JEDIC

Journal of Ethics and Diversity in International Communication

| e-ISSN: 2792-4017 | www.openaccessjournals.eu | Volume: 3 Issue: 7

The Application of Blockchain Technology to Land Registration

Vishal S
Bachelor of Engineering, Department of Computer Science and Engineering, Dhaanish Ahmed College of Engineering, Chennai, Tamil Nadu, India

Suriya K, MD Junaid Alam Qureshi
Bachelor of Engineering, Department of Computer Science and Engineering, Dhaanish Ahmed College of Engineering, Chennai, Tamil Nadu, India

N. Selvam
Assistant Professor, Department of Computer Science and Engineering, Dhaanish Ahmed College of Engineering, Chennai, Tamil Nadu, India

Annotation: Blockchain is a new concept that makes use of various approaches, such as mathematics, computation, cryptography, financial models, etc. In this implementation, blockchain is used to record transactions involving digital tokens in preparation for a decentralised land registry. There are four parties involved in this exchange: the registrar, the buyer, and the seller. In light of the close-by land registration procedure, they express themselves. Registration and login are required on the homepage for admin, seller, buyer, and registrar access. Land details such as owner, size, file, document, price, and other details are provided by the seller to the sub-register office, where they are verified by an official and then forwarded to the buyer. Each digital currency transaction is recorded in chronological order so that users can track it without needing to maintain a centralised ledger. Since its inception, the potential uses of blockchain technology have been expressing positive results. Although there have been numerous studies conducted on blockchain security and protection concerns, a comprehensive analysis of blockchain frameworks' security has yet to be conducted.

Keywords: Land Registration, Blockchain Technology, Document, Price and Different, Shipped Off Purchaser.

Introduction

Blockchain is a creation that utilises a wide range of disciplines and methods, including but not limited to science, computation, cryptography, monetary models, and so on. In this implementation, blockchain is used for the land registration procedure, therefore a public ledger of all transactions involving cryptographic currencies is made available [3]. The administrator, buyer, dealer, and registrar are all linked together in this system. Considering the local land registration procedure, they essentially speak for themselves [4]. Basic choices and login values for the site's administrator, dealer, buyer, and register office can be found on the homepage. In order to acquire underwriting from officials and send off buyers, vendors give a land detail such as a landowner, size, record, report, cost, and numerous subtleties to the sub-register office [5]. Clients may easily track deals in complex currencies without having to keep tabs on a central record of transactions because all trades are handled in a sequential request format. Since its inception, blockchain's optimistic application potential have been transmitting the result [6-12]. However, several studies have been

| e-ISSN: 2792-4017 | www.openaccessjournals.eu | Volume: 3 Issue: 7

conducted on blockchain's security and insurance concerns. There is currently a lack of a systematic assessment of the security of blockchain systems [13-17].

Objectives

- In order to streamline financial transactions, a new technology called blockchain has been developed.
- Users are able to make secure changes to the ledger themselves, eliminating the need for a trusted third party.
- In a decentralised setting, it's possible to obtain a cryptocurrency at no cost.
- Open and shareable data ensures complete clarity for everyone concerned.
- Data that has been added is immutable, meaning it cannot be removed in its original form.
- Using blockchain, you can store and transfer data with other users in the same geographical area.
- The cost of information exchange will be limited to that of the original transaction.

Scope of the Project

To project financial data, combat money laundering, and develop necessary encrypted communications systems, it has been slowly but steadily moving into data security. Blockchain's decentralised nature makes it an ideal solution for businesses and government agencies that handle sensitive information [18-22]. Property management companies on a global scale often struggle with ineffective management of their global portfolios. Blockchain enables private information exchange, expedites payments to landlords, and improves due diligence across the board [23].

Project Goals

- Since all of the land transactions are recorded in the public ledger, the system may also be used to verify their legitimacy.
- To record all land sales and purchases, the government has implemented a blockchain-based Land Registration system.

Literature Survey

Outside of the real estate industry or when dealing with a property transaction, most people don't give much thought to the need of property registration. Still, most people view this as just another boring bureaucratic formality, a formality that pales in comparison to the excitement of finally getting the keys to your own place [24-27]. The significance of property registration within real estate markets, however, cannot be overstated. The registration of property is a time-consuming and laborious process in India and other countries as well. The introduction of Blockchain technology within Bitcoin has attracted a great deal of interest by demonstrating the potential to eliminate central floor wishes and reimagine communication between humans and machines by fostering a higher level of trust [28-31]. The poverty of the country makes land registration officials a prime target for fraud and corruption when it comes to supposedly accurate property records. Therefore, several groups lay claim to a territory to varied degrees. Since this information has been combined, its exposure to security risks has increased dramatically. Research into decentralised systems has focused on making them more stable. To address the shortcomings of centralised systems, developers are working on blockchain-based decentralised alternatives. We intend to develop a proof-of-concept system or framework for future use by emulating successful methods for land

| e-ISSN: 2792-4017 | www.openaccessjournals.eu | Volume: 3 Issue: 7

record registration. Our proposed conceptual framework will be useful for Pakistan's land registration agency. We present a conceptual framework that describes the necessary components [1] for a decentralised land record registry system to be implemented by the Pakistani government.

The land registration process in India, as in many other countries, is lengthy and difficult. Land registration also involves a large number of middlemen. The only way to develop a system that not only speeds up the process of land registration but also makes it easier for Buyers, Sellers, and Government registrars to transfer land ownership from a seller to a new buyer is to create a distributed system that stores all the transactions made using smart contracts of blockchain technology. By eliminating the need for middlemen like property brokers, this approach will benefit all three parties involved in the land registration process. This method strengthens the land registration procedure and reduces the number of instances of fraud. Since the system stores transactions in an immutable public ledger, this also makes land transactions verifiable. Blockchain is a distributed ledger in which each block contains a timestamp and a transaction identifier, and each participant in the system receives a copy of the ledger at the same time. There are blockchains that function as decentralised frameworks, such as open blockchains. The system's participants monitor and, by consensus, approve any changes made to the historical data. This investigation revealed an issue: the traditional procedure of land registration is inefficient and convoluted. Whether it's written down or stored on a computer, modifying data takes a lot of time and energy. This study proposes a solution in the form of blockchain-based, web-based land registration, which would allow for the elimination of this issue. We gauged respondents' familiarity with and enthusiasm for blockchain and its use to online land registration. We studied information from 54 college and university students and working professionals from a wide range of disciplines. We came to the conclusion that the growing popularity of e-commerce sites shows that consumers are becoming increasingly at ease making purchases in this digital age. People choose to store their information online since it is convenient and safe [2].

System Analysis

Existing If a client group's quality set is unable to decipher the ciphertext on its own, the data owner may allow the group's secret key to be combined with those of other clients participating in the same or a similar social event. The LSSS system, which we employ, can typically lower the aforementioned estimates and bounds [32]. After that, the central organisation problem is solved by developing a multi-authorization model in light of the Bohen-Lynn-Shacham progress [33-37]. A secure channel for exchanging information between clients was established in the JAVA design. Users can send messages to one another over the private chain in the group to complete the collaborative decryption function, significantly bolstering the security of user attributes. Administrator approval of the registration office is required in this application before any land transactions may be processed and their associated fees calculated [38-41]. Land brokers advertise available properties to prospective buyers, who can then make an offer to buy, have the agreement endorsed by the land registry, and have a patta or citta document created. The SHA hashes have broken down the structure and encoding data into 64-bit chunks, thus the DES hashes must have contributed 64-bit chunks of plain text [42-47]. Using a blockchain-based system with features like distributed availability or a crisscross network, the hashed and modified 64-bit records have been stored. Since its inception, blockchain's optimistic application potential have been transmitting the result [48-51]. The blockchain's security and insurance concerns, however, have been the subject of numerous studies. There is a lack of a systematic assessment of the safety of blockchain systems at the moment (fig.1).

JEDIC
Journal of Ethics and Diversity in International Communication
| e-ISSN: 2792-4017 | www.openaccessjournals.eu | Volume: 3 Issue: 7

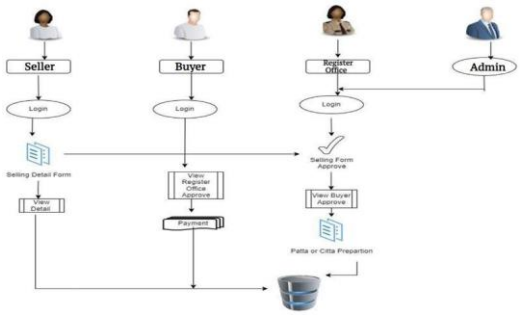


Figure 1: System Architecture

To ensure privacy, we use a Hash code Solomon technique and suggest placing certain data on both the local machine and the fog server, both of which are established by the system architect [52-55]. This method, which is based on AI, can also determine what percentage of data is kept in the cloud, in the fog, and on local machines. Our technique, which is a potent addition to the current cloud storage plan, has been proven feasible by theoretical safety analysis and experimental evaluation [56-59]. Object-oriented modelling relies heavily on the use case diagram. It is employed for both high-level conceptual modelling of the application's systematics and low-level modelling, which entails turning the models into code. In order to do this, we first present a data proposal in our component diagram; in this data proposal, we employ the Hash-Solomon Code Algorithm to encrypt the data (fig.2).

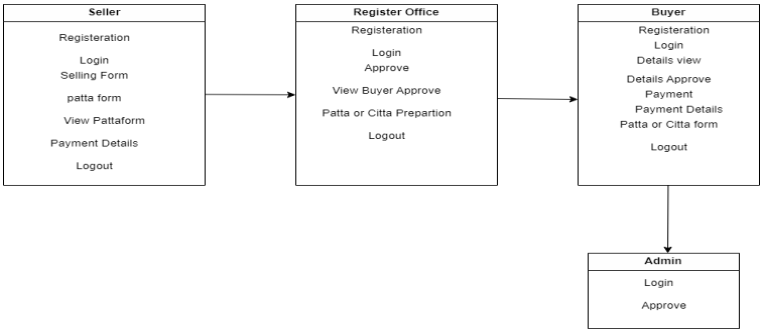


Figure 2: Class diagram

Class diagrams are a static structural diagram that display a system's classes, their properties, and the connections between them to illustrate the system's structure [70-75]. Classes in a class diagram are symbols for the most important programmatic elements and their interconnections (fig.3).

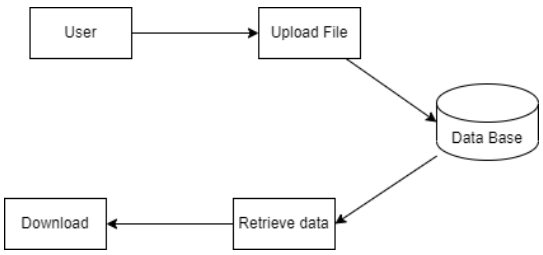


Figure 3: Object Diagram

In Unified Modeling Language (UML), an object diagram is a visual representation of the current state of a modelled system. An object is a class instance at a specific point in time, and it might have its own independent state and data values. Similarly, a class diagram is represented by a static UML object diagram, which depicts the precise configuration of a system at a given instant in time

JEDIC
Journal of Ethics and Diversity in International Communication
| e-ISSN: 2792-4017 | www.openaccessjournals.eu | Volume: 3 Issue: 7

[76-81]. So, an object diagram is a subset of a class diagram or a communication diagram that includes the objects and their connections. Sometimes this is the case, and sometimes this is a reasonable abstraction, but in order to draw a state diagram, the system being represented must have a finite number of states [82-89]. There are numerous state diagrams, each with its own subtleties and meanings. Make a preliminary suggestion in our state diagram. Our component diagram begins with a data proposal for this purpose. In this strategy, we encrypt information using the SHA Algorithm. Our sequence diagram demonstrates the interplay and hierarchy of activities. Please consider our proposed sequence diagram. Our component diagram begins with a data proposal for this purpose [90].

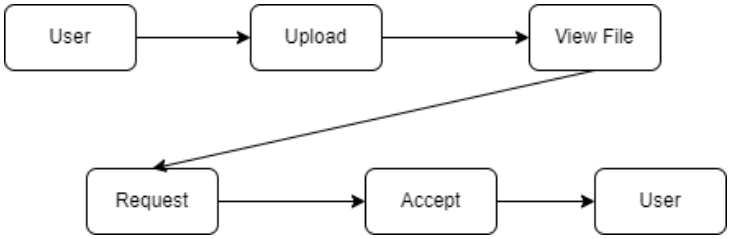


Figure 4: Collaboration Diagram

Originally introduced over a decade ago, the concept of a collaboration diagram—also known as a communication diagram or interaction diagram—has been modified as modelling paradigms have developed. The objects are depicted as squares with labels inside them [91-95]. These designations are preceded by colons and may be highlighted. Lines joining the rectangles represent the connections between the objects (fig.5).

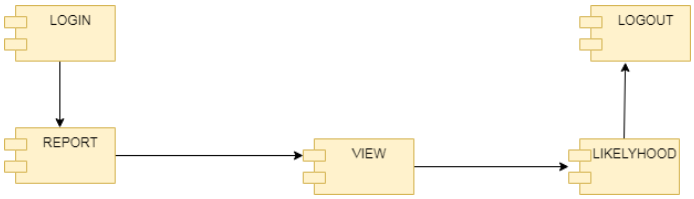


Figure 5: Compound Diagram

Component diagrams are used to display the interconnections and interdependence between different parts of a programme [96-101]. A system's components can be thought of as a container for the logical elements that indicate their role in the system's operation. Components also rely on the functionality provided by other components by way of an interface [102]. This diagram serves a different function than the others we've looked at. It doesn't explain how the system works, but it does detail the parts that bring about those functions (fig.6).

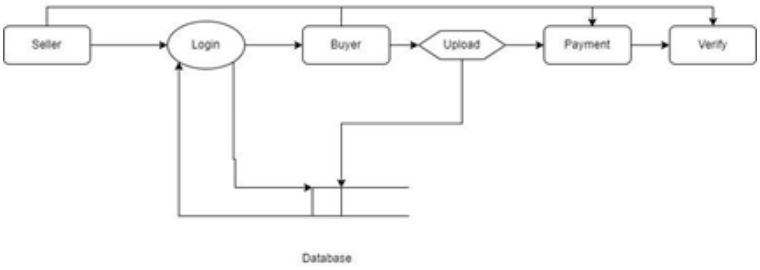


Figure 6: Data-flow Diagram

The data flow in a process or system can be depicted using a data-flow diagram (DFD) (usually an information system) [103]. The DFD also details the outputs and inputs of each component and the

process as a whole. No decision rules or loops are present in a data-flow diagram. A flowchart can illustrate data-driven processes. Entity-relationship diagrams (ERDs) are a type of data modelling used to visually represent the entities and relationships inside a given information system [104-109]. An entity relationship diagram (ERD) is a conceptual and symbolic data model that stands in for the entity framework itself. One of the source or destination nodes in a data flow must be a process. A more detailed representation of a process, broken down into its constituent steps, can be drawn using a second data-flow diagram.

Project Description

Therefore, the registered office's search information base remains a mystery. Cross-referencing the Patta or Citta name structure frequently when registering property. Changing the name of a property in a patta should be a problem for both buyers and sellers. If all of the land under a given overview number belongs to Person A, then the patta should be kept in Person A's name. You can petition the Tahsildar/Zonal representative tahsildar in your region to remove the name of the separated person from the patta if someone else's name has been added to it. The patta for a piece of land that belongs to both A and B is known as a joint patta since it is held in both of their names. A database management system (or similar system) transaction represents a discrete unit of work executed on a database and processed consistently and reliably apart from other transactions. Safe hashing using SHA stands for the process [110-115]. Information and declarations can be hashed with SHA, which is a modified form of MD5 that is widely used. Using bitwise operations, isolated increments, and pressure capabilities, a hashing calculation compresses the data into a structure that is difficult to decipher. You may be wondering if it is possible to decipher or break hashes [116].

Hashing is similar to encryption, with the key difference being that the data can only be hashed once, and the resulting hash digest can't be cracked without a brute-force attack. For a visual representation of the SHA calculation in action, see the image below. SHA generates a new hash whenever the message is altered, even if only one character has changed. For instance, the hashing of two similar but distinct messages, such as "paradise," is one-of-a-kind. However, there is a difference between capital letters and lowercase letters. The SHA-1 hash of the original message is "06b73bd57b3b938786daed820cb9fa4561bf0e8e," or its digest. The SHA-1 hash summary for the second comparative message looks like this: 66da9f3b8d9d83f34770a14c38276a69433a535b. This is the "torrential sliding impact" that has been mentioned. Given that any alteration to the message will have an effect on the final output, this has profound implications for the field of cryptography. This will make it harder for attackers to figure out what the hash digest originally stated and what it's saying to the recipient, regardless of whether the message was altered enroute. If a unique message was altered in any way, a SHA can assist reveal that as well. Since each hash condensation is distinct from the others, a client may tell if even a single letter has been altered by comparing it to the original hash digest. The deterministic nature of SHAs is a key feature. If the hash capability is known, then any client or computer system can generate an identical hash digest. Each SSL testimony on the Internet must have been hashed with a SHA-2 capability, in part due to the determinism of SHAs [117-121].

Secure Hashing Calculations (SHAs) are required in all forward-looking marks and declarations relating to SSL/TLS associations, as was just mentioned. SHAs are used by many different applications, including SSH, S- Emulate, and IPSec. Passwords can also be hashed using SHAs, however in this case the server will need to remember the corresponding hash values. Therefore, an attacker who obtains the data set containing all the hashes does not gain immediate access to all the plaintext passwords; instead, the attacker must first crack the hashes before they can use the passwords. Records' SHAs can also serve as trust indicators. If a document is altered en route, the

| e-ISSN: 2792-4017 | www.openaccessjournals.eu | Volume: 3 Issue: 7

hash digest computed from the hash capability afterward will not be identical to the hash digest computed and delivered by the document's owner. Now that we know how SHAs are put to use, the question remains: why should we bother with a Solid Hashing Calculation? Their ability to deter would-be attackers is a common justification. However, some methods, like as brute-force power attacks, can reveal the plaintext of the hash processes; these methods are made extremely challenging by SHAs. Using SHA-2 to hash a secret phrase can make cracking it take years or even decades, which means resources are being wasted on what amounts to a relatively simple secret key and may deter some would-be attackers. Another advantage of using SHAs is that each hash digest is one of a kind. There will be very few failures with SHA-2 in use, therefore even changing a single word in a message can cause a different hash digest. Due to the lack of repercussions, a scenario where an attacker would have an easier time cracking the Protected Hashing Calculation cannot be found. These are only some of the many reasons why SHA is widely deployed. Feasibility studies seek to rationally and objectively identify the opportunities and challenges given by the environment, the resources needed to carry through, and the chances of success for the current firm or proposed endeavour [122-127].

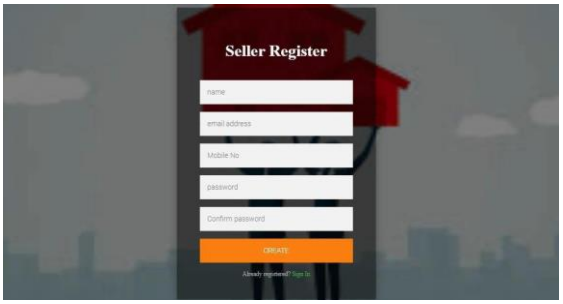
The two most basic factors in determining feasibility are the amount of money invested and the value gained. Therefore, a well-structured feasibility study will include information like the company's or project's history, the product's description, financial statements, operational and managerial details, marketing studies and policies, tax and regulatory obligations, and legal and financial data [128]. The technical development and implementation of a project usually comes after a feasibility study has been conducted. Testing software without first understanding its design, syntax, or internals is called "black box testing." Like most other types of tests, black box tests require a definitive source document like a specification or requirements document to be written from. Testing methodology in which the code being tested is hidden from the tester. There is no way to "see" within. Without taking into account how the software actually operates, the test merely offers inputs and reacts to outputs. Understanding how a product works on the inside allows testers to make sure "all gears mesh," or that the product runs as expected and that all of its internal components have been put through their paces. The software's functional needs are the primary focus [129].

As a form of software quality assurance, "unit testing" involves running tests on discrete sections of code or groups of programme modules along with their related control data and usage and operation processes. A unit is the smallest observable chunk of code in an application. Units in procedural programming can range from a single function or process to an entire module. In object-oriented programming, a unit can be anything from a single method to an entire interface (like a class). Unit tests are small snippets of code written during development, either by the developers themselves or by white box testers. Each piece of code in the source code is evaluated for its usability. A unit is the smallest determinable chunk of code in a programme. All classes are put through their paces to ensure they are performing as expected. Unit testing entails the creation of test cases that verify the correct operation of the underlying programme logic and that the inputs to the programme provide expected results. Validation of internal code flow and all decision branches is essential. It's the process of making sure that each piece of the application works as intended. It's done after each component is finished but before they're integrated.

The test cases in functional testing are based on the specifications of the software component being tested, making it a sort of black box testing. Functions are tested by observing their responses to input, and the underlying structure of the code is rarely taken into account (unlike in white-box testing). What the system does is typically the focus of functional testing. In contrast to system

testing, which "validates a programme by verifying it against the published user or system requirements," functional testing "verifies a programme by checking it against... design document(s) or specification(s). There are normally five phases to a functional test. The process of figuring out what jobs the programme will have to do. The goals of testing are to measure the system's responsiveness and stability under a specified workload. The system's scalability, dependability, and resource consumption can all be examined, measured, validated, or verified. Performance engineering is a relatively new field in computer science that aims to embed performance into a system's architecture, design, and implementation, and performance testing is one of its subfields.

Integration testing is a methodical approach of constructing the programme structure while simultaneously running tests to unearth related issues. It is unrealistic to expect instantaneous functionality from the combination of separate modules due to the high probability of interface problems. Putting them together, or interfacing, is the challenge. Data may be lost throughout sub-functions, and the desired principal function may not be produced; impressions that were satisfactory on their own may become intolerable when amplified; and global data structures may cause issues when merged. When all of the software components have been developed and tested separately, the next step is integration testing. The goal of integration testing is to produce a fully functional system by taking individually tested modules as input, combining them into bigger aggregates, and then running the tests specified in an integration test plan on each aggregate. In preparation for the next stage, all system faults have been fixed (figs. 7 and 8).



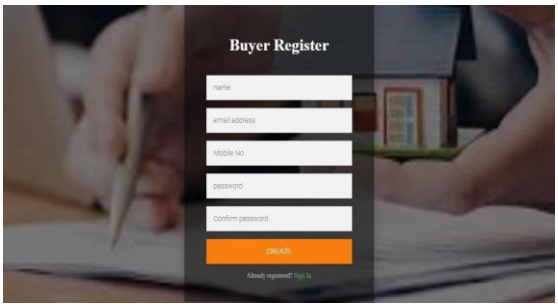


Figure 7: Seller Register Page Figure 8: Buyer Register Page

The primary goal of integration testing is to ensure that the functional, performance, and reliability criteria of the entire design have been met. Black box testing is used to put these assemblages (or groups of units) through their paces via their interfaces, simulating both successful and unsuccessful scenarios with the right choice of parameters and data. Individual subsystems are exercised via their input interface, and simulated use of shared data regions and inter-process communication are also assessed. After testing individual modules, i.e. unit testing, test cases are built to ensure correct interaction across all components inside assemblages, such as throughout procedure calls or process activations.

To ensure that a service, product, or system delivers as promised, it must undergo two distinct processes: verification and validation. These are fundamental to any quality management system, but especially one based on ISO 9000. The prefix "Independent" attached to the phrases "verification" or "validation" indicates that the tasks at hand are to be carried out by an impartial third party. It has been suggested that the question "Are you building the proper thing?" might convey both validation and verification. The terminologies are used inconsistently in daily life. They are often considered synonymous with one another. To determine whether or whether a software or hardware system meets its criteria, it must be tested in its entirety. Black box testing encompasses system testing and stipulates that testers need no insight into the implementation

details of the code or logic being tested. To begin, a software system must be "integrated" with any relevant hardware system and all of its constituent parts must have completed integration testing before system testing can begin (s). The goal of integration testing is to find any discrepancies between the assemblages (integrated software components) and the hardware. System testing is a subset of quality assurance testing that focuses on finding problems with the "inter- components" and the entire system.

Functional Requirement Specification(s) (FRS) and/or System Requirement Specification(s) (SRS) provide the framework for system testing (SRS). During system testing, every aspect, from the blueprint to the user's expectations, is put to the test. It also plans to go above the requirements laid out in the software/hardware specification in its testing. Since no system would be of any use if it failed to generate or take into account both possible outcomes, the next step after validation testing would be to run the proposed system through output testing. Both can be found in print and on the screen. The final product conforms to the user's specifications. Therefore, validating the output does not lead to any changes being made to the system. The success of a system depends on how well received it is by its users. User acceptance testing involves remaining in close contact with potential system users throughout the system's development and revision processes. All of the above is tested by using different types of test data. The system testing process relies heavily on the accuracy and thoroughness of the test data. The system under investigation is put through its paces utilising the prepared test data. Errors are once again discovered and fixed during testing with test data.

Conclusion

The executive, the purchaser, the vendor, and the registrar are all part of this group. They give the local land registration system a cursory amount of consideration. Supervisor, vendor, purchaser, and registrar login value displayed on homepage. To secure approval from the official and shipped-off purchaser, vendors provide land details such as a landowner, size, record, report, cost, and other intricacies to the sub-register office. Clients can easily track all of the transactions including cutting-edge financial concepts without having to remember any central record because they are all handled in progressive sales. Since its inception, the blockchain's potential use has been delivering positive results. A conscious examination of the security of blockchain frameworks is still lacking, despite the fact that numerous analyses have been conducted on the blockchain's security and protection challenges.

References

1. M. I. Khalid, J. Iqbal, A. Alturki, S. Hussain, A. Alabrah, and S. S. Ullah, “Blockchain-based land registration system: A conceptual framework,” Appl. Bionics Biomech., vol. 2022, p. 3859629, 2022.
2. S. H. Ali, H. Tahir, “A Survey on Blockchain and Online Land Registration”, International Journal of Scientific & Engineering Research Volume 11, Issue 7, pp.574-582, July-2020
3. I. K. Gupta, A. Choubey, and S. Choubey, “Salp swarm optimisation with deep transfer learning enabled retinal fundus image classification model,” Int. J. Netw. Virtual Organ., vol. 27, no. 2, p. 163–180, 2022.
4. Uddin, M. I., Ali Shah, S. A., Al-Khasawneh, M. A., Alarood, A. A., & Alsolami, E. (2022). Optimal policy learning for COVID-19 prevention using reinforcement learning. Journal of Information Science, 48(3), 336-348.
5. Ullah, Z., Zeb, A., Ullah, I., Awan, K. M., Saeed, Y., Uddin, M. I., ... & Zareei, M. (2020).

Certificateless proxy reencryption scheme (CPRES) based on hyperelliptic curve for access control in content-centric network (CCN). Mobile Information Systems, 2020, 1-13.

6. Alarood, A. A., Alsolami, E., Al-Khasawneh, M. A., Ababneh, N., & Elmedany, W. (2022). IES: Hyper-chaotic plain image encryption scheme using improved shuffled confusion-diffusion. Ain Shams Engineering Journal, 13(3), 101583.
7. Rani, R., Kumar, S., Kaiwartya, O., Khasawneh, A. M., Lloret, J., Al-Khasawneh, M. A., ... & Alarood, A. A. (2021). Towards green computing oriented security: A lightweight postquantum signature for IoE. Sensors, 21(5), 1883.
8. Saleh, M. A., Othman, S. H., Al-Dhaqm, A., & Al-Khasawneh, M. A. (2021, June). Common investigation process model for Internet of Things forensics. In 2021 2nd International Conference on Smart Computing and Electronic Enterprise (ICSCEE) (pp. 84-89). IEEE.
9. Mast, N., Khan, M. A., Uddin, M. I., Ali Shah, S. A., Khan, A., Al-Khasawneh, M. A., & Mahmoud, M. (2021). Channel contention-based routing protocol for wireless ad hoc networks. Complexity, 2021, 1-10.
10. Al-Khasawneh, M. A., Shamsuddin, S. M., Hasan, S., & Bakar, A. A. (2018, July). MapReduce a comprehensive review. In 2018 International Conference on Smart Computing and Electronic Enterprise (ICSCEE) (pp. 1-6). IEEE.
11. Kumar, V., Kumar, S., AlShboul, R., Aggarwal, G., Kaiwartya, O., Khasawneh, A. M., ... & Al-Khasawneh, M. A. (2021). Grouping and Sponsoring Centric Green Coverage Model for Internet of Things. Sensors, 21(12), 3948.
12. Sabir, M. W., Khan, Z., Saad, N. M., Khan, D. M., Al-Khasawneh, M. A., Perveen, K., ... & Azhar Ali, S. S. (2022). Segmentation of Liver Tumor in CT Scan Using ResU-Net. Applied Sciences, 12(17), 8650.
13. Alam Khan, Z., Feng, Z., Uddin, M. I., Mast, N., Ali Shah, S. A., Imtiaz, M., ... & Mahmoud, M. (2020). Optimal policy learning for disease prevention using reinforcement learning. Scientific Programming, 2020, 1-13.
14. Meng, F., Jagadeesan, L., & Thottan, M. (2021). Model-based reinforcement learning for service mesh fault resiliency in a web application-level. arXiv preprint arXiv:2110.13621.
15. Meng, F., Zhang, L., & Chen, Y. (2023) FEDEMB: An Efficient Vertical and Hybrid Federated Learning Algorithm Using Partial Network Embedding.
16. Meng, F., Zhang, L., & Chen, Y. (2023) Sample-Based Dynamic Hierarchical Trans-Former with Layer and Head Flexibility Via Contextual Bandit.
17. Meng, F. (2023) Transformers: Statistical Interpretation, Architectures and Applications.
18. M. Modekurti-Mahato, P. Kumar, and P. G. Raju, “Impact of Emotional Labor on Organizational Role Stress – A Study in the Services Sector in India,” Procedia Economics and Finance, vol. 11, pp. 110–121, 2014.
19. M. Modekurti, and R. Chattopadhyay, “The relationship between organizational role stress and life satisfaction levels among women employees: an empirical study,” The Icfaian Journal of Management Research. vol. 7, no. 5, pp. 25-34. 2008.
20. M. Mahato, “Organizational change: An action oriented toolkit,” South Asian Journal of Management, vol. 22, no. 4, pp. 197. 2015.
21. P. G. Raju and M. M. Mahato, “Impact of longer usage of lean manufacturing system

(Toyotism) on employment outcomes - a study in garment manufacturing industries in India," International Journal of Services and Operations Management, vol. 18, no. 3, p. 305, 2014.

22. M. Mahato, "Performance Analysis of High, Medium and Low Companies in Indian Pharmaceuticals Industry," IUP Journal of Management Research, vol. 10, no. 3, pp. 52-70, 2011.
23. Santoso, L.W., Yulia. (2020) "Predicting student performance in higher education using multiregression models", Telecommunication Computing Electronics and Control, Journal, vol. 18, no. 3, pp. 1354-1360.
24. Santoso, L.W., Yulia. (2019) "ITIL Service Management Model for E-learning", Journal of Adv. Research in Dynamical & Control Systems, vol. 11, no. 6, pp. 190-197.
25. Santoso, L.W., Lim, R. and Trisnajaya, K. (2018) "Smart Home System Using Internet of Things", Journal of Information, Communication and Convergence Engineering, Vol. 16 No.1.
26. Santoso, L.W. and Yulia, (2018) "Academic Decision Support System for Top Management", Advanced in Natural and Applied Sciences, Vol. 12 No. 4.
27. Santoso, L.W. and Yulia, (2017) "Data Warehouse with Big Data Technology for Higher Education", Procedia Computer Science, Vol. 124 No. 1.
28. Dahal, R. K. (2019). Customer satisfaction in Nepalese cellular networks. Tribhuvan University Journal, 33(2), 59-72.
29. Dahal, R. K. (2020). Contemporary management accounting techniques and organizational performance. Pravaha, 26(1), 177-185.
30. Dahal, R. K. (2021). Customer performance and non-financial organizational performance of theNepalese cellular telecommunications industry. Problems and Perspectives in Management, 19(2), 132-144.
31. Dahal, R. K. (2021). The relevance of conventional management accounting techniques. Nepal Journal of Multidisciplinary Research, 4(2), 27–39.
32. Bhakuni S, "Women Resource Management: Development of women workforce," Global Scientific and Academic Journal of Economics, Business and Management, vol. 2, no. 2, pp. 66-70, 2023.
33. Bhakuni S, Saxena S, "Exploring the Link between Training and Development, Employee Engagement and Employee Retention, "Journal of Business and Management Studies, vol. 5. no. 1, pp.173-180, 2023.
34. Bhakuni S, Gahlawat C, "Online teaching in schools after the advent of Covid-19- Teachers' perception," Shodh Sanchar bulletin, vol. 10, no. 40, pp. 63-67, 2021.
35. Bhakuni S, Kumari P, Gahlawat C, "Role of management in reducing stress in teachers-A study conducted in Dehradun district," Shodh Sarita, vol. 7, no. 28, pp.153-157, 2021.
36. Bhakuni S, "Work life balance of married female faculty members in technical institutes of Dehradun district of Uttarakhand state in India," Journal of positive school psychology, vol. 6, no. 6, pp.3887-3894, 2022.
37. Bhakuni S, Kala S, "Applications of stochastic models in business and industry," Stochastic Modeling and Applications, vol. 26, no. 3, pp.1175-1184, 2022.
38. Bhakuni S, "Recruitment, Selection and Placement: Precision from start till end," Manager:

The British Journal of administrative management, vol. 58, no. 154, pp. 273-284, 2022.

39. Bhakuni S, "Human Resource Development-Upscaling all round organisational efficiency," Korea Review of International Studies, vol. 15, no. 40, pp. 23-33, 2022.
40. Almahairah Salameh M, Bhakuni S, Agyei Tweneboah I, Chatterjee S, Effendy F, "Co-operative business models in covid era and reformation of society," RES MILITARIS, vol. 12, no. 4, pp.765-774, 2023.
41. Bhakuni S, "The effect of innovation management of sustainable competitive advantage in contemporary organisations," Central European Management Journal, vol. 31, no.1, pp.84-98, 2023.
42. Bhakuni S, Reena, "Exploring employee engagement and psychological well-being in a virtual workspace," Novyi Mir Research Journal, vol. 8, no. 2, pp.234-254, 2023.
43. Bhakuni S, Totlani N, "The application of human resources information systems for enhancing output in agricultural companies," World Journal of Management and Economics, vol. 16, no.1, pp.25-42, 2023.
44. Bhakuni S, Saxena S, "Critically analyzing the role of total rewards and compensation in increasing employee motivation," International Journal of Asian Business and Management (IJABM), vol. 2, no. 3, pp.225-240, 2023.
45. H. Gupta, D. Patel, A. Makade, K. Gupta, O. P. Vyas, and A. Puliafito, "Risk Prediction in the Life Insurance Industry Using Federated Learning Approach," in 2022 IEEE 21st Mediterranean Electrotechnical Conference (MELECON), 2022, pp. 948–953.
46. S. Dave, S. Degadwala, and D. Vyas, "DDoS Detection at Fog Layer in Internet of Things," in 2022 International Conference on Edge Computing and Applications (ICECAA), 2022, pp. 610–617.
47. D. D. Pandya, A. Jadeja, S. Degadwala, and D. Vyas, "Ensemble Learning based Enzyme Family Classification using n-gram Feature," in 2022 6th International Conference on Intelligent Computing and Control Systems (ICICCS), 2022, pp. 1386–1392.
48. V. B. Gadhavi, S. Degadwala, and D. Vyas, "Transfer Learning Approach For Recognizing Natural Disasters Video," in 2022 Second International Conference on Artificial Intelligence and Smart Energy (ICAIS), 2022, pp. 793–798.
49. J. Mahale, S. Degadwala, and D. Vyas, "Crop Prediction System based on Soil and Weather Characteristics," in 2022 Sixth International Conference on I-SMAC (IoT in Social, Mobile, Analytics and Cloud)(I-SMAC), 2022, pp. 340–345.
50. M. Shah, S. Degadwala, and D. Vyas, "Diet Recommendation System based on Different Machine Learners: A Review," in 2022 Second International Conference on Artificial Intelligence and Smart Energy (ICAIS), 2022, pp. 290–295.
51. B. Trivedi, S. Degadwala, and D. Vyas, "Parallel data stream anonymization methods: A review," in 2022 Second International Conference on Artificial Intelligence and Smart Energy (ICAIS), 2022, pp. 887–891.
52. D. D. Pandya, N. S. Gupta, A. Jadeja, R. D. Patel, S. Degadwala, and D. Vyas, "Bias Protected Attributes Data Balancing using Map Reduce," in 2022 6th International Conference on Electronics, Communication and Aerospace Technology, 2022, pp. 1540–1544.
53. R. Baria, S. Degadwala, R. Upadhyay, and D. Vyas, "Theoretical Evaluation of Machine And

Deep Learning For Detecting Fake News," in 2022 Second International Conference on Artificial Intelligence and Smart Energy (ICAIS), 2022, pp. 325–329.

54. P. Bam, S. Degadwala, R. Upadhyay, and D. Vyas, "Spoken Language Recognization Based on Features and Classification Methods: A Review," in 2022 Second International Conference on Artificial Intelligence and Smart Energy (ICAIS), 2022, pp. 868–873.
55. Bhakuni S, "Poverty and sustainable development: Perspective from developed and developing nations," International journal of Science Technology and Management, Vol. 12, no. 06, pp. 68-81, 2023.
56. Ahmad, S. R., Prasad, K., Bhakuni S., Hedau, A., Narayan, P. B. S., & Parameswari, P, "The role and relation of emotional intelligence with work-life balance for working women in job stress," The Scientific Temper, Vol. 14, no. 1, pp. 233-237, 2023.
57. Dahal, R. K. (2021). Internal business process performance of the Nepalese telecom industry. Problems and Perspectives in Management, 19(4), 138-147.
58. Dahal, R. K. (2021). Application of management accounting techniques in the Nepalese manufacturing firms. Nepal Journal of Multidisciplinary Research, 4(4), 53-62.
59. Dahal, R.K. (2022). Customers' perspectives on the Nepalese cellular telecommunications services' technological and innovation capabilities. International Journal of Social Sciencesand Management, 9(1), 41-47.
60. Awais, M., Bhuva, A., Bhuva, D., Fatima, S., & Sadiq, T. (2023). Optimized DEC: An effective cough detection framework using optimal weighted Features-aided deep Ensemble classifier for COVID-19. Biomedical Signal Processing and Control, 105026.
61. Sharma, Praveen Kumar. "Some common fixed point theorems for sequence of self mappings in fuzzy metric space with property (CLRg)." J. Math. Comput. Sci., Vol.10, No.5 (2020): pp 1499-1509.
62. Sharma, Shivram, and Praveen Kumar Sharma. "On common α-fixed point theorems." J. Math. Comput. Sci., Vol.11, No.1 (2020): pp 87-108.
63. Sharma, Praveen Kumar. "Common fixed point theorem in intuitionistic fuzzy metric space using the property (CLRg)." Bangmod Int. J. Math. & Comp. Sci., Vol. 1, No.1 (2015): pp 83-95.
64. Sharma, Praveen Kumar, S. Chaudhary, and Kamal Wadhwa. "Common Fixed Points For Weak Compatible Maps In Fuzzy Metric Spaces." International Journal of Applied Mathematical Research, Vol.1, No. (2012): pp 159-177.
65. Sharma, Praveen Kumar, and Shivram Sharma. "Results on Complex-Valued Complete Fuzzy Metric Spaces." Great Britain Journals Press, London Journal of Research in Science: Natural and Formal, Vol 23, Issue 2 (2023), Page No. 57-64.
66. Dahal, R. K. (2022). Management accounting practices and organizational performance. Problems and Perspectives in Management, 20(2), 33-43.
67. Dahal, R. K., Ghimire, B., & Rai, B. (2022). Social and environmental accountabilities of the Nepalese cell phone operators. Quest Journal of Management and Social Sciences, 4(2), 225–235.
68. Dahal, R. K., Ghimire, B., & Rai, B. (2022). A balanced scorecard approach for evaluating organizational performance of Nepal Telecom. Management Dynamics, 25(1), 63–73.

69. Dahal, R. K., Ghimire, B., & Rai, B. (2023). The strength of corporate governance metrics on organizational performance of Nepalese telecom industry. THE BATUK: A Peer Reviewed Journal of Interdisciplinary Studies, 9(1), 58–74.
70. Dahal, R. K., Ghimire, B., Rai, B., & Shahi, B. J. (2023). Customer's perspective on non-financial performance metrics of telecommunication companies: The emerging market case. Journal of Governance & Regulation, 12(2), 8–18.
71. S. Upadhyay, M. Kumar, A. Kumar, K. Z. Ghafoor, and S. Manoharan, "SmHeSol (IOT-BC): Smart Healthcare Solution for future development using speech feature extraction integration approach with IOT and Blockchain," Journal of Sensors, vol. 2022, pp. 1–13, 2022.
72. Pratap, A. Kumar, and M. Kumar, "Analyzing the need of edge computing for internet of things (IoT)," in Proceedings of Second International Conference on Computing, Communications, and Cyber-Security, Singapore: Springer Singapore, 2021, pp. 203–212.
73. Shadab et al., "Comparative analysis of rectangular and circular waveguide using matlab simulation," International Journal of Distributed and Parallel System., vol. 3, no. 4, pp. 39–52, 2012.
74. M. Kumar et al., "BBNSF: Blockchain-based novel secure framework using RP2-RSA and ASR-ANN technique for IoT enabled healthcare systems," Sensors (Basel), vol. 22, no. 23, p. 9448, 2022.
75. Kumar, M.; Kumar, A.; Verma, S.; Bhattacharya, P.; Ghimire, D.; Kim, S.-h.; Hosen, A.S.M.S. Healthcare Internet of Things (H-IoT): Current Trends, Future Prospects, Applications, Challenges, and Security Issues. Electronics 2023, 12, 2050.
76. Kumar, M. Kumar, S. Verma, K. Kavita, N. Z. Jhanjhi, and R. M. Ghoniem, "Vbswp-CeaH: Vigorous buyer-seller watermarking protocol without trusted certificate authority for copyright protection in cloud environment through additive homomorphism," Symmetry (Basel), vol. 14, no. 11, p. 2441, 2022
77. M. Kumar, D. Kumar, and M. A. K. Akhtar, "A modified GA-based load balanced clustering algorithm for WSN: MGALBC," Int. J. Embed. Real-time Commun. Syst., vol. 12, no. 1, pp. 44–63, 2021.
78. Kumar et al., "Flamingo-optimization-based deep convolutional neural network for IoT-based arrhythmia classification," Sensors (Basel), vol. 23, no. 9, 2023.
79. Gupta, M. Kumar, A. Rangra, V. K. Tiwari, and P. Saxena, Network intrusion detection types and analysis of their tools. India, 2012.
80. M. Kumar, D. Kumar, and M. A. K. Akhtar, "Mathematical model for sink mobility (MMSM) in wireless sensor networks to improve network lifetime," in Communications in Computer and Information Science, Singapore: Springer Singapore, 2019, pp. 133–141.
81. Hasan, M. (2022). A Metaphorical & Visual Analysis of Gender in Al Jazeera & BBC coverage of Afghanistan after the Taliban takes over. Indiana Journal of Humanities and Social Sciences, 3(5), 38–43.
82. M. Munshi, K. N. Tumu, M. N. Hasan, and M. Z. Amin, "Biochemical effects of commercial feedstuffs on the fry of climbing perch (Anabas testudineus) and its impact on Swiss albino mice as an animal model," Toxicology Reports, vol. 5, pp. 521-530, 2018
83. Md. N. Hasan, M. Munshi, M. H. Rahman, S. M. N. Alam, and A. Hirashima, "Evaluation of

antihyperglycemic activity of Lasia spinosa leaf extracts in Swiss albino mice," World Journal of Pharmacy and Pharmaceutical Sciences, vol. 3, no. 10, pp. 118-124, 2014.

84. M. Munshi, M. N. H. Zilani, M. A. Islam, P. Biswas, A. Das, F. Afroz, and M. N. Hasan, "Novel compounds from endophytic fungi of Ceriops decandra inhibit breast cancer cell growth through estrogen receptor alpha in in-silico study," Informatics in Medicine Unlocked, vol. 32, p. 101046, 2022.
85. M. Munshi, M. H. Sohrab, M. N. Begum, S. R. Rony, M. A. Karim, F. Afroz, and M. N. Hasan, "Evaluation of bioactivity and phytochemical screening of endophytic fungi isolated from Ceriops decandra (Griff.) W. Theob, a mangrove plant in Bangladesh," Clinical Phytoscience, vol. 7, article no. 81, 2021.
86. M. Z. Amin, K. N. Tumu, M. Munshi, Y. N. Jolly, and M. M. Rahman, "Assessment of Heavy Metal Contents in Commercial Feedstuffs and Broiler (Gallus domesticus) Meat and Its Impact on Swiss Albino Mice as an Animal Model," Agricultural Science Digest - A Research Journal, vol. 39, no. 2, pp. 149-155, 2019.
87. Ramesh, S., Rama Rao, T., "Indoor channel characterization studies for V-band gigabit wireless communications using dielectric-loaded exponentially tapered slot antenna," International Journal of Microwave and Wireless Technologies, vol. 8, no. 8, pp. 1243-1251, 2016.
88. Ramesh, S., Rama Rao, T., "Millimeter wave dielectric loaded exponentially tapered slot antenna array using substrate integrated waveguide for gigabit wireless communications," Journal of Infrared and Millimeter Waves, vol. 34, no. 5, pp. 513-519, 2015.
89. S.Chitra, N.Kumaratharan, S.Ramesh, "A novel subspace method for precise carrier frequency offset estimation in multicarrier modulation scheme under multiuser environment," International Journal of Communication Systems, vol. 33, no. 17, pp. e4608, 1-16, 2020.
90. V. Satheesh Kumar, S. Ramesh, "Implementation of High-Q Embedded Band Pass Filter in Wireless Communication," Intelligent Automation & Soft Computing, vol. 36, no. 2, pp. 2191-2200, 2023.
91. V. Satheesh Kumar, S. Ramesh, "LCP Based Planar High Q Embedded Band Pass Filter for Wireless Applications," Journal of Mobile Multimedia, vol. 14, no. 3, pp. 307-318, 2018.
92. K. Kayalvizhi, S. Ramesh, "Design and Analysis of Reactive Load Dipole Antenna using Genetic Algorithm Optimization," Applied Computational Electromagnetics Society Journal, vol. 35, no. 3, pp. 279-287, 2020.
93. J. Jayalakshmi, S. Ramesh, "Compact Fractal wearable Antenna for Wireless Body Area Communications," International Journal of Telecommunications and Radio Engineering, vol. 79, no. 1, pp. 71-80, 2020.
94. S. Ramesh, T. Rama Rao, "High Gain Dielectric loaded Exponentially Tapered Slot Antenna Based on Substrate Integrated Waveguide for V-Band Wireless Communications," Applied Computational Electromagnetics Society Journal, vol. 29, no. 11, pp. 870-880, 2014.
95. M. Vanitha, S. Ramesh, S. Chitra, "Wearable Antennas for Remote Health Care Monitoring System Using 5G Wireless Technologies," International Journal of Telecommunications and Radio Engineering, vol. 78, no. 14, pp. 1275-1285, 2019.
96. Chitra S, Kumaratharan N, Ramesh S, "Enhanced brain image retrieval using carrier frequency offset compensated orthogonal frequency division multiplexing for Telemedicine

applications," International Journal of Imaging Systems and Technology, vol.28, no.3, pp. 186-195, 2018.

97. Akhilesh Kumar Sharma , Shamik Tiwari, Gaurav Aggarwal, Nitika Goenka, Anil Kumar, Prasun Chakrabarti, Tulika Chakrabarti, Radomir Gono, Zbigniew Leonowicz, Michal Jasiński , "Dermatologist-Level Classification of Skin Cancer Using Cascaded Ensembling of Convolutional Neural Network and Handcrafted Features Based Deep Neural Network", IEEE Access , 10 : 17920-17932, 2022
98. Gaurav Kumawat, Santosh Kumar Viswakarma, Prasun Chakrabarti , Pankaj Chittora, Tulika Chakrabarti , Jerry Chun-Wei Lin, "Prognosis of Cervical Cancer Disease by Applying Machine Learning Techniques", Journal of Circuits, Systems, and Computers, 2022
99. Abrar Ahmed Chhipa, Prasun Chakrabarti, Vadim Bolshev , Tulika Chakrabarti , Gennady Samarin, Alexey N. Vasiyev, Sandeep Ghosh, Alexander Kudryavtsev, "Modeling and Control Strategy of Wind Energy Conversion System with Grid-Connected Doubly Fed Induction Genenator", Energies , 15, 6694, 2022
100. Tulika Chakrabarti, Sibabrata Mukhopadhyay, Prasun Chakrabarti, Gholamreza Hatam, Mohammad Nami, "Phenyl Ethanoid Glycoside from the Bark of Oroxylum indicum Vent: a Potential Inhibitor of DNA Topoisomerase IB of Leishmania donovani", Journal of Advanced Medical Sciences and Applied Technologies, 2022
101. B Prasanalakshmi , Bui Thanh Hung, Prasun Chakrabarti, Xue-bo Jin, Tulika Chakrabarti, Ahmed Elngar, "A Novel Artificial Intelligence-Based Predictive Analytics Technique to Detect Skin Cancer", 2022.
102. S Ningthoujam, T Chingkheinganba, S K Chakraborty, A Elngar, Prasun Chakrabarti, Tulika Chakrabarti, Praveen, S. Phani , Amit Gupta, Margala, Martin, "Performance Analysis for Molecular Communication Under Feedback Channel Using Multipath and Single Path Technique", Pre-print, 2022.
103. Pankaj Chittora, Tulika Chakrabarti, Papiya Debnath, Amit Gupta, Prasun Chakrabarti, S Phani Praveen, Martin Margala, Ahmed A Elngar , "Experimental analysis of earthquake prediction using machine learning classifiers, curve fitting, and neural modeling", Pre-print, 2022.
104. Umesh Agarwal, Abrar Ahmed Chhipa, Tulika Chakrabarti, Amit Gupta, S Phani Praveen, Prasun Chakrabarti, Neha Sharma, Ahmed A Elngar , "Reliability Evaluation of Radial Distribution Network for Educational purpose using Greedy Search Approach-Distribution Network Data and Results", Pre-print, 2022.
105. Nagendra Singh, Manish Tiwari, Tulika Chakrabarti, Prasun Chakrabarti, Om Prakash Jena, Ahmed A Elngar, Vinayakumar Ravi, Martin Margala, "Minimization of Environmental Emission and cost of generation by using economic load dispatch", Pre-print, 2022.
106. Akhilesh Deep Arya, Sourabh Singh Verma, Prasun Chakrabarti, Tulika Chakrabarti, Ahmed A Elngar, Mohammad Nami, Ali-Mohammad Kamali, "A Systematic Review on Machine Learning and Deep Learning Techniques in the Effective Diagnosis of Alzheimer's Disease", Pre-print, 2022
107. Suchismita Gupta, Bikramjit Sarkar, Subhrajyoti Saha, Indranath Sarkar, Prasun Chakrabarti, Sudipta Sahana, Tulika Chakrabarti, Ahmed A Elngar, "A Novel Approach Toward the Prevention of the Side Channel Attacks for Enhancing the Network Security", Pre-print, 2022.

108. Naveen S Pagad, N Pradeep, Tulika Chakrabarti, Prasun Chakrabarti, Ahmed A Elngar, Martin Margala, Mohammad Nami, Neha Sharma, Samuel Frimpong, "Clinical XLNet-based End-to-End Knowledge Discovery on Clinical Text Data using Natural Language Processing", Pre-print, 2022

109. K Suvarna Vani, Bui Thanh Hung, Prasun Chakrabarti, Tulika Chakrabarti, Ahmed A Elngar, "Detection and Classification of Invasive Ductal Carcinoma using Artificial Intelligence", Pre-print, 2022.

110. KS Balamurugan, Prasun Chakrabarti, Tulika Chakrabarti, Amit Gupta, Ahmed A Elngar, Mohammad Nami, Vinayakumar Ravi, Grienggrai Rajchakit, M Ali Akbar, "Improving the Performance of Diagnosing Chronic obstructive Lung Disease Using Outlier Detection with Decision Tree Algorithm", Pre-print, 2022.

111. Ruhul Amin Hazarika, Arnab Kumar Maji, Debdatta Kandar, Prasun Chakrabarti, Tulika Chakrabarti, KS Jagannatha Rao, Jose Carvalho, Babak Kateb, Mohammad Nami, "An evaluation on changes in Hippocampus size for Cognitively Normal (CN), Mild Cognitive Impairment (MCI), and Alzheimer's disease (AD) patients using Fuzzy Membership Function", OSF Preprints, 2021.

112. Jitendra Shreemali, Prasun Chakrabarti, Tulika Chakrabarti, Sandeep Poddar, Daniel Sipple, Babak Kateb, Mohammad Nami, "A Machine Learning Perspective on Causes of Suicides and identification of Vulnerable Categories using Multiple Algorithms", medRxiv, 2021.

113. Pankaj Chittora, Sandeep Chaurasia, Prasun Chakrabarti, Gaurav Kumawat, Tulika Chakrabarti, Zbigniew Leonowiz, Michael Jaisinski, Lukasz Jaisinski, Radomir Gono, Elzbieta Jaisinski, Vadim Bolshev, "Prediction of Chronic Kidney Disease - A Machine Learning perspective", IEEE Access, 9 : 17312-17334,2021

114. Abrar Ahmed Chhipa , Vinod Kumar, R. R. Joshi, Prasun Chakrabarti, Michal Jaisinski, Alessandro Burgio, Zbigniew Leonowicz, Elzbieta Jasinska, Rajkumar Soni, Tulika Chakrabarti, "Adaptive Neuro-fuzzy Inference System Based Maximum Power Tracking Controller for Variable Speed WECS", Energies ,14(19) :6275, 2021.

115. Akhilesh Kumar Sharma, Gaurav Aggarwal, Sachit Bhardwaj, Prasun Chakrabarti, Tulika Chakrabarti, Jemal Hussain, Siddhartha Bhattarcharyya, Richa Mishra, Anirban Das, Hairulnizam Mahdin, "Classification of Indian Classical Music with Time-Series Matching using Deep Learning", IEEE Access , 9 : 102041-102052 , 2021.

116. E. Vashishtha and G. Dhawan, "Comparison of Baldrige Criteria of Strategy Planning and Harrison Text," FMDB Transactions on Sustainable Management Letters., vol. 1, no. 1, pp. 22-31, 2023.

117. E. Vashishtha and H. Kapoor, "Implementation of Blockchain Technology Across International Healthcare Markets," FMDB Transactions on Sustainable Technoprise Letters., vol. 1, no. 1, pp. 1–12, 2023.

118. K. Srinivas, P. R. Velmurugan, and N. Andiyappillai, "Digital Human Resources and Management Support Improve Human Resources Effectiveness," FMDB Transactions on Sustainable Management Letters., vol. 1, no. 1, pp. 32-45, 2023.

119. Manish Tiwari, Prasun Chakrabarti, Tulika Chakrabarti , "Novel work of diagnosis in liver cancer using Tree classifier on liver cancer dataset (BUPA liver disorder)" , Communications in Computer and Information Science , 837, pp.155-160, 2018

120. Manish Tiwari, Prasun Chakrabarti, Tulika Chakrabarti , "Performance analysis and error evaluation towards the liver cancer diagnosis using lazy classifiers for ILPD", Communications in Computer and Information Science , 837, pp.161-168,2018

121. Papiya Debnath, Pankaj Chittora, Tulika Chakrabarti, Prasun Chakrabarti, Zbigniew Leonowicz, Michal Jasinski , Radomir Gono, Elżbieta Jasińska, "Analysis of earthquake prediction in India using supervised machine learning classifiers", Sustainibility ,13(2):971 , 2021.

122. Prasun Chakrabarti , Biswajit Satpathy, Siddhant Bane, Tulika Chakrabarti, N S Chaudhuri, Pierluigi Siano,"Business forecasting in the light of statistical approaches and machine learning classifiers", Communications in Computer and Information Science , 1045, pp.13-21, 2019.

123. Prasun Chakrabarti , Tulika Chakrabarti , Mayank Sharma. , D Atre D, K.Baba Pai, "Quantification of Thought Analysis of Alcohol-addicted persons and memory loss of patients suffering from stage-4 liver cancer", Advances in Intelligent Systems and Computing, 1053, pp.1099-1105, 2020.

124. Prasun Chakrabarti, Manish Tiwari, Tulika Chakrabarti, "Performance Vector analysis in context to liver cancer-A Support Vector Machine Approach with a survey on the latest Perspectives of Chemistry in liver cancer treatment", International Journal of Computer Science and Information Security, 14(9):1238,2016

125. Prasun Chakrabarti, Siddhant Bane, Biswajit Satpathy , Mark Goh , B N Datta , Tulika Chakrabarti, "Compound Poisson Process and its Applications in Business", Lecture Notes in Electrical Engineering, 601, pp.678-685,2020

126. Prasun Chakrabarti, Tulika Chakrabarti , Biswajit Satpathy, I SenGupta , Jonathan Andrew Ware, "Analysis of strategic market management in the light of stochastic processes, recurrence relation, Abelian group and expectation", Advances in Artificial Intelligence and Data Engineering, 1133 , pp.701-710, 2020

127. S. S. Priscila, S.S. Rajest, S. N. Tadiboina, R. Regin and S. András, "Analysis of Machine Learning and Deep Learning Methods for Superstore Sales Prediction," FMDB Transactions on Sustainable Computer Letters., vol. 1, no. 1, pp. 1–11, 2023.

128. Sreemoy Kanti Das, GS Chakraborthy, Tulika Chakrabarti, Prasun Chakrabarti, Mohammad Javad Gholamzadeh, Mohammad Nami, "Evaluation of nootropic activity of standardized Epipremnum aureum extract against scopolamine-induced amnesia in experimental animals", Journal of Advanced Medical Sciences and Applied Technologies , 6(1): 64-71,2021

129. Tulika Chakrabarti, Sibabrata Mukhopadhyay, Prasun Chakrabarti, Gholamreza Hatam, Mohammad Nami, "Phenyl Ethanoid Glycoside from the bark of Oroxylum indicum vent : a potential inhibitor of DNA Topoisomerase IB of Leismania donovani", Journal of Advanced Medical Sciences and Applied Technologies, 2021 (https://doi.org/10.30476/jamsat.2021.91626.1022)