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Institution Details



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| **Province** | Sindh | **City** | Karachi |
| **Institution** | National University of Computer and Emerging Sciences (FAST-NU) | **Campus** | Karachi |
| **Department** | Computer Science | **Degree Level** | BS |
| **Degree Program** | Computer Science | **Telephone** |  |
| **Fax** |  | | |

Supervisor Details



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| **Qualification** |  | | |

Co-Supervisor Details



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| **Qualification** |  | | |

Head of Department Details



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Project Details



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| --- | --- | --- | --- | --- | --- | --- |
| **Project Title** | StableDoc | | |  | |  |
| **Group Details** | **Member 1 Name: Abdul Wasee**    **Member 1 Roll#: 19k-1357** | | **Member 2 Name: Ibadullah Shaikh**    **Member 2 Roll#: 19k-0259** | | **Member 3 Name: Sarang Aswani**    **Member 3 Roll#: 19k-1400** |  |
|  |  |  | |  | |  |
| **Project Area of** | Blockchain | | | | |  |
| **Specialization** |  |  | |  | |  |
|  |  |  | |  | |  |
| **Project Start** | 22nd August, 2022 | **Project End Date** | | A week after finals, 2023 | |  |
| **Date** |  |  | |  | |  |
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| **Project** |  | | | | |  |
| **Summary (less** | Blockchain is a shared, immutable ledger that facilitates the process of recording transactions and tracking assets. An asset can be tangible (a house, car, cash, land) or intangible (intellectual property, patents, copyrights). Virtually anything of value can be tracked and traded on a blockchain network. With the arrival of IoT, transaction volumes have exploded. A blockchain network can track orders, payments, accounts, production and much more. Because members share a single view of the truth, you can see all details of a transaction end to end. This gives you greater confidence, as well as new efficiencies and opportunities.  ERC721 token are exclusive cryptographic tokens that are only available on blockchains and cannot be copied. Real-world objects like artwork and real estate can be represented by ERC721 tokens. These physical assets can be "tokenized," which improves the efficiency of trading while lowering the risk of fraud. The next proposed method in the markets for digital currencies is asset tokenization using blockchain technology. Blockchains are increasingly being touted as the answer to a variety of issues relating to property ownership, including intellectual property rights (IPR) and real estate transactions. ERC721 tokens and blockchains aim to resolve conflicts over intangible rights such as patents, copyrights, trademarks and more.  Numerous businesses have been drawn into the area of blockchain and cryptocurrency enabled land transfers by the promise of real estate transactions that are quicker, cheaper, frictionless, inclusive, and reliable. This section covers blockchain-based solutions that purport to speed up the real estate closing process as well as those that let cryptocurrency owners purchase land without having to sell their crypto assets.  To prevent future fraud, we will create a platform for buyers to register their land. Even if someone were to try to conduct fraud, it could be validated and determined who the rightful owner is. Simply said, a user uploads all the necessary paperwork and information via our website, and we transmit their request to the business/minor for approval or rejection. If the request is granted, an ERC721 token representing that land will be sent to the user's wallet address, making him the rightful owner. The user will be informed if the request is denied that we were unable to confirm your ownership. Additionally, our platform will be able to register new minors. For example, if someone wants to register their organization and become a minor, they can do so by submitting specific information and supporting documentation. | | | | |  |
| **than 2500** |  | | | | |  |
| **characters)** |  | | | | |  |
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| **Project** | The objectives of this project:   1. To simplify the process of transferring property ownership using blockchain. 2. To resolve the property scams 3. To deliver an easy, user-friendly interface to buy/sell the properties 4. Our project will remove the paperwork required in property business to make the process much easier. | | | | |  |
| **Objectives (less** |  | | | | |  |
| **than 2500** |  | | | | |  |
| **characters)** |  | | | | |  |
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| **Literature Review / Background Study** | Tokenizing assets through the use of blockchain is the next big thing in digital currency markets. Securing the assets in the world of the internet is challenging as most of them can easily be copied and sold in the secondary market. Protecting the rights of the asset owner is one of the challenging research areas. ERC-721Tokens are very useful in representing the ownership of unique items for any assets. ERC-721Tokens ensure that an asset can have only one official owner at any point in time with the help of Ethereum-based blockchain network. Ethereum ERC-721Tokens can ensure that no one can modify the ownership rights or copy and paste the digital assets. The promise of an immutable blockchain is often touted as a mechanism to resolve disputes over intangible rights, notably intellectual property rights, and even to facilitate quicker and easier real estate transactions.    The idea of faster, cheaper, frictionless, inclusive, and reliable real estate transactions has lured numerous companies into the world of blockchain and crypto enabled land transfers. In this part, we discuss products whose promoters claim to improve the real estate closing process by transacting on a blockchain, as well as products that enable holders of crypto to buy land without liquidating their cryptoasset holdings  Speed is an often-promoted benefit of both blockchain and crypto enabled real estate closings. The CEO of Propy, which offers “Automated Transactions from the Leading Real Estate Innovator,”202 claims that it took only 22 minutes to transfer a studio apartment using an ERC-721Token.203 This speed is cited as particularly desirable to members of certain demographic groups, such as millennials and Gen Zers, who “are already purchasing high-value assets . . . online [and] expect the same ease and transparency when buying real estate.”204 [1]  A blockchain entrepreneur who auctioned her Florida home as an ERC-721Token lauded the ability of ERC-721Tokens to consummate real estate transactions as quickly as Venmo transactions.205 The platforms’ consumer-facing websites propose to take the boredom out of real estate transactions, with the crypto mortgage company Milo’s explicitly stating that “[w]e deal with the boring stuff like title, insurance, appraisals, all behind the scenes.”206 [1]  In addition to marketing their products as more desirable to younger people, the companies also promote their transaction structure as the gateway to wealthbuilding for those who have been denied access to traditional financial products. Milo promotes its Crypto Mortgage product in access to credit terms, justifying its high interest rates for loans by a goal of “expand[ing] access to those with crypto wealth who are currently ‘unbanked’ in regards to mortgage loans.”207 RealT, which offers investors the opportunity to buy fractionalized, tokenized interests in rental properties, promotes its product as one that allows “the average person” to make “sound real estate investments without any additional financing.”208 [1]  Another type of accessibility might be described as access parity. Many sellers might be wary of taking Bitcoin or any other cryptoasset as payment for real estate. Yet those with large crypto holdings tend not to want to liquidate them because of the tax consequences of doing so. These buyers desire the same ability to use their crypto holdings as collateral for loans in the same way that those with large tax portfolios can do so. The central idea behind all these crypto real estate efforts is to upend traditional market practices using crypto  ***Land Transfers by ERC-721Tokens***  Actual efforts to implement these crypto real property strategies are still nascent. But that is not to say they do not exist. To better understand how the promise of the hype is being put into practice, the following divides the crypto real property market into three categories (with examples): property transfers, property financing, and property recording-keeping.  At the time of this writing, companies are offering several different types of crypto and blockchain enabled real property transactions. Propy’s product purports to speed up real estate transactions by using blockchain technology from the execution of the contract through the closing. It has been experimenting with the use of blockchain since late 2017, when Propy enabled a buyer of an apartment in Kyiv, Ukraine, to purchase an apartment with crypto and record the transaction on a blockchain ledger.210 The transaction was not solely on the blockchain however—it was also recorded in Ukraine’s paper land records system. We note that it is not clear what blockchain added to the transaction, and the promoter, in a Wall Street Journal article, explained that because Ukraine had adopted regulations that integrated the online and offline title recording processes, the paper deed contained the blockchain address of the digital transaction.211 Four years later, Propy facilitated the sale of that same property, this time in a transaction that used the paper and online systems in a successive rather than a parallel fashion. To facilitate the 2021 transaction, the real property was transferred to a United States limited liability company, and the ERC-721Token purportedly transferred ownership in the LLC.212 This structure eliminates the need for recording each successive sale; the LLC is recorded as the owner of the real estate in the paper land records, and the ownership of the LLC changes through transfer of the ERC-721Token on the applicable blockchain.[1]  Propy has moved its product stateside, conducting an auction of a home in Florida via an ERC-721Token. As it did in the Ukraine sale, Propy first facilitated the transfer of the real estate to an LLC. Then Propy “minted” the property rights into an ERC-721Token.213 According to the Propy website, the ERC-721Token equals ownership rights in the home valued at $650,000, and that the ERC-721Token is “a DeFi asset, that can be borrowed against.”214 The ERC-721Token includes “access to the ownershiptransferred paperwork, a picture of the house, and an ERC-721Token mural by a local artist.215 The ERC-721Token business appears to be a miniscule part of Propy’s overall operations; the remainder of the business provides a platform for online real estate transactions. For these more traditional transactions, Propy provides a platform for storing the transaction documents on the blockchain. As was the case in the original Ukrainian transaction, the blockchain address is on the recorded deed, now by a QR code.216[1]  Some companies have proposed transferring local land records to a blockchain. Propy, mentioned above, has entered a partnership with the city of South Burlington, Vermont, to test blockchain as a recording system.229 Propy’s goal is to become South Burlington’s recording system, but it will take several steps to get there.230 The city received its first “blockchain deed” in early 2018, 231 which was a paper deed, recorded in the city’s land records, that contained a blockchain address and QR code that points to the deed’s location on the public Ethereum blockchain.232 This is according to plan; in the next level of the PropySouth Burlington collaboration the recording office would enter onto the blockchain an acknowledgment that it has received the deed and the necessary fees. Level three required the city recording office to link its records with Propy’s system to enable Propy to record deeds within the city’s system electronically, and the last level—level four—would be achieved when Propy becomes South Burlington’s land records software.233 In late 2019 Propy and the city launched a six-week trial during which Propy’s blockchain registry system ran in parallel to the city’s recording office.234 As of this writing in 2022, the project has not progressed any further than the six week trial.235[1]  The American system for transferring and recording interests in real estate is far from perfect. The fix, however, is not an automated system that facilitates speedy transactions. Real estate straddles the line between tangibility and intangibility. The recording system tracks the intangible aspect, that of title, and that system could benefit from the certainty provided by technological innovations. The tangible aspects of real estate will remain crucial to buyers and sellers, and those aspects, both with respect to the physical condition of the property and to conditions on the land that might indicate title claims, are verified by robust signals such as physical possession.    On one hand, there is a lot of criticism but on the other hand, we can find novel business models and applications of ERC-721Tokens, especially the feature of smart contracts. It can, therefore, be concluded that ERC-721Tokens, even if not in their current form, are here to stay and may promise new ways of protecting digital assets in an immutable and easily traceable form. [2]  Blockchain technology’s promise is its ability to track rights that are not verifiable by existing recording systems or physical signals. This promise makes the intangible case for the technology. The technology’s promise in the physical world, so we have argued, is limited.  Imagine a virtual world existing, with its own economy, parallel to the real material world. Whatever ownership and trade related areas of study we see in this real world will also exist in one form or the other in that virtual world thus opening up a vast avenue of totally novel ideas, concepts, applications, and of course, research. | | | | |  |
| **Project Implementation Method (less than 2500 characters)** | This project will be used to resolve the real life paperwork and property scams, property scams like duplicate property papers, sign cloning and more.  Our project will allow the real-estate to generate a form on our main website where regulations will be defined. i.e. number of relaxation, required CNICs, required auction sheet and more.  Once their requirements are defined the form will be forwarded to admins, verification will be done directly with the real-estate by cross checking the address (agent of that real-estate) which defines the requirements.  After cross checking the address next step is minting the ERC-721 tokens, which defines the ownership of each property, i.e if the current verified real-estate owns 250 properties, 250 ERC-721 tokens will be generated which will be later tokenized to owners of the property. After this step the verified real-estate will be live on blockchain(our website).  Now when a user wants to claim the ownership of his/her property, the user will upload required property papers, once uploaded it will be forwarded to the verified address (agent of the real-estate).  Once an agent of that real-estate confirms the documents (cross checking from the database), then a token will be sent to the user.  Users can now list his/her property on sale. | | | | |  |
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| **Benefits of the** | Without blockchain, every company needs to maintain a different database. Blockchain uses a distributed ledger, which ensures that transactions and data are recorded consistently across all locations. Full transparency is provided since every network user with permissions can see the same data at once. All transactions are time- and date-stamped records with immutability. Members may access the whole transaction history thanks to this, which almost eliminates the possibility of fraud.    Traditional paper-intensive procedures take a long time, are subject to human mistake, and frequently call for third-party mediation. Transactions can be finished more quickly and effectively by automating these operations with blockchain. The blockchain may hold documentation and transaction information together, doing away with the necessity for paper exchange. Clearing and settlement can happen considerably more quickly because there is no need to reconcile various ledgers.    You obtain exclusive ownership rights to an ERC721 token when you have one. Ownership of ERC721 token is connected to a single account because the network is open and transparent and runs on a blockchain. When you buy an ERC721 token, you are buying intellectual property. Finding ownership is simple because everything is recorded on the blockchain. Furthermore, it prevents the owner from stealing IPs from other individuals. Because ERC721 token are non-fungible, they cannot be exchanged for another ERC721 token but can be bought and sold, simplifying the transfer of ownership. | | | | |  |
| **Project (less** |  | | |  | |  |
| **than 2500 characters)** |  | | | | |  |
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| **Technical** | * User Interface * Minor Interface * Admin Interface * Smooth UI * A functional website | | |  |
| **Details of Final Deliverable** |  | | |  |
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| **Final Deliverable of the Project** | * Bug free Smart Contracts * Complete working website | | |  |
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| **Core Industry (Optional)** | - |  |  |  |
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| **Other** |  |  |  |  |
| **Industries**  **(Optional)** | - |  |  |  |
|  |  |  |  |  |
| **Core** | Blockchain, ReactJS, NodeJS, Solidity |  |  |  |
| **Technology** |  |  |  |  |
|  |  |  |  |  |
| **Other** |  |  |  |  |
| **Technologies (Optional)** | - |  |  |  |
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| **Sustainable** |  |  |  |  |
| **Development** | - |  |  |  |
| **Goals**  **(Optional)** |  |  |  |  |
|  |  |  |  |  |
| References     |  |  |  | | --- | --- | --- | | 1. [1] Moringiello, Juliet M., and Christopher K. Odinet. "Blockchain Real Estate and NFTs." *William & Mary Law Review, Forthcoming, U Iowa Legal Studies Research Paper* 2022-16 (2022). 2. [2] Anjum, Najam A., and Mubashir Husain Rehmani. "Non-Fungible Tokens in Business and Management--A Review." *arXiv preprint arXiv:2208.04836* (2022). 3. Moringiello, Juliet M., and Christopher K. Odinet. "The property law of tokens." *Florida Law Review (Forthcoming 2022)* (2021). 4. Raman, Ramakrishnan, and Benson Edwin Raj. "The World of NFTs (Non-Fungible Tokens): The Future of Blockchain and Asset Ownership." *Enabling Blockchain Technology for Secure Networking and Communications*. IGI Global, 2021. 89-108. 5. Duguleană, Mihai, and Florin Gîrbacia. "Augmented Reality meets Non-Fungible Tokens: Insights Towards Preserving Property Rights." *2021 IEEE International Symposium on Mixed and Augmented Reality Adjunct (ISMAR-Adjunct)*. IEEE, 2021. 6. Moringiello, Juliet M., and Christopher K. Odinet. "Blockchain Real Estate and NFTs." *William & Mary Law Review, Forthcoming, U Iowa Legal Studies Research Paper* 2022-16 (2022). 7. Belk, Russell, Mariam Humayun, and Myriam Brouard. "Money, possessions, and ownership in the Metaverse: NFTs, cryptocurrencies, Web3 and Wild Markets." *Journal of Business Research* 153 (2022): 198-205. |  |  | | |  |  |  |
| Project Key Milestones | |  |  |  |
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| **Elapsed time in (days or weeks or month or quarter) since start of the project** | | **Milestone** | **Deliverable** |  |
|  |  |  |  |  |
| Month 1 |  | Requirement gathering, pitch idea, and proposal | Final Proposal and Final Presentation |  |
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| Month 2 |  | Basic UI, Website Pages | ReactJS code and Basic Pages |  |
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| Month 3 |  | Integrating web3 packages | Hardhat/Truffle/MetaMask Connection |  |
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| Month 4 |  | Testing and improving UI and Connecting wallet feature | Responsive Basic UI  Connect Wallet Feature |  |
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| Month 5 |  | Developing Smart Contracts | Solidity Code of basic Functions |  |
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| Month 6 |  | Integrating Smart Contracts with front-end and Audit Smart Contracts for security flaws | web3JS code  Applied tests to check security flaws in smart contract |  |
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| Month 7 |  | Improving UI and deploying smart contracts on test network | Testing website features on TestNetwork |  |
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| Month 8 |  | Work On improving website based on feedback. | Web Application |  |
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Project Equipment Details



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| **Item(s) Name** | **Type** | **No. of Units** | **Per Unit Cost (in Rs)** | **Total (in Rs)** |
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