



Centurion  
UNIVERSITY  
*Shaping Lives,  
Empowering Communities...*

School: ..... Campus: .....

Academic Year: ..... Subject Name: ..... Subject Code: .....

Semester: ..... Program: ..... Branch: ..... Specialization: .....

Date: .....

## Classroom Learning

(Learning by Listening and Observations)

**Name of the Topic:** NFT: Non-Fungible Token

**Learning Outcome:**

**Concepts learned (Mention 2/3 principles):**

Based on the classwork, the principal concepts I have learned include:

1. The fundamental concept of a Non-Fungible Token (NFT) as a unique cryptographic asset on a blockchain with distinct identification codes and metadata.
2. The complete architecture of how NFTs operate using smart contracts, primarily on blockchains like Ethereum, which enforce ownership and manage transferability.
3. The characteristics that differentiate NFTs from fungible cryptocurrencies, specifically their uniqueness, indivisibility, and non-interchangeable nature.

**\* New techniques learned:**

Additionally, I have acquired new knowledge in the following areas:

1. Techniques for minting an NFT, which is the process of publishing a unique token on the blockchain through a smart contract.
2. Procedures for understanding the ERC-721 and ERC-1155 token standards that define the structure and functions required for creating NFTs on Ethereum.
3. The process of how ownership is proven and transferred on-chain, while the actual digital asset (e.g., a high-resolution image) is typically stored off-chain.
4. Methods for verifying the authenticity and provenance of an NFT by tracing its transaction history back to the original minter on the blockchain.

### \* Related Project/Practice work experienced and learned:

During the practice sessions of the lab work, I engaged in and developed proficiency with programs and simulations in the following areas:

1. Writing and deploying a basic ERC-721 smart contract using Solidity in the Remix IDE.
  2. Simulating the minting process by calling the mint function to create a new NFT with a unique token ID.
  3. Creating a simple script using Web3.js to query NFT metadata and verify ownership of a specific token ID for a given user address.
  4. Simulating a transfer of an NFT from one Ethereum account to another by invoking the smart contract's transferFrom function.
- 

### \* New Software/Machine/Tool/Equipment/Experiment learned:

During the lab session, I used the Remix IDE for writing smart contracts, MetaMask for interacting with the blockchain, and OpenZeppelin's library of secure, standard-compliant smart contracts to build our NFT functionality. IPFS (InterPlanetary File System) was used for decentralized metadata storage.

### \* Application of concept(s) (preferably real life scenario):

1. **Digital Art and Collectibles:** NFTs allow artists to tokenize their work, proving scarcity and ownership, and enabling them to earn royalties from secondary sales automatically.
  2. **Gaming:** NFTs represent in-game assets like characters, skins, or virtual land, allowing players to have true ownership that can be traded outside the game's ecosystem.
  3. **Real-World Assets:** NFTs can be used to represent ownership of physical assets, such as real estate deeds or luxury goods, linking them to a tamper-proof digital record on the blockchain.
- 

### \* Case Studies/Examples:

1. **Digital Art Market:** The sale of Beeple's "Everydays: The First 5000 Days" for \$69 million at Christie's auction house demonstrated how NFTs can create a new market for digital artists.
2. **Music Industry:** Musicians like Kings of Leon released albums as NFTs, providing owners with special perks like limited edition vinyl and concert tickets, creating new fan engagement models.
3. **Membership and Identity:** Projects like Bored Ape Yacht Club (BAYC) use NFTs as access tokens to an exclusive online community, digital clubhouse, and real-world events, proving their utility beyond mere art.

### Assessment:

Marks Obtained: ..... / 10

Signature of the Faculty:

Signature of the Student:

Name : PN Archana

Regn. No. : 240720100147