

Generous Information Safety System for Investors in Online Trading Secretly using KP-ABE Machine Learning Method

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Abstract: Publishers and investors (pub/inv) have agreed on a framework for the sharing of information as part of a brokering network. However, malicious brokers or brokers who are curious about the data may hack into the system and take the information. This is a suitable way for safeguarding sensitive information and data security subscriptions until brokers begin to disseminate it. To prevent revealing subscriptions and publications, modern techniques need brokers to employ encrypted connections. Even if the preferences of evil publications are protected, the data of innocent subscribers will be hacked, even if they are protected by malicious brokers. When pessimistic brokers are present, the programmed provides a publishing and subscription service that ensures publication and subscription anonymity. As a result, assaults on the KP-ABE algorithms by unskilled traders or antagonistic publishers are futile.

Index Terms: Secure Pub/inv, Investors' Privacy, Publicists' Confidentiality, Collusion Resistance.

1 Introduction

Prospective investors may get data from publishers via publish and invest (public / inv) programmers without having to engage directly with the publishers. Essentially, a network of specialized computers called as brokers delivers publications including publishers' data to interested subscribers. These brokers create a network that cloud service providers may easily access as Software as a Service (SaaS). Material and a collection of tags that identify the contents make up a publication. Subscribers are assigned to periodicals depending on a variety of criteria (subscriptions). To establish if a customer prefers to get particular publications, brokers compare the tags on publications to the preferences that have been recorded. The broker then selects and promotes the desired subscribers. The functionalities of the pub / inv layout have been extensively utilized in different implementations. In electronic health

information systems, the pub / inv strategy is used to communicate patient data with users such as hospitals and pharmacies. A trading system that employs pub/inv systems to alert customers of available stocks is another indicator. Google's Cloud Pub / Inv is an event-driven computing and real-time stream analytics service. Publishers and developers have a limited number of options. Pub / subsystems suffer various safety & confidential issues since information is exchanged over a collection of third party in a centralized multi-party system. Important pieces on topics like healthcare, religion, and politics may come from editors or be submitted by readers. As a consequence, the brokers may have access to critical publisher and subscriber data. In the development of processing systems, it is usual to leverage third-party infrastructure (e.g. cloud storage). Pubs and subs providers A hack of Yahoo's website in 2016 resulted in the loss of 1 billion Yahoo accounts. Because brokers have access to sensitive information and may leak it, it's appropriate to think of them as distribution companies in charge of the security of publications and subscriptions.

A number of works recommend encrypting publications and subscriptions way that agents may up to fit subscriptions to the tags of publications without knowing about their substance, in order to protect interest from untrustworthy brokers. Subscriptions and directories held by brokers must be safeguarded. Malicious brokers may develop relationships with subscribers and publishers as a consequence. The subscription of the innocent investor is validated, and the dealer will always be able to access the material since both the innocent and malicious

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subscribers are members of the same publication. For example, a malicious publisher may publish a false report in the benefit of investors. For example, a dishonest publisher may combine the fraudulent publication's objectives with those of a broker. As a consequence, in order to maintain subscription security, it is important to avoid attacks among traders, publishers, and investors. The methods offered for combating dishonest buyers (or publishers) who act via brokers. To preserve their privacy, each of these solutions requires dialogue between the publisher and the customer. This indicates that the pub / sub model's closely related attribute no longer applies to this function.

The pub / sub structure method provided efficiently secures subscribers' privacy and avoids conspiracy attacks through many brokers without compromising the pub / inv model's tightly linked assets. Several sorts of brokers help the network for organizing and transmitting investor information. The fundamental concept is to separate similar functions into many phases (among authenticated services and publishing labels), each handled by a different broker type. Any broker can only deal with partial facts that cannot be used to extrapolate critical subscription information. Regardless of whether they are working with a compromised broker or a customer, customers are protected (or publisher).

Two separate algorithms are used in the programmed to provide investment protection. For starts, only registered subscribers who employ a technique like the Main Policy Attribute-Based Encryption (KP-ABE) algorithm may access the content of publications. Second, the use of searchable encryption to ensure that published keywords is aligned with investor preferences in a secure manner (SE). In the suggested technique, there is no cooperation between traders and investors / publishers. In this situation, emphasize the need of employing a variety of brokers to avoid bribery attempts in pub/inv deals. This research builds on that idea by giving a complete design, a thorough safety assessment, and a thorough analysis of the results. It also lays out the security criteria for pub/sub systems and offers a technological foundation for cryptographic approaches like KP-ABE and SE.

2 Related Work

Public and commercial distributors that share patients' Online Health Information with e Health networks and medical institutions pay pub and sub-services (such as physicians, hospitals, clinics and Pharmacists).

2.1 Electronic Health Records Of Patients

The pub / sub-model are used by ESIs to communicate health records between clinics, medical practitioners, and pharmacies. According to a doctor from hospital A, a

public may authorize an eHR to be shared with other licensed organizations in hospital B, such as doctors, pharmacists, and medical professionals, in order to diagnose and treat patients more effectively. For exchanging transactions exposed to consumers, Business Exchange Products employ pub / sub frameworks. If the broker is compliant with hostile media, it will introduce vulnerabilities and make assumptions about the preferences of subscribers. Google provides a real-time communications software infrastructure for stream processing and event-driven computer systems. In 2016, a Yahoo hack resulted in the loss of 1 billion client account. Propose that the distributor and user encrypt subscriptions with the markings of the publications even if they are unaware of the contents. When the nature of their subscriptions became public, a malevolent user may team up with a broker.

This generates articles and the associated logos. This encrypts the document's tags and contents until it is written into the broker. A subscription is created based on the preferences of each user, and only publications with tags that fit the subscription are provided. The passwords for Invs and Pubs are controlled by a secret authority. Our main idea is to divide matching activities into three levels, each of which is handled by a different broker type. Allow no more than two types of brokers in the network to join hands while maintaining the content of the interests. Each broker has a limited amount of information and is unable to integrate sensitive data on encrypted interests.

Chen, E., et al [2021] Security risks associated with remote Cloud File Sharing (CFS) have emerged as its use has increased. To solve this problem, we detail a novel resource sharing architecture that combines a client-side Ciphertext-Policy Attribute-Based Encryption (CP-ABE) scheme with a cloud-side CFS service and the enterprise-side Attribute-Based Access Control/eXtensible Access Control Markup Language (ABAC/XACML) paradigm. Using ABAC/XACML-based access controls and attribute credentials, the framework's workflow is prepared to manage encrypted-file writing and reading algorithms. The policy matrix derived from access policy has a major impact on the performance of existing CP-ABE from Lattice (CP-ABE-L) schemes, making it a significant challenge to realize this framework. Finally, we offer an optimum Tiny Policy Matrix (SPM) creation approach that constructs an all-one reconstruction vector using only small components. The enhanced CP-ABE-L method is presented based on SPM to decrease cumulative mistakes to a minimum. In addition, it just provide reasonable guess of the systems parameters needed for a reliable Error Proportion Allocation (EPA). The results of our tests demonstrate the effectiveness of

our method's calculation and storage overloads while also demonstrating the modest parameter size of our technique. Therefore, our new framework, which incorporates optimization methods, is well suited to bolster the safety and productivity of remote CFS operations.[1]

Zhang, C. (2021] Multi-embedded systems develop in the form of distributed architectures as the usage of Internet-based embedded devices grows, establishing a large-scale intelligent system. Although, as a consequence of this evolution, a vast number of embedded devices will inevitably have to access the internet, creating data security threats to many. It is addressed in this article how a distributed multi-embedded system architecture necessitates multi-authority attribute-based encryption (ABE) to provide access control for each node. Therefore, for the purposes of data transmission in the IoT environment, a secure node access control solution is necessary. It's an invisible method of user authentication. It is very scalable and supports multi-authority ABE. Furthermore, we certified that the suggested system has more functional qualities than current cloud computing solutions while performing similarly to or better.[2]

GOVARDHANA, G. (2019] "Enhancing security of medical cloud records by re-encryption approach" is a simple model for safeguarding patient medical data. Patients may look for records that have been uploaded to the cloud by the authority's owner. To address this issue, provide a modern cryptography primitive, the conjunctive keyword search with defined tester and timed enabled proxy re-encryption function (RedtPECK), which is a time-dependent SE technique. It might allow patients to delegate partial access privileges to others so that they can do restricted searches on their data. It would improve the security of documents uploaded to the cloud. Since this key is required for the retriever to access patient data, this will investigate the security of encrypted schedule data by enabling authorization for legitimate people with the re-encrypt keyword. By using the key word search provided by the controller of collective data, the retriever may get the requested encrypted data.[3]

Zhen, Y. (2011] The PHR service, or personal health record, is a brand new way for people to share medical records with one another. It may be used by patients to produce, manage, and control their own health data, and to share such data with other users and healthcare providers. However, in practice, a PHR service is often hosted by third-party cloud providers to facilitate interoperability. Outsourcing patient health records to cloud servers, however, has sparked significant privacy concerns, not only because cloud providers are

normally not protected organizations under HIPAA, but also because of the increasing frequency with which cloud data breaches have been reported in recent years. In this thesis, researchers present an attribute-based encrypted PHR system to ensure user confidentiality (ABE). With this method, patients may encrypt their PHRs before storing them on semi-trusted cloud servers, shielding them from unauthorized server access. At the same time, patients have full say over who may see their PHRs by providing fine-grained, attribute-based access permissions to individual data users, with different users having access to different components of the patient's PHR. Additional features of our system include the use of ABE for the purpose of populating PHR data derived from an enterprise-level EHR system (EHR). To evaluate our strategy, we create a Linux library that uses key-policy attribute-based encryption (KP-ABE) algorithm primitives. Using the Indivo PCHR system as inspiration, we built a PHR programme that encrypts and uploads prescriptions and diagnostic notes to PHR servers using KP-ABE from a doctor's computer. We evaluate the effectiveness of numerous ABE methods and the Indivo PCHR system's data query time when PHR data is encrypted.[4]

Someswar, E. D. G. M. (2014] Cloud's recognition and achievement have risen as a result of recent technological advancements. This new worldview is gaining popularity because it provides cost-effective models for information transport, storage, and focused processing. In any way, these promising stockpiling administrations introduce a slew of testing configuration challenges, owing to the lack of information management. These issues, including information categorization and information trustworthiness, have a significant impact on the cloud framework's security and exhibitions. For this reason, some security professionals advise keeping data in a scrambled format on cloud servers, since certain risk models presume that the cloud specialized institution cannot be trusted. Some people think that cloud service providers can be relied on, while others think that malicious third parties and angry cloud users provide the greatest risk. Furthermore, a cloud client can never rule out the possibility of a server failure. As a result, there are a few issues that need be addressed in terms of cloud security and protection. This proposal aims to stop this trade while taking into account two information security considerations. On the other hand, it focuses on information security, which forms increasingly difficult with reliable information exchange across a diverse set of customers. It necessitates the importance of outsources information & the effective exchange of unscrambling keys across several authorized customers.

Consequently, we first proposed an alternate method based on ID-Based Cryptography (IBC), in which each client serves as a Private Key Generator (PKG). So, he creates his own open components and utilizes a mystery to figure out his own private key. This pledge looks to aid in information security, secrecy, and resistance to unauthorized access throughout the sharing process as a result of the IBC features, all while accounting for two actual risk models—a genuine yet inquisitive server, and a hostile client enemy. In the second place, we describe CloudaSec, an open key-based system that advocates for the isolation of membership-based key management and privacy-focused diverging encryption approaches. That is to say, CloudaSec paves the way for a wide variety of transmission arrangements in the cloud and provides robust security assurances for any data that is outsourced there. CloudaSec's effectiveness in a range of information sharing situations has been shown by trials run under Open Stack Swift, which have taken into consideration the effects of cryptographic operations on the client side. Then there's the issue of PDP (Proof of Data Possession). Actually, the cloud client should have a fast method for doing periodic remote integrity verification without storing the information locally, taking into account three important factors: security level, open certainty, and execution. The customer's required stockpiling and calculating capabilities, as well as the vast quantity of outsourced data, add to this concern. With the purpose of meeting this security need, we first describe another zero-learning PDP technique that provides deterministic honesty check guarantees based on the Euclidean Division's uniqueness. These promises are intriguing when compared to a few offered strategies that demonstrate probabilistic approaches.

SHOPS, a Set-Homomorphism Proof of Data Possession diagram, are proposed at that moment to support the three levels of information confirmation. With SHOPS, a cloud client may confirm not only that a certain data document is dispersed among several capacity devices to reach the appropriate level of failure tolerance, but also that the document has been shown to be owned by the remote server. By elucidating the set homomorphism property, we show that the characteristics of set operations like union, convergence, and incorporation are also flexible. The quality of the many-sided preparation in SHOPS is inadequate, despite the high level of security. For instance, SHOPS reduces the cloud service provider's own energy consumption by dispersing computations over many nodes. Every hub confirms the square sets of neighborhood information. This is to create suitable, later evidence over information square layouts to meet a few demands, such as proofs accumulation.[5]

Cui, S., et al [2018] The pub/sub paradigm of communication is a loose coupling that allows for the routing of publications. Through a network of specialised third-party servers known as brokers, publications are disseminated to readers without directly connecting the publishing company and the reader. Yet, since they can learn so much about their clients, these brokers raise privacy and safety issues. It is possible for a malicious broker to deduce the preferences of subscribers by collaborating with malicious subscribers and/or malicious publishers. With our approach, brokers are kept in the dark about their clients' intentions, and only authorised users have access to publicly available information. Additionally, the suggested protocol is immune to collusion assaults by dishonest brokers, publishers, and subscribers.[6]

Yang, K., et al [2017] Distributing and receiving data selectively is simplified with the help of a publish-subscribe service for data. Given the vast amount of data generated on a daily basis, cloud services, with their cheap but strong storage and processing capabilities, are gradually becoming the most perfect platform for data publication and subscription. But it's possible that the cloud server cares about both the public info and the subscribers' data. In this research, we suggest a new kind of data publishing and subscription system, called Attribute-Keyword Publish-Subscribe (AKPS), for use with cloud-based infrastructures. By using attribute-based encryption with decryption outsourcing, we safeguard the privacy of the published data from the cloud server and other non-subscribers, enabling the publishers to restrict data access while moving the significant decryption overhead from the subscribers' devices to the cloud server. To protect subscribers' privacy and ensure they only get relevant content, we suggest a new searchable encryption. Unlike previous symmetric searchable encryption systems, the AKPS doesn't need its publishers and subscribers to exchange secret keys, hence it can handle a large number of both. In addition, neither the publishers nor the subscribers may assume the role of the other. To prevent users from circumventing the access/subscription policy verification method, the AKPS ingeniously links the two policies together using two separate secrets. One secret contains the ciphertext and tags, while the other contains the subscription trapdoor and the pre-decryption key. The security proof and performance evaluation show that the proposed AKPS system is both secure in the random oracle model and effective in practise.[7]

Esposito, C., et al [2014] Successful implementations of publish/subscribe services have enabled the creation of

modern large-scale mission-critical systems. Given the proliferation of cyberattacks against most mission-critical systems, security has emerged as a key non-functional criterion for defining such systems. Because of this, it's crucial that the selected publish/subscribe services have the means to protect the data in transit, maintain proper behaviour, and repel likely attack scenarios. The field has made great strides, but there are still many obstacles to overcome. By surveying the academic literature on secure publish/subscribe services from 1998 to 2014, this paper provides a review of the current state of the art in the market, an introduction to the ideas of securing event notification, and an analysis of the relevant state of the art. This is followed by a discussion of the most pressing problems that need to be answered by future studies.[8]

Asghar, M. R., et al [2014] Both business and scholars have increasingly focused their attention on opportunistic networks. Without the requirement for a specific IT infrastructure, these networks may be utilized for a variety of applications. In the context of opportunistic networks, content sharing in particular has received a lot of attention. An important aspect of opportunistic networks is their publish-subscribe structure, which allows users to both post their own content and subscribe to the content of other users. Any user with a Smartphone may act as a broker, spreading news and their own personal interests throughout the system. However, privacy and security issues are particularly problematic in opportunistic networks. Untrustworthy brokers may threaten users' privacy by understanding their preferences, as well as acquire illegal access to the material they distribute. This study discusses the research issues associated with the interchange of material and interests without jeopardizing subscribers' privacy or giving unauthorized access to untrustworthy brokers. This research addresses the security and privacy concerns associated with interest and content sharing in opportunistic networks. We demonstrate the solution's practicality and efficiency via the development of a prototype and an analysis of its performance on smart phones.[9]

Esposito, C., et al [2014] Lessening the number of times a patient must undergo the same test and improving the efficiency with which healthcare systems are managed via data interchange are two potential methods for lowering the cost of medical treatment. Existing Health Information Systems' ability to retrieve clinical records upon request is inadequate for better disseminating treatment results and test data. A notification solution is necessary to inform users when their desired clinical records are prepared so that they may access them via a

conventional HIS. This notification solution must integrate the event-based information exchange patterns that characterise the current integration of multiple health information systems [10] .

This study presents a practical and efficient infrastructure for the asynchronous distribution of clinical articles [11] . Bridge the gap between clinical staff and administrators, between primary and secondary health care. Using a publish/subscribe service correctly enhanced to alert collections of linked documents, we have come up with a solution[12] . The Web Service Notification standard was used to implement it on a web service-based platform, making it simple to integrate and maintain [13]. A thorough evaluation of the developed solution's appropriateness for identifying medical data & evaluating the announcement latency in various use cases has been carried out.[14]

Cinque, M., et al [2012] Large-scale complex critical infrastructures of the future are dependent on middleware because they are envisioned as federations of many heterogeneous systems linked over the Internet[15] . Existing data distribution approaches are still unsatisfactory since they cannot scale and jointly ensure certain QoS features. To add insult to injury, if middleware isn't able to handle Internet best-effort delivery and node failures, then the accuracy and timeliness of data transmission will suffer[16].

Data distribution across big, complex critical infrastructures may be made more robust and scalable by using a peer-to-peer technique. The growing size and diversity of the federated system may be managed by using epidemic dispersion algorithms across peer groups and semi-actively replicating group leaders. Extensive simulation tests using Stochastic Activity Networks demonstrate the approach's efficacy [17]

Ion, M., et al [2012] Applications communicate indirectly and asynchronously using the publish/subscribe architecture, a loosely connected communication paradigm. A network of brokers distributes events generated by publishers to apps that are interested in receiving them. Brokers may employ subscriber-specified filters to route events according to the subscribers' preferences. It is still a challenge to support the secrecy of communications transferred. To begin, it is preferable that no technique employed to secure the secrecy of events or filters necessitates the exchange of secret keys between publishers and subscribers. Loose coupling of the model is actually thwarted by such a constraint. Furthermore, the broker should be able to do event filtering to route events to interested parties without restricting the expressiveness

of filters under such a scheme. These challenges are not adequately addressed by current solutions [18]

Bakken, D. E., et al [2011] The distribution side of "smart grids," specifically enhanced metering, has been the focus of most of the recent debate. As a result of these issues, today's electric systems face a wide range of obstacles. Coherent and real-time data measurement is an emerging technology that may help improve the power system. Today's electrical production and transmission face significant issues, which these measures are able to assist solve in this research. We take a look at some of the current and future uses of coherent, real-time measurements. For various power applications, we explain, normalise, and then quantitatively compare critical aspects that determine how the delivery system should be conceived. People or computers are involved in the loop, as well as aspects like latency, rate, importance, quantity and geographic scope for inputs and outputs. An information transferring system that supports these implementations must meet certain minimum communication needs, and we may derive implementation recommendations from this. In this article, we review the current state of the art and investigate the limitations of low-level network protocols' ability to meet these requirements when used alone, as well as the shortcomings of existing commercial middleware solutions and utility standards [19].

Shand, B., et al [2011] An event-based system may be used to model information security by integrating security policies into the system. In the applications we are developing, it is necessary for this information to be transferred in real time and stored permanently for further analysis. Data principals may be dispersed among a federation of independent administrative entities. To fulfil their duties with regard to the information stored and sent inside and from domains, administrators must establish and execute a comprehensive security policy. Given the long-term nature of protecting patient privacy, healthcare seemed like a good fit for our event-driven paradigm example. Context-aware parametrized role-based access control is the initial stage in implementing authorization rules at the client level (RBAC). We next examine the additional requirements for secure information flow across the infrastructure components that aid in inter-

domain and intra-domain communication. We show how this method may be used to the study of event security in highly distributed systems. [20]

Delamer, I. M., et al [2006] The CAMX framework allows for the standardisation of machine-to-machine communication and the integration of control software applications via the use of message-oriented middleware. CAMX. In CAMX frameworks that allow for publish/subscribe XML messages, a component known as the message broker (MSB) provides the messaging service through a web-based interface. It is a challenge for MSB-based systems to handle the massive quantities of message traffic typical of modern industrial systems. For starters, this essay tackles the challenging task of building distributed MSB frameworks by presenting many design patterns, with a focus on both globally distributed federations and locally distributed clusters. We develop a unified architecture that makes advantage of the various design patterns by combining federated frameworks with locally distributed clusters. A service-based approach is used to provide an uniform user experience for MSB components that are either federated or locally deployed. The service-oriented methodology also allows for the dynamic discovery of resources and the automated invocation of (re)configuration and messaging services. The formal ontology of semantic web services adds meanings to the services to facilitate automated service discovery and selection. A peer-to-peer discovery technique is used to disseminate semantic service ads. The method given in this work is applicable to any distributed event-based manufacturing system, not only the CAMX instance.[21]

3 System Architecture

Protecting Investors' Privacy in Online Trading Systems is a proposal to guarantee that the investor's privacy is respected [22]. When an investor wishes to create a demat account, they will contact brokers, who will gather the necessary information from them [23]. The acquired data might be sent to the Publisher, who owns the majority of the stock [24]. Because there is a risk of personal information being misused when an investor shares their information with a broker, the information given by the investor should be encrypted before being shared with the broker as shown in figure 1 [25].

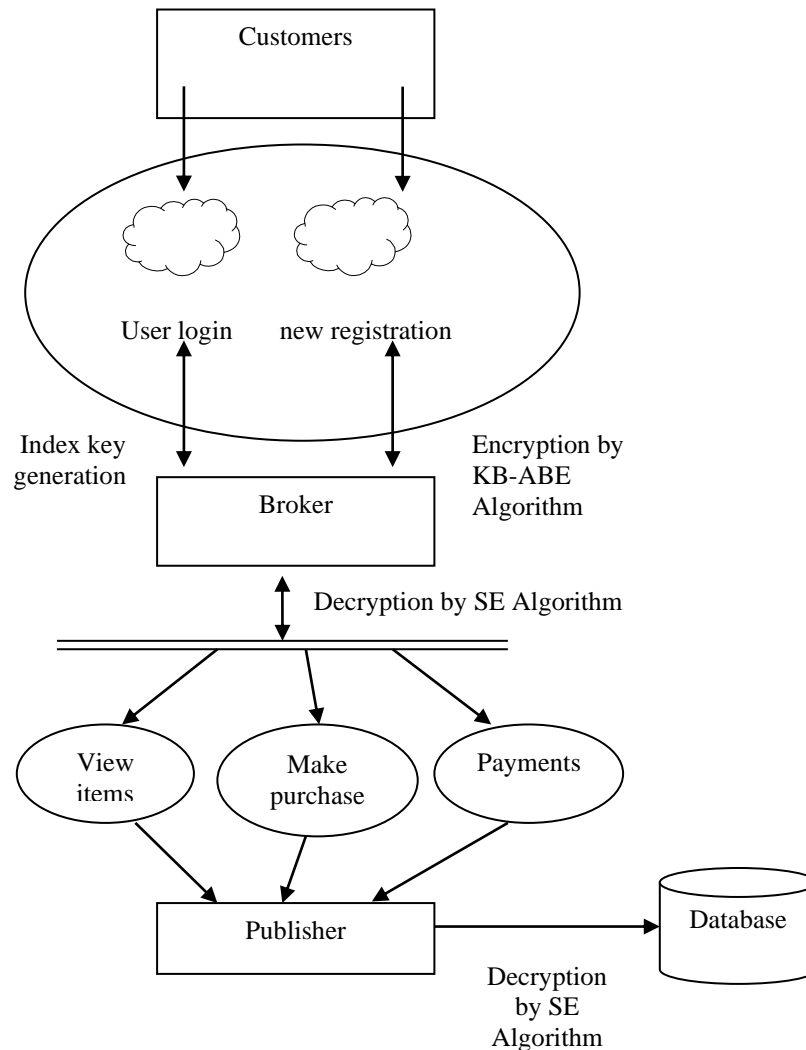


Fig 1 System Architecture

3.1 Investors

Those who are unable to go directly to the shopping market might do so via brokers. Investors use the shopping platform to promote their items [26].

3.2 Brokers

Brokers are individuals who purchase and sell equities on behalf of customers on the stock exchange [27]. For investors who establish a demat account, the brokers will offer unique index keys. For establishing a demat account, they impose a brokerage fee. The brokers will be licenced by the SEBI (Security Exchange Board of India) [28].

3.3 Publishers

This generates articles and the associated logos. This encrypts the document's tags and contents until it is written into the broker [29].

4 Proposed System

This generates articles and the associated logos [30]. This encrypts the document's tags and contents until it is written into the broker. Only publications that follow the subscription tags are provided, since each user decides a subscription by value [31]. The keys to Invs and Pub are controlled by the secret authority (SEBI). The basic principle is to divide interest and tag matching processes into three stages, each of which is handled by a various type of distributors [32]. In this framework, allows 2 types of distributors to merge hands while maintaining the content of the interests [33]. As the number of brokers grows, there are fewer specifics that can be gleaned from sensitive information on encrypted interests [34]. As a result, even if evil Invs or Pubs are paired with any 2 kinds of distributors, they will be incapable to determine the wants of innocent Invs from any of the three styles recommended in our method as shown in figure 2 [35].

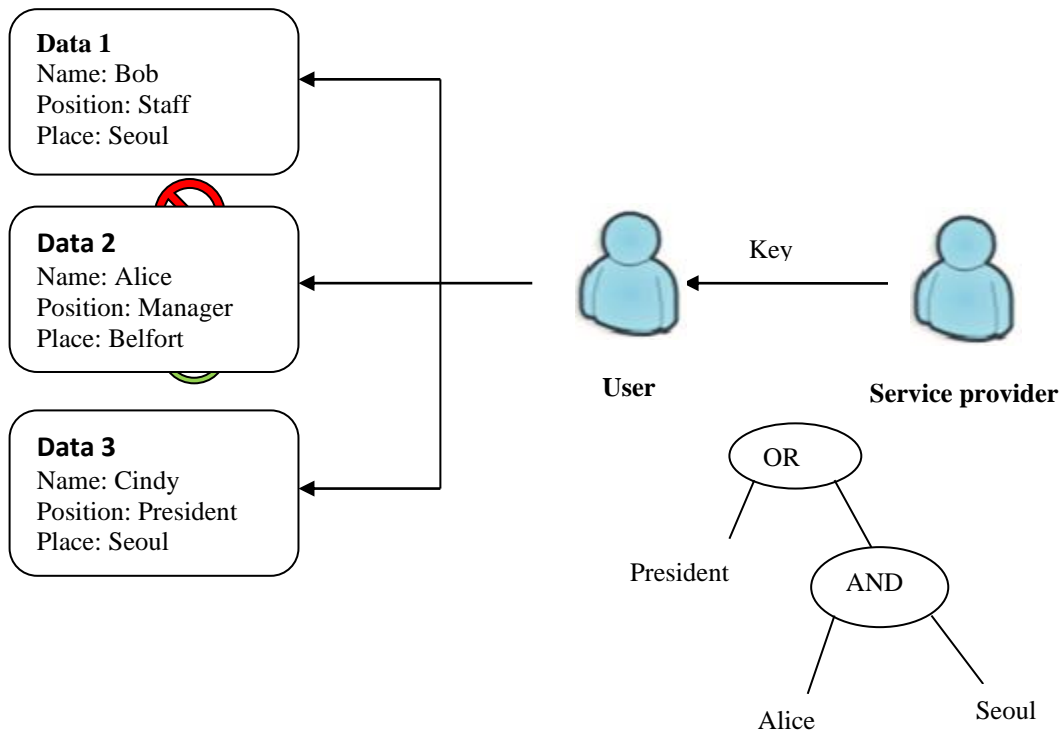


Figure 2. KP-ABE Method

4.1 KP- ABE Algorithms

Users' private keys are associated with a non-monotonic access control file in KP-ABE (Key Policy Attribute Based Encryption), and the encrypted content is tagged with a set of attributes. The User can decipher the encrypted text if and only if the features included in the

cypher text meet the access condition. Publications are encrypted using KP-ABE, and their tags are used to determine the encryption parameters. The private keys used to decode articles are the responsibility of Invs. The publication may only be obtained by Invs who have tags that *match their wants*.

Algorithm 1: KP-ABE Algorithm

Input: KP, A, CT1

Output: CT

- 1: For all (att (y) in τ_D do
- 2: compute $C_y = g^{e_y}$, $C_{yp} = H((att(y))^{e_y}, \forall \tau_D \in A$
- 3: compute $C_{yp} = H((att(y))^{e_y}, \forall \tau_D \in A$
- 4: END FOR
- 5: Generate CT, where $CY = \{C, C', C_{yd}, C_{ypd}, \forall \tau_D \in A: C_y, C_{yd}, \}$
- 6: Upload CT to the cloud

4.2 SE Algorithm

The searchable encryption allowed for the identification of encrypted stuff based on certain accessible information about it without disclosing the content itself. Those key phrases in this case would be able to locate the real text on the web page. As a result, the system would encryption of data with a private key and share the keyword, which would be encrypted using the search provider's public key or a shared secret key.

When the search query arrives, the provider opens the envelop of the keyword collection and matches the search; if a match is discovered, the relationship between the content owner and the requester is established. Without the presence of the search provider, the requester and content owner may negotiate the conditions of accessing the private material.

5 Implementation

To connect with the server, as shown in Figure 3, the

investor/publisher must provide their user name and password. Only then will they be allowed to access to the server.

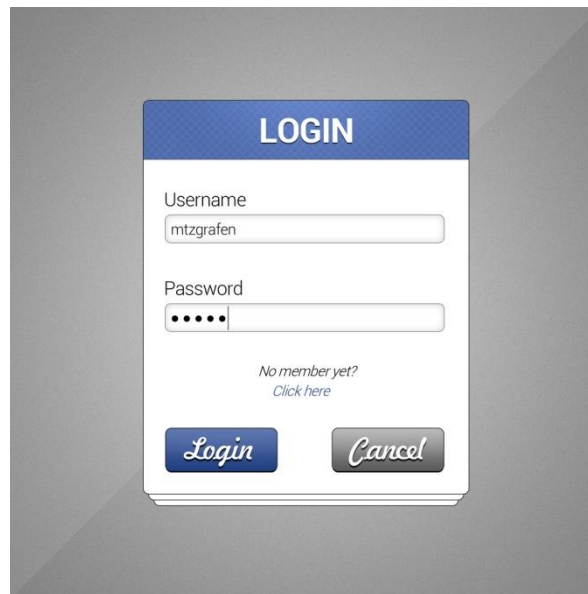
A login form titled "LOGIN" in a blue header. It contains two input fields: "Username" with the text "mtzgrafen" and "Password" with five dots. Below the password field is a link that says "No member yet? Click here". At the bottom are two buttons: "Login" in a blue box and "Cancel" in a grey box.

Fig 3 User Login form

If the user already exists on the server, they may log in immediately; otherwise, they must register their

information. As depicted in Figure 4, such as first and last names, email addresses, and passwords.

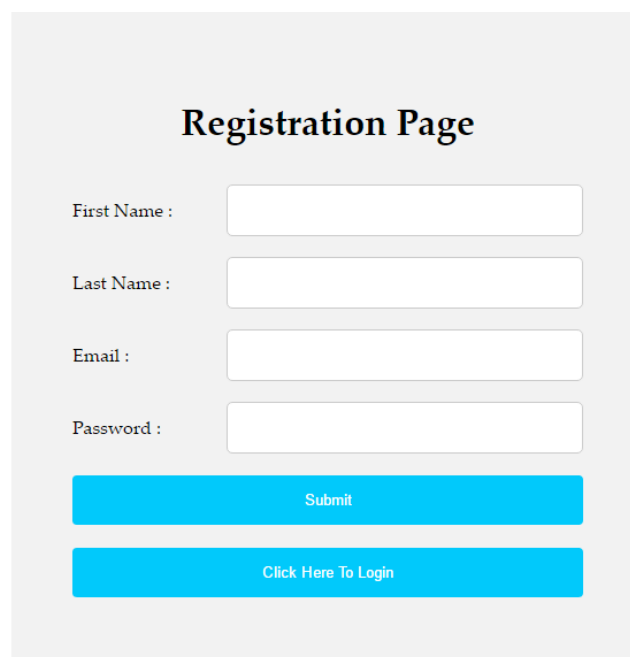
A registration form titled "Registration Page" in a bold black font. It has four input fields labeled "First Name :", "Last Name :", "Email :", and "Password :". Below these fields are two blue buttons: "Submit" and "Click Here To Login".

Fig 4 Registration page

In Figure 5, the viewer may examine the product information.

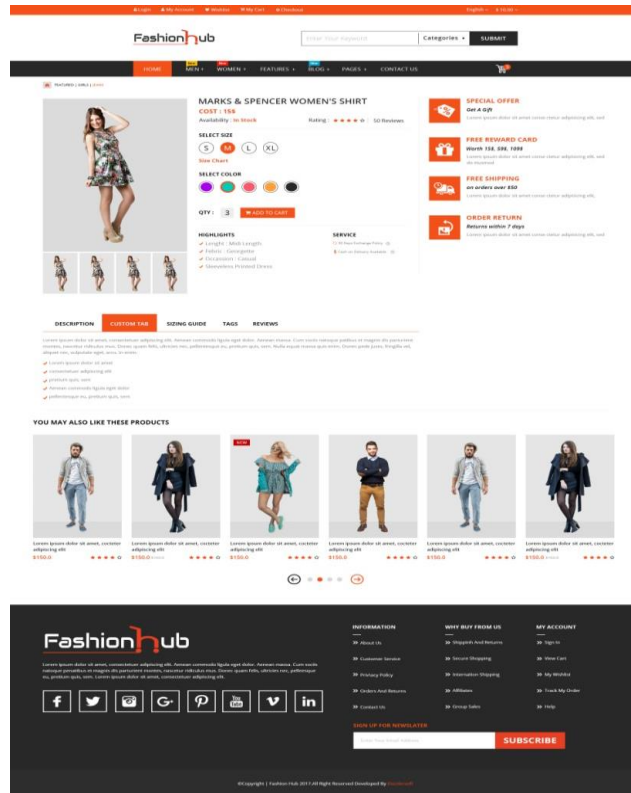


Fig 5 Product details

The publisher's information is shown in Figure 6.

Name: Gender:

Serving as: Appointed as:

Assigned To: ☒ Congregation ☐ Foreign-Language Group

Notes:

Fig 6 Publisher Details`

Figure 7 shows the publisher login information.

ORACLE BI Publisher Enterprise

Sign In

Please enter username and password

Username:

Password:

Accessibility Mode: ☐

English (United States)

Oracle BI Publisher
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Fig 7 Publisher login

Figure 8 shows that the admin approved products

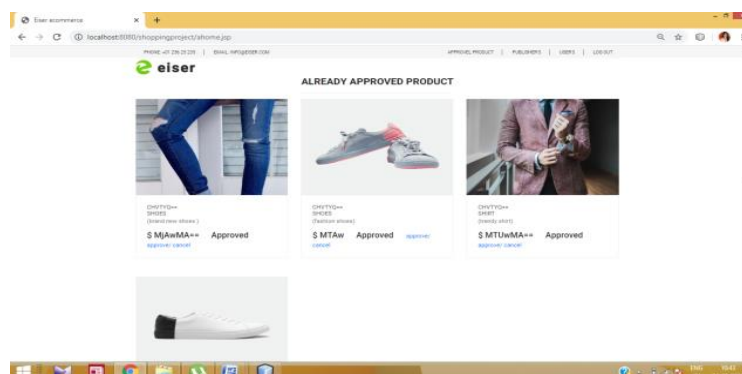


Fig 8 Product approval

6 Conclusion

In this study assumes that the brokers will follow the protocol in good faith. In actuality, the data may be deliberately manipulated by the affected brokers. We should also look at ways to spot brokers' malevolent activity, such as submitting undesired subscriber publications or failing to provide matching publications to needed subscribers. Generally, our purpose is to hold brokers accountable for their actions. Only equality control among coded tags and interests is supported by the SE framework employed in our system. For possible study, we still recommend enabling dynamic activities like selection queries.

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