**Problem Statement**

Manually generating and then maintaining the certificates for different winners across multiple competitions is laborious and gruelling activity. So, idea is to make a unified Blockchain-based platform for Saarang (later will extend it to Shaastra, TechSoc, and all other events) which generates Certificates as NFT and maintain them on a Blockchain network. Furthermore, it also allows users to verify the credibility of any certificates issued by the platform.

**Function**

* Representatives of Saarang, Shaastra, and other institute events will be responsible and accountable to input the recipient's details onto the website.
* Certificates will be sent via email to recipients with an URI Link from where certificates can be downloaded to personal storage or cloud, different from the approach that is being tried right now where a crypto wallet is necessary.
* Anyone can verify the ownership of NFT Certificate in the website by making use of NFT's hash, which will return metadata embedded in it, further providing the transaction history.
* Details of Certificates are time-stamped and immutable forever since they are stored in Digital Ledger.
* The transfer of the link to the certificate is stored within blockchain, hence, making it immutable and tamper-proof.

**How does it work?**

The Saarang team will put on a webpage the basic required information for a certificate, like,

* name
* event
* position

So, building a webpage is one of the tasks to be done.

The data will then be minted on an NFT on the Ethereum blockchain. An NFT is nothing but a digital certificate of authenticity.

The URL of the NFT will be stored on the blockchain. The URL will link it to IPFS where the NFT will be stored.

The person who received the certificate, his/her name will be stored in the metadata of the NFT. This will be the proof as a certificate

* There will be a system such that if a winner wants to, he/she can get the NFT transferred to their account as well.
* For this, we would have to create a webpage interface where the participant will have to login using some sort of credentials. Then, they would have to enter their address. The NFT stored in their name will then be transferred to their account.
* The utility of this however, is questionable, as most people won’t know much about having a wallet and sending their address.

The Inter-Planetary File System is a protocol, hypermedia and file-sharing peer-to-peer network for storing and sharing data in a distributed file system. IPFS uses content-addressing to uniquely identify each file in a global namespace connecting IPFS hosts. IPFS **enables users to store and retrieve content based on a “fingerprint” of the content itself** (a cryptographic hash called a CID). By putting an IPFS CID in an NFT, that NFT directly references the data itself rather than a brittle HTTP link. IPFS itself is not data storage – it's a layer on top of data storage.

**How it is better than the current procedure?**

1. Currently, the certificate creation process is time-consuming (since it is done manually).
2. Our solution will enable this to be automated and sent to the respective persons.
3. The data of the person and that of the certificate transfer will be stored in the blockchain. This implies that the respective issuer need not maintain a database for the records. It enables anyone who wants to verify the authenticity to do so within seconds.
4. The above point implies that simply changing one’s name on the document cannot fool someone.
5. Brand value of the institute as a whole for using the cutting-edge technology of NFTs and blockchain.
6. In short, this system also allows the receiver to own the certificate (i.e., have complete control over it) with an easily accessible way to prove it.
7. The recipient can also easily retrieve the certificate with the URI if they lose or misplace it.

**Who is currently doing this?**

d.MBA

The d. MBA is a 6-week online business education course explicitly made for designers.

d.MBA recently launched NFT school certificates using blockchain technology and generative art. The goal is to make school certificates trustworthy.

Sungkyunkwan University

South Korea-based Sungkyunkwan University said it would present the country's first university awards in the format of NFT in a graduation ceremony.

Duke Engineering’s FinTech Program

Students who completed a sequence of Duke Engineering courses on the fundamentals of blockchain technology through online learning partner Coursera have received certificates of completion via a technologically appropriate format – as NFTs or non-fungible tokens. Duke is among the first institutions to provide educational credentials as NFTs. The NFT certificates were “minted” and distributed via the blockchain, through the Polygon network, to the 22 students who completed the most recent Coursera session.

College of Management Academic Studies, Israel

The College of Management Academic Studies in Israel has announced that it is going to award non-fungible tokens (NFTs) to the students who are graduating this year from MBA courses related to Blockchain, Digital Currencies, and Fintech.

This step, to distribute certificates to students in the form of NFTs by the management studies college is the first of its kind in Israel.