authentication of computer feature and access may be applied using organization signing technique. In addition, our system lets in the identification of a person in an anonymous surroundings.

#### SYSTEM ARCHITECTURE



#### Users:

Users include some customers, especially in the oral version of SBIBD primarily based trade. In our project, participants are human beings with comparable hobbies (for instance, wages, teachers and businessmen) who want to make a percent of the cloud change. The maximum annoying aspect when customers store their records in cloud servers, the privacy of factors is outsourced. In our system, peer agencies update the person's consent keys.

#### Cloud:

The cloud gives unlimited storage to customers. In addition to offering green and timely garage

services to customers; the cloud can also offer other offerings. But if he is curious, then the cloud turns into honorable.

That way the cloud no longer deletes or transfers person's facts, however it could participate in the stored records and private identity. The cloud is a part of our semi-impartial plan.

#### Group Manager:

A company supervisor configures controls, works with individuals (i.e., encrypting player IDs, assigning permissions to people in the agency, disclosing the player's personal identification) and detecting breaches. supervisor in our making plans employer provides a birthday celebration of 0.33 in overall for each the member and the organizing group.

In one way, the clients check in to proportion the equal part because the Group Manager inside the cloud information, and so that the person does no longer overlook, that is additionally finished the use Group Manager Second, all participants of the frame agree on a not unusual computer key that may be used to encrypt or retrieve outside facts, in particular in the form of SBIBD. Finally, while warfare arises; organizational leader might also monitor the proper identification of the organization member. Please observe that during our laptop version, computer boot and proper access to control the laptop is treated by the corporation's control.

#### ARCHITECTURE



#### PURPOSE OF IMPLEMENTATION STEPS

##### Step 1:

Open Eclipse and installation a workspace.

##### Stage 2;

Open Eclipse and installation a workspace. Click the "Run as" and "Run on Tomcat Server" displays.

##### Step 3;

We bumped into a mistakes wherein we needed to buy multiple ports.

##### Step 4:

Copy the homepage to Google Chrome and run.

#### EXPERIMENTS AND RESULT

The result of this study is to anonymize, particularly efficient and relaxed cloud data efficiency and availability for commercial collection as. An authentic technique for records series of dependable verbal exchange using crucial awareness and signature series is proposed for paintings with numerous clients inside the open cloud. By signing and verifying the call of the institution, the contributors of the organization can speak secretly, specifically to find out the conduct of the who are there. A shared key series is created in light of the key know-how for member participants to safely transmit and shop their facts. It is critical to notice that the middle getting old process uses a symmetrically balanced tough block engine, which reduces the quantity of labor humans must wait to reap a shared key series. The predicted and affordable opinions show that the proposed technique to distribute the shared block statistics depend is a hit and relaxed.

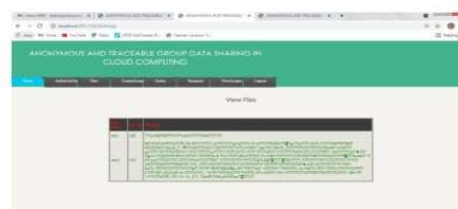
##### Home page



##### User registration



##### View files (group)



#### CONCLUSION

In this endeavor, we offer key association and settlement to address some other organization inconvenience in distributed storage challenge. The proposed strategy, uncommonly principally based at

the SBIBD mark and mark technique, can be utilized to guard the protection of tricky data, and can effectively produce a discussion key ahead of time of the verbal trade that empowers PC frameworks to create the discussion. . . The cloud Note that this paper offers directions for building the SBIBD and a numerical portrayal of the SBIBD. What's more, verification honors and power get right of passage to successful PCs are carried out the utilization of a business membership approach. Moreover, our application finds out about the individual in an anonymous PC climate. As per the elements of the gathering of supporters, the utilization of agreement keys and access freedoms for laptops, admittance to computers for organization, the intricacy of processing laptops and verbal trades with computers, the advancement of PC commitments, straightforward keys and computers encoded records. It is extremely low.

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