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 : Mint it Yourself – NFT Creation and Deployment

* Coding Phase: Pseudo Code / Flow Chart / Algorithm

1. **Write Smart Contract**
   - Define an ERC-721 contract (NFT standard).
   - Import OpenZeppelin libraries (ERC721URIStorage, Ownable).
   - Add functions:
     - constructor() → set name, symbol, owner.
     - mintTo(address, metadataURI) → mint NFT with metadata.
   - Compile contract.
2. **Deploy Contract**
   - Connect Remix with MetaMask (Injected Provider).
   - Deploy contract to Sepolia testnet with required parameters.
   - Confirm transaction in MetaMask.
3. **Mint NFT**
   - Call the mintTo() function with:
     - Recipient wallet address.
     - Metadata URI (IPFS link from Pinata).
   - Confirm minting transaction in MetaMask.
4. **Verify in Wallet**
   - Open MetaMask → NFT section → check NFT minted.
   - Optionally, verify contract and view token on **Etherscan / Blockscout**.

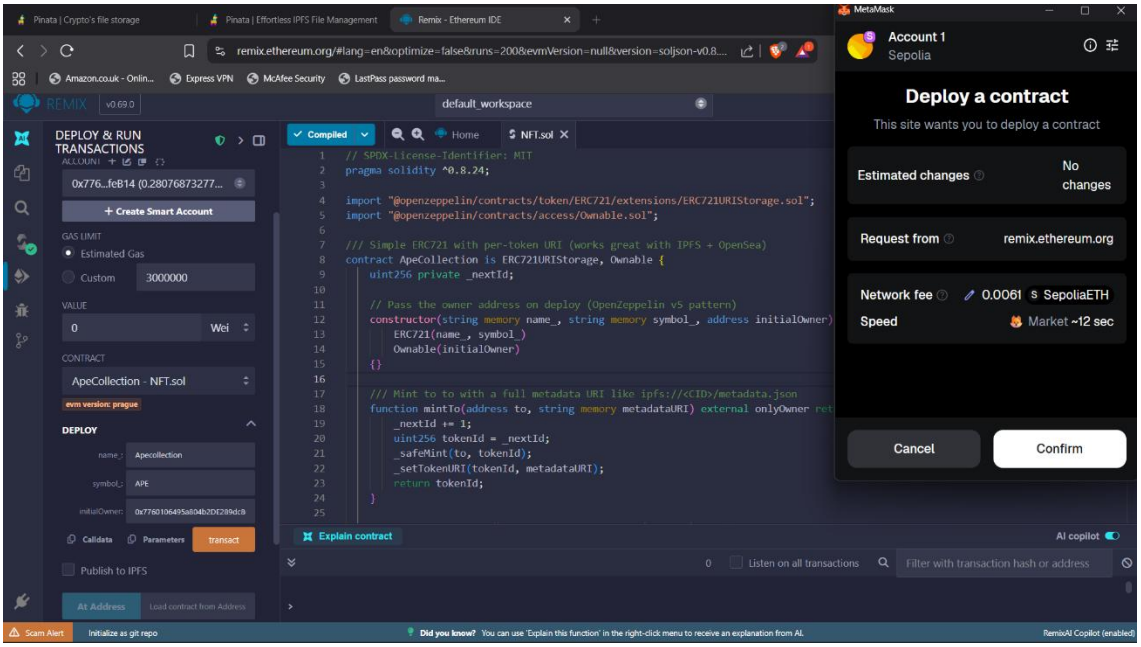
Software used

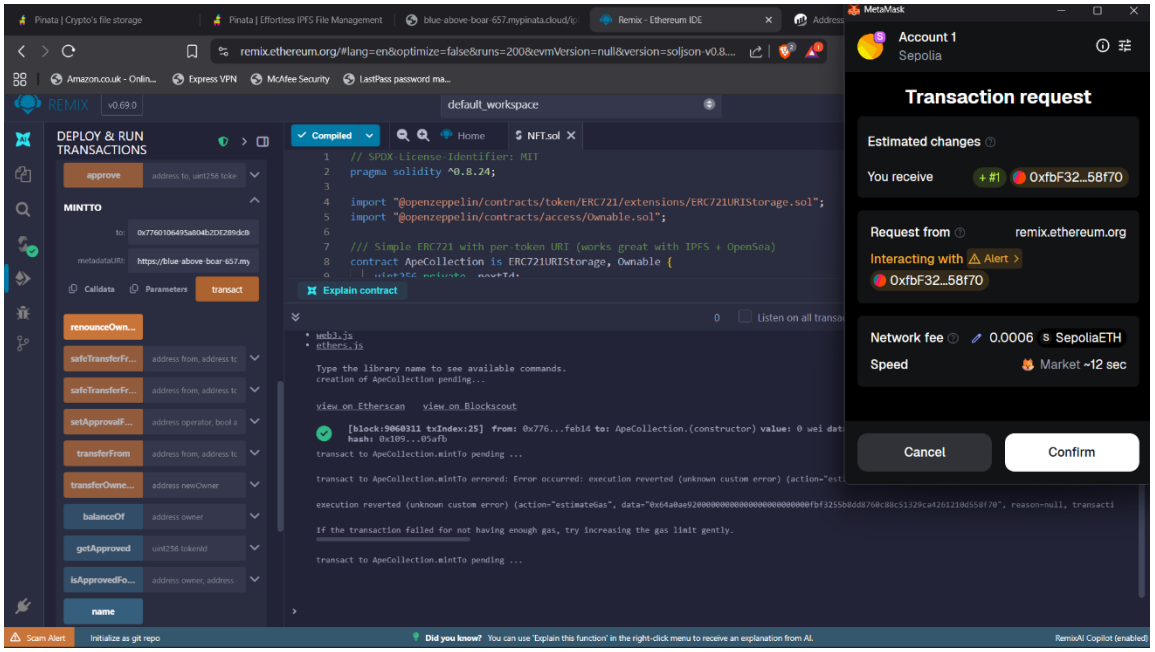
1. MetaMask Wallet
2. Remix IDE.
3. MS Word.
4. Brave for researching.

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

* Implementation Phase: Final Output (no error)

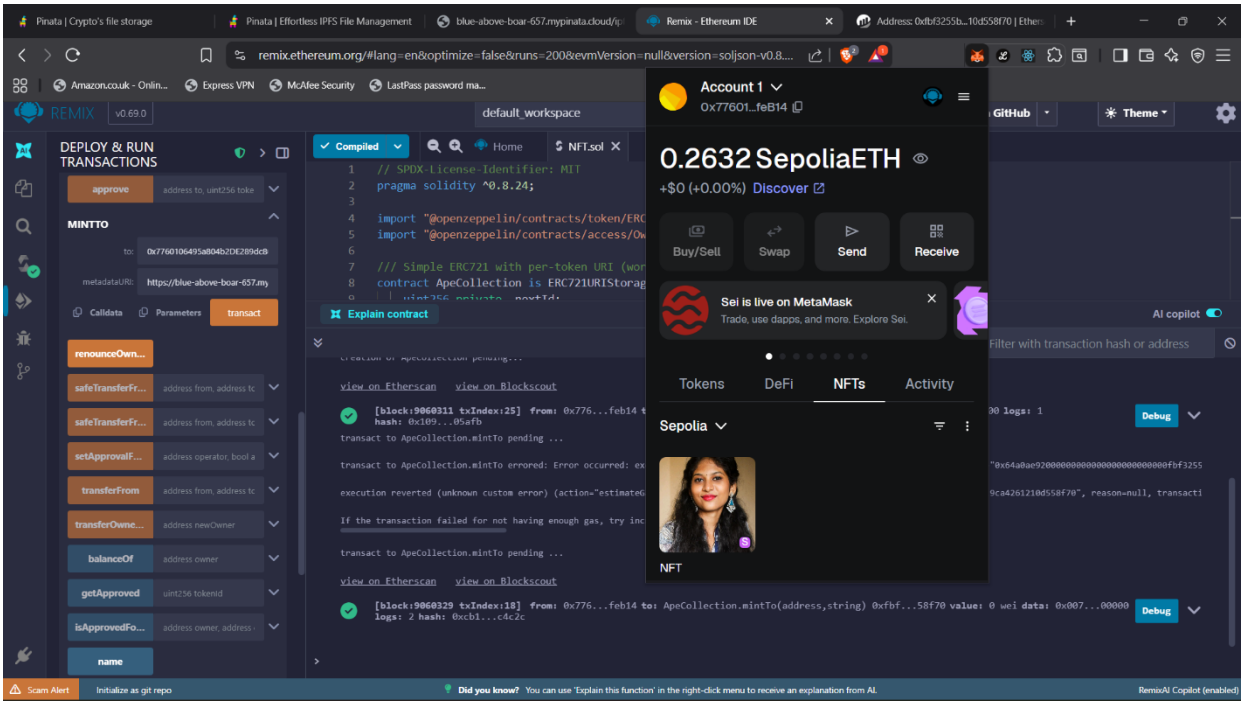
- Write ERC-721 smart contract in **Remix**.
- Compile the contract without errors.
- Deploy on **Sepolia testnet** using MetaMask.
- Upload NFT metadata (image + JSON) to **IPFS (Pinata/Infura)**.
- Copy IPFS CID link → use it as tokenURI.
- Call mintTo() function to mint NFT.
- Confirm transaction in MetaMask.
- NFT appears in **MetaMask → NFTs tab**.





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

* Implementation Phase: Final Output (no error)



* Observations:

- ☐ **MetaMask Network** must be set to **Sepolia** before deploying/minting.
- ☐ Each action (deploy/mint) requires **gas fees (SepoliaETH)**.
- ☐ Metadata must follow JSON schema (image, name, description).
- ☐ The NFT becomes visible in MetaMask only if:
  - Metadata URI is valid.
  - NFT contract is ERC-721 compliant.
- ☐ Etherscan shows transaction history and confirms NFT ownership.

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

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.