Blockchain-Certificates

As the fraudulent activity on academic credentials is a growing problem across the globe , recent developments in the software technology provided us not the perfect solution but a promising path as we deeply dive into Blockchain technology. Without a doubt, the current system has multiple flows when it comes to issue, verify and share document of achievements, this is not only causing great mistrust to the system but also costs academic institutions and corporations millions of dollars per year. Blockchain technology provides us a unique opportunity to design more efficient systems with better security solutions which benefits and gives more autonomy to the individual and the other parties involved in the process. Yet, that does not mean that Blockchain is a quick fix to the problem being faced.

There are several implementations of blockchain certificates on the market by both academy and for profit organizations. From where we stand, one or few institutions implementing this technology will not be a able to provide a solution to the problem at hand. In order to achieve an efficient solution, its essential for institutions to cooperate and reach a consensus which can be implanted globally (or at least regionally for the time being) and recognized by authorities.The implementations which is carried out by for-profit organizations are nothing but selling the hype caused by Blockchain. On the other hand , research conducted by Massachusetts Institute of Technology and University of Nicosia provided us great amount of information during our research process , which fundamentally shaped our approach to the problem.After careful considerations, we have decided to implement blockchain certifications in various platforms , starting with Ethereum.

In our very first prototype we kept things as simple as we can to deliver a product as soon as possible.Our system works as it follows , desired document gets uploaded to IPFS to generate a hash string which allows us to uniquely identify the document , afterwards a request gets sent to the smart contract which triggers the write function , an Ethereum transaction is broadcasted to the network from issuers PBK to the individuals PBK , which contains the hash string generated from the PDF file. Verification process is also a simple request to the contract which compares the return values from the contract with the original ones. When the certification is desired to shared , a link get generated which redirects the user to the verified document page.

**TECH STACK**

As we intended to carry out future research on this subject , its possible for us to experiment with different frameworks as we know perfect solution does not exist.Yet Bitcoin implementation remains to be a question since there are several working examples. Its our intention to cooperate with different institutions to provide a use case of blockchain which is adopted globally.