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 Experiment: Build a Market – Basic NFT Marketplace Logic

*Coding Phase: Pseudo Code / Flow Chart / Algorithm

1. Open Remix IDE and create two Smart Contracts and compile the contracts.

- Build a SimpleNFT contract that lets users mint NFTs with a token URI.
- Build an NFTMarketplace contract that allows users to list NFTs for sale and others to buy them.

2. Deploy our Contracts by setting up Injected - Provider MetaMask as environment.

- Deploy the SimpleNFT contract to the blockchain and get its address.
- Deploy the NFTMarketplace contract to the blockchain and get its address.

3. Then we need to set Up our Frontend by creating a web app using React along with adding the contract addresses and their ABI (contract interfaces) to our app and using ethers.js to communicate with the blockchain.

4. Ask the user to connect their crypto wallet (like MetaMask).

5. Mint NFT by letting the user input a Token URI (link to NFT metadata) from pinata.

6. After minting, get the Token ID of the new NFT.

7. List NFT for Sale by letting the user input the NFT contract address, Token ID, and price in ETH.

8. Approve the marketplace contract to manage that specific NFT.

9. Call the list function on the marketplace contract with these details and the marketplace will assign a Listing ID for the sale.

10. Buy NFT by letting a buyer input the Listing ID.

11. Call the buy function on the marketplace contract, sending the ETH price and the ownership of the NFT transfers to the buyer.

**** As applicable according to the experiment.***

Two sheets per experiment (10-20) to be used.

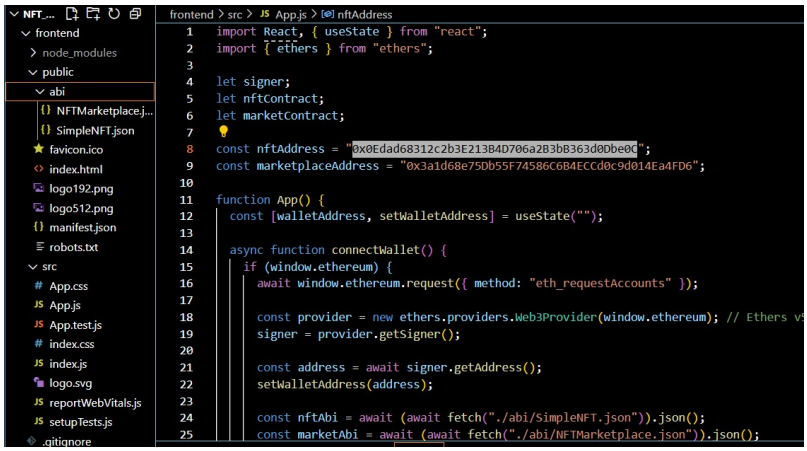
* Software used:

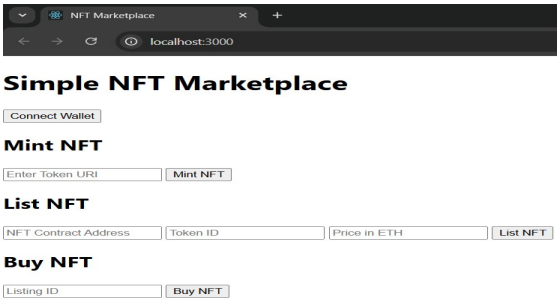
- Web browser
- Meta Mask wallet
- Sepolia Testnet
- Remix IDE

* Testing Phase: Compilation of Code (error detection)

No error

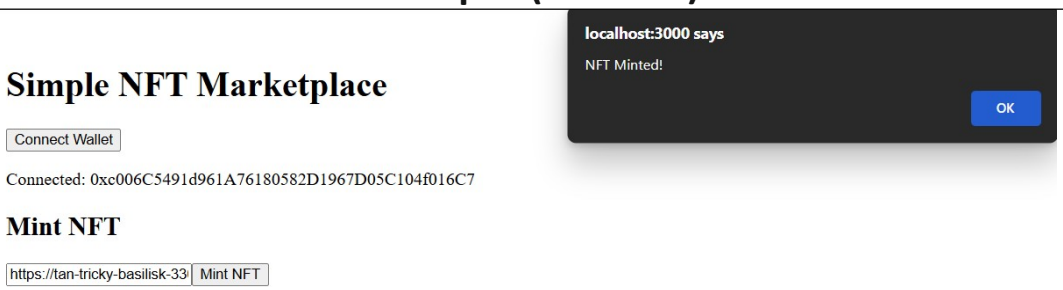
* Implementation Phase: Final Output (no error)

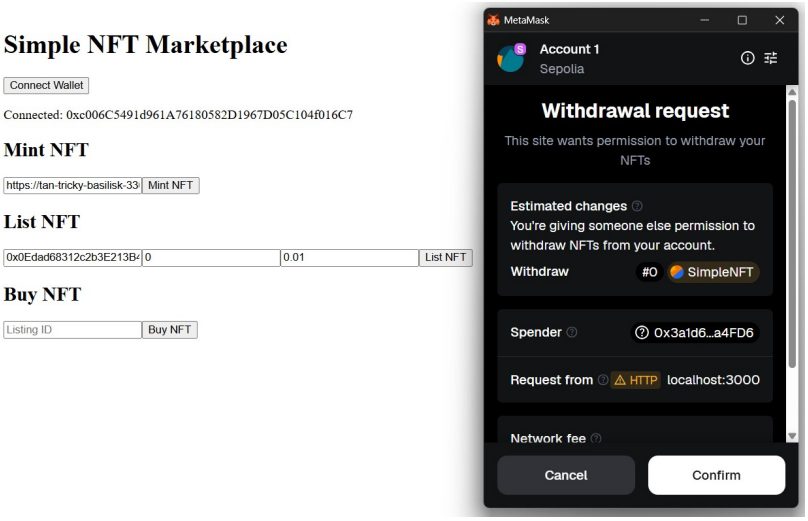


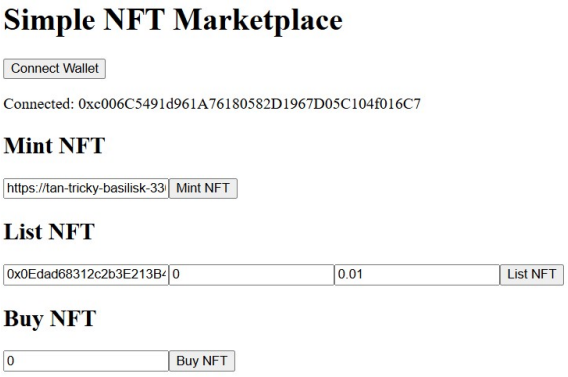


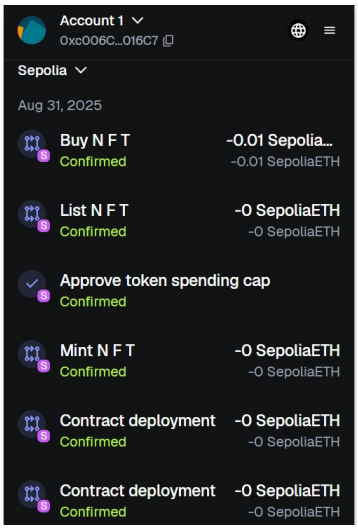
**** As applicable according to the experiment.***
Two sheets per experiment (10-20) to be used.

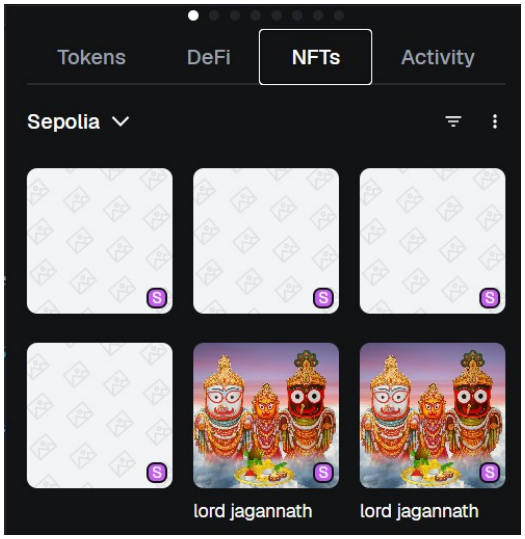
* Implementation Phase: Final Output (no error)











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

* Observation :

- From this experiement we observed how to deploy NFT and marketplace contracts.
- Connect a crypto wallet to the app.
- Mint NFTs by providing metadata URI and retrieve Token IDs after minting.
- Approve and list NFTs for sale with prices.
- Use Listing IDs to buy NFTs securely.
- Transfer ownership and payment on purchase.
- Build a simple UI to interact with blockchain.

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 :

Signature of the Faculty :

Regn. No. :

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