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

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

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

Date: .....

Applied and Action Learning

(Learning by Doing and Discovery)

Name of the Experiement :

* Coding Phase: Pseudo Code / Flow Chart / Algorithm

Algorithm:

1.Upload Image to Pinata and copy its IPFS link.
2.Create Metadata JSON, include image link, then upload to Pinata and copy metadata IPFS link.
3.Write and Deploy NFT Smart Contract on a blockchain (e.g., Ethereum Sepolia testnet).
4.Mint NFT by calling mint function with:
-Your wallet address.
-The metadata IPFS URI.
5.Check NFT in MetaMask under NFTs section.

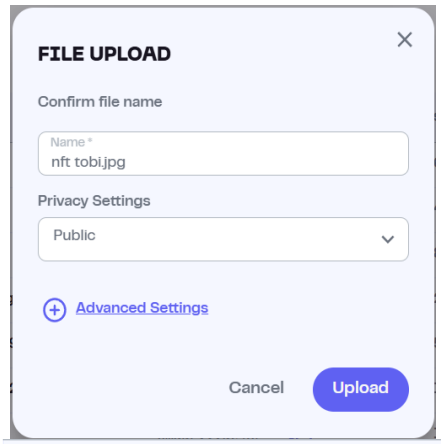
* Softwares used

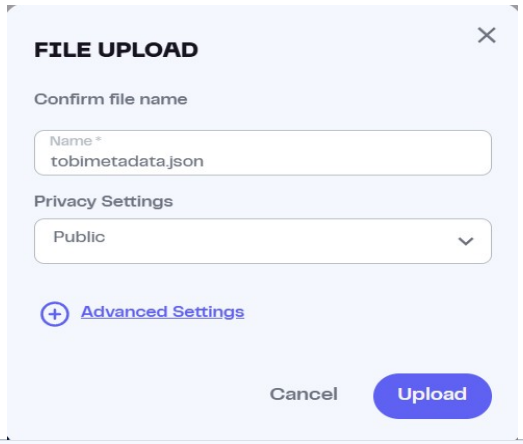
1.Pinata
2.MetaMask
3.Remix IDE
4.Ethereum Test Network (Sepolia)

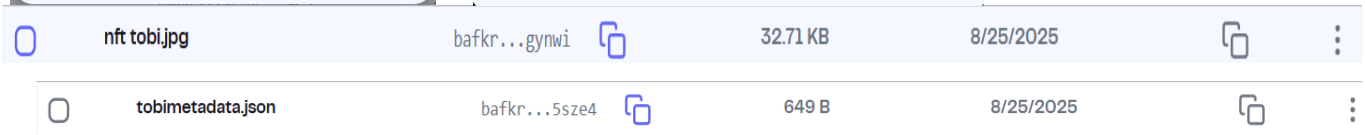
*As applicable according to the experiment.
Two sheets per experiment (10-20) to be used.

* Implementation Phase: Final Output (no error)

First go to your pinata account and upload your image/logo of NFT and then write a metadata of your NFT in.json file and also add the .json file to pinata account







```
{
  "name": "Tobi NFT #1",
  "description": "Exclusive Tobi-themed NFT stored on IPFS via Pinata.",
  "image": "https://green-impressive-hyena-209.mypinata.cloud/ipfs/bafkreicn7vuyba73zejg2fzstq725uzagmz44st4s2b2xapatve2ygynwi",
  "attributes": [
    {
      "trait_type": "Character",
      "value": "Tobi"
    },
    {
      "trait_type": "Alias",
      "value": "Masked Man"
    },
    {
      "trait_type": "Power Level",
      "value": "8500"
    },
    {
      "trait_type": "Special Ability",
      "value": "Space-Time Ninjutsu"
    },
    {
      "trait_type": "Background",
      "value": "Akatsuki"
    }
  ]
}
```

After uploading the logo and .json file in remix IDE write your Smart contract for NFT creation.

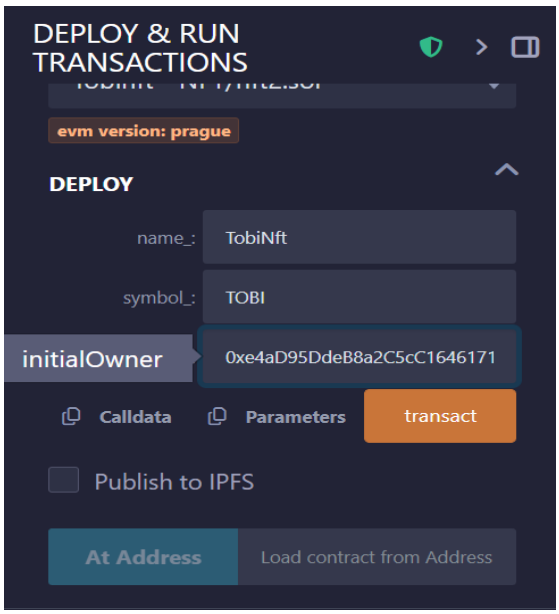
*As applicable according to the experiment.
Two sheets per experiment (10-20) to be used.

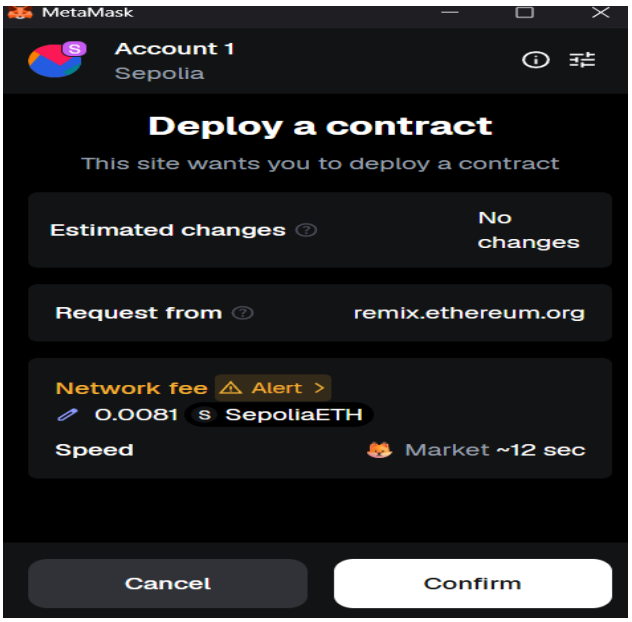
* Implementation Phase: Final Output (no error)

```solidity
// SPDX-License-Identifier: MIT
pragma solidity ^0.8.24;

import "@openzeppelin/contracts/token/ERC721/extensions/ERC721URIStorage.sol";
import "@openzeppelin/contracts/access/Ownable.sol";
contract Tobinft is ERC721URIStorage, Ownable {
    uint256 private _nextId;
    constructor(string memory name_, string memory symbol_, address initialOwner)
        ERC721(name_, symbol_)
        Ownable(initialOwner)
    {}
    function mintTo(address to, string memory metadataURI) external onlyOwner returns (uint256) {
        _nextId += 1;
        uint256 tokenId = _nextId;
        _safeMint(to, tokenId);
        _setTokenURI(tokenId, metadataURI);
        return tokenId;
    }
    function totalMinted() external view returns (uint256) {
        return _nextId;
    }
}
```

After compile the .sol file then deploy the smart contract in deploy section give name of the token and Symbl and the address of your wallet





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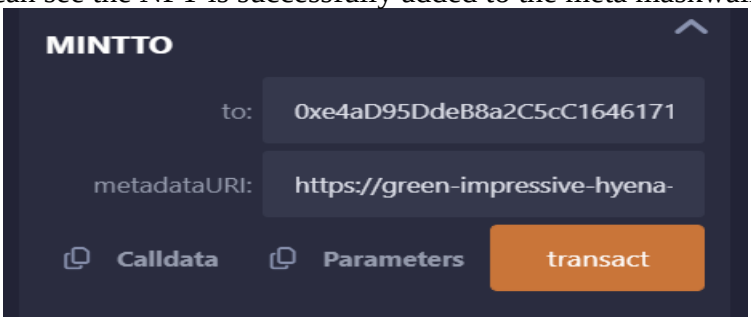
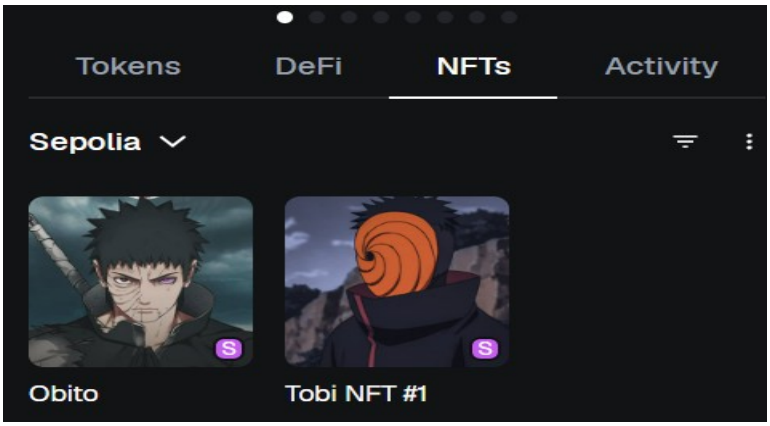
* Implementation Phase: Final Output (no error)

After Deployment then in MINT To section give your wallet address and metadata URI after this you can see the NFT is successfully added to the meta maskwallet





* Observations

The NFT image and metadata were uploaded to IPFS using Pinata, ensuring decentralized storage. A smart contract was deployed on the Sepolia Testnet through Remix and MetaMask. The minting process successfully linked the NFT to the given wallet address using the IPFS metadata URI. Finally, the NFT appeared in MetaMask, confirming successful creation and deployment.

ASSESSMENT

Rubrics	Full Mark	Marks Obtained	Remarks
Concept	10		
Planning and Execution/ Practical Simulation/ Programming	10		
Result and Interpretation	10		
Record of Applied and Action Learning	10		
Viva	10		
Total	**50**		

Signature of the Student:

Name :

Regn. No. :

Signature of the Faculty:

**As applicable according to the experiment. Two sheets per experiment (10-20) to be used.*