Centurion University

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

□ **Deploy Contracts**

- Deploy an ERC721 NFT contract (for minting NFTs).
- Deploy a Marketplace contract that allows listing, buying, cancelling, and updating NFT prices.

□ **Connect Wallet**

- Connect MetaMask on Sepolia Testnet to the frontend DApp.

□ **Approve Marketplace**

- Call setApprovalForAll(marketplaceAddress, true) from NFT contract to allow the marketplace to manage NFTs.

□ **List NFT**

- Call listItem(nftAddress, tokenId, price) → NFT is listed in marketplace with a unique listingId.

□ **Buy NFT**

- Buyer calls buy(listingId) while sending ETH equal to the listing price.
- Ownership of NFT transfers to the buyer.

□ **Cancel Listing**

- Seller can call cancel(listingId) to remove their NFT from sale.

□ **Update Price**

- Seller can call updatePrice(listingId, newPrice) to change the price of a listed NFT.

□ **Withdraw Proceeds**

- Seller calls withdrawProceeds() to claim ETH earned from NFT sales.

* 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.

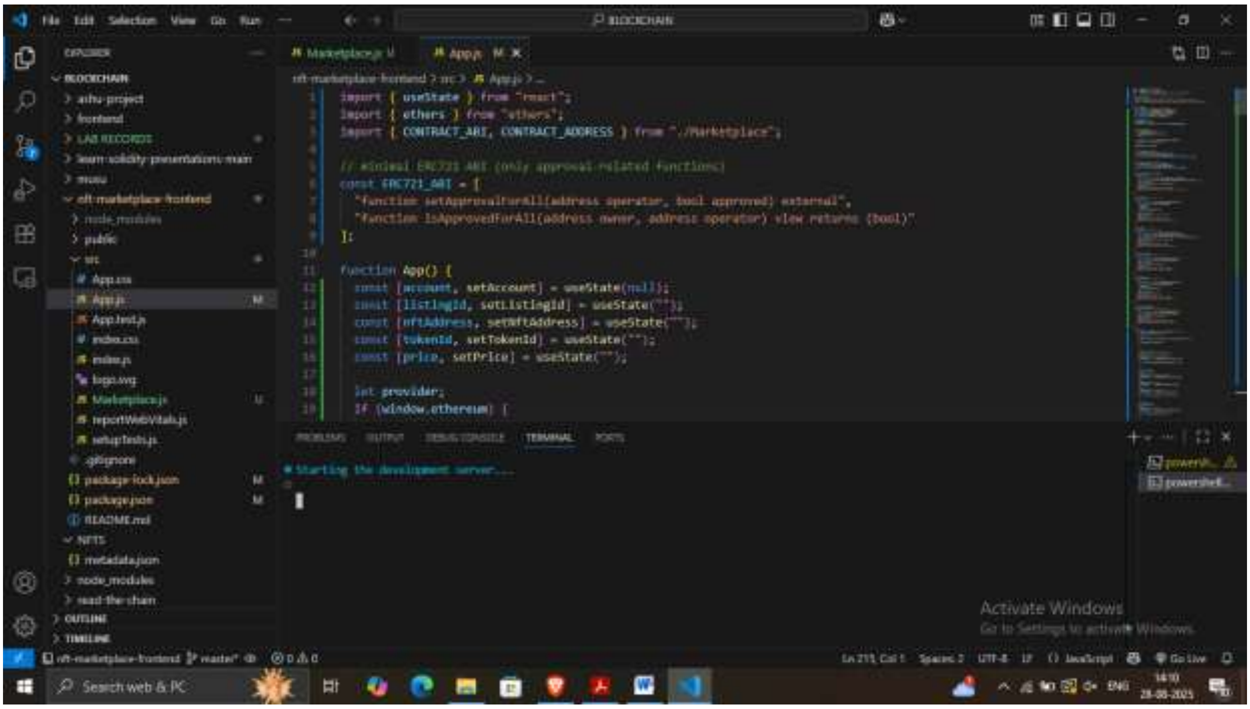
* Implementation Phase: Final Output (no error)

□ NFTs can be listed, purchased, cancelled, or updated on Sepolia Testnet.

□ Transactions trigger success messages in the DApp UI (NFT listed successfully, Price updated!, etc.).

□ ETH proceeds are stored securely until withdrawn by sellers.

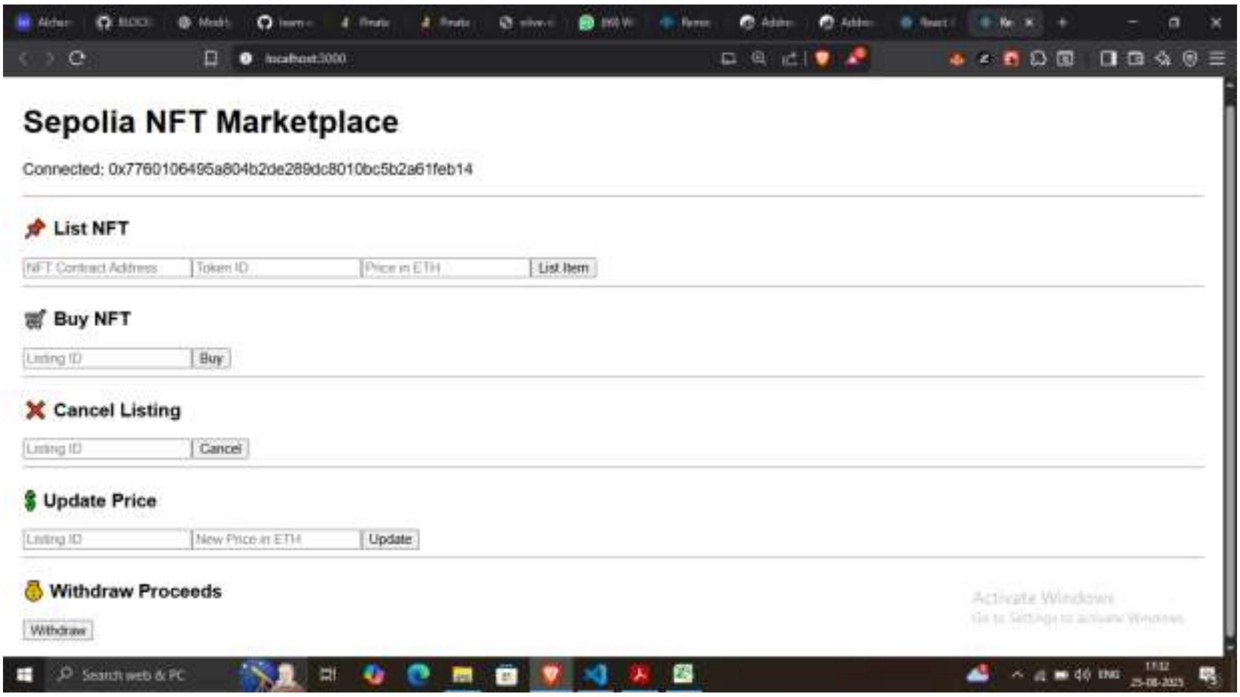
□ Ownership of NFTs correctly transfers between accounts after purchase.



```
import { useState } from "react";
import { ethers } from "ethers";
import { CONTRACT_ABI, CONTRACT_ADDRESS } from "./Marketplace";

// Minimal ERC721 ABI (only approval-related functions)
const ERC721_ABI = [
  "function setApprovalForAll(address operator, bool approved) external",
  "function isApprovedForAll(address owner, address operator) view returns (bool)"
];

function App() {
  const [account, setAccount] = useState(null);
  const [listingId, setListingId] = useState("");
  const [nftAddress, setNftAddress] = useState("");
  const [tokenId, setTokenId] = useState("");
  const [price, setPrice] = useState("");

  let provider;
  if (window.ethereum) {
```

```
* Starting the development server...
```

BLOCKCHAIN
Marketplace.js
App.js
nft-marketplace-frontend > src > App.js
PROBLEMS
OUTPUT
DEBUG CONSOLE
TERMINAL
PORTS
Activate Windows
Go to Settings to activate Windows.



localhost:3000

Sepolia NFT Marketplace

Connected: 0x7760106495a804b2de289dc8010bc5b2a61feb14

📌 List NFT

NFT Contract Address | Token ID | Price in ETH | List Item

🛒 Buy NFT

Listing ID | Buy

❌ Cancel Listing

Listing ID | Cancel

💲 Update Price

Listing ID | New Price in ETH | Update

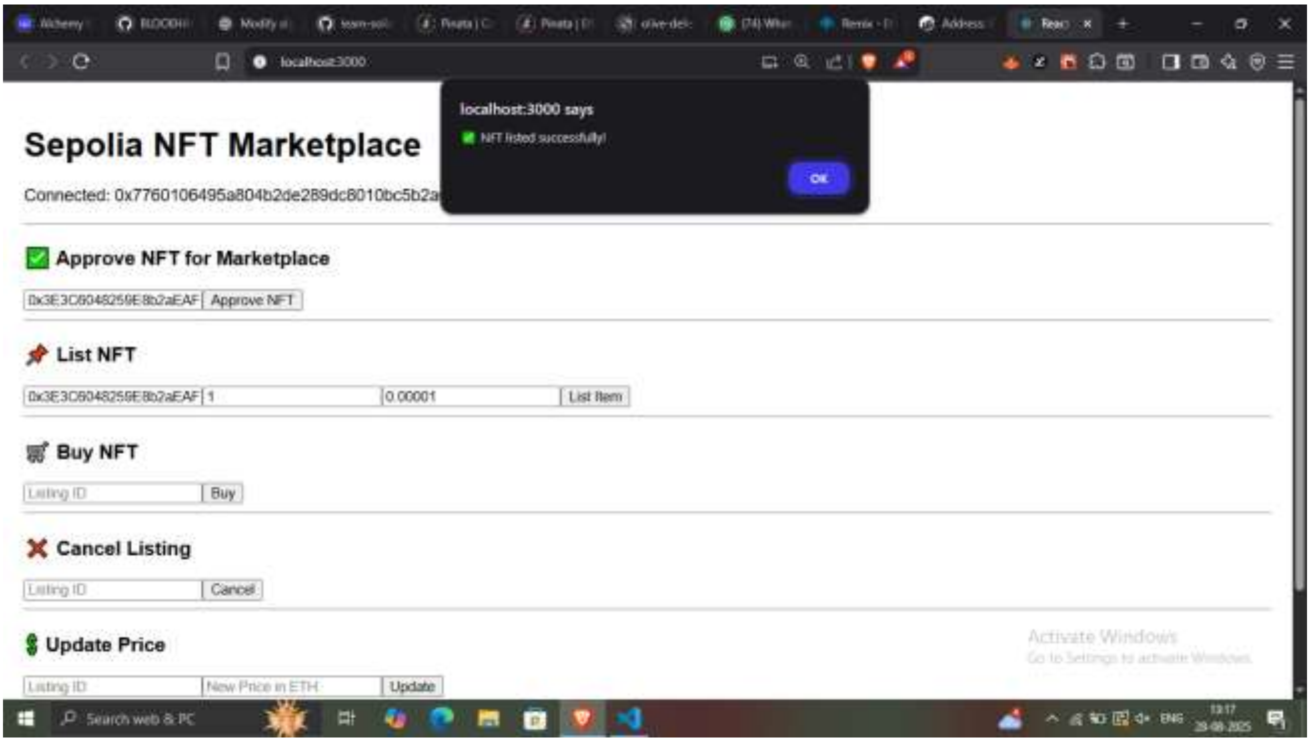
💰 Withdraw Proceeds

Withdraw

Activate Windows
Go to Settings to activate Windows.

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

* Implementation Phase: Final Output (no error)



localhost:3000 says

✅ NFT listed successfully!

OK

Sepolia NFT Marketplace

Connected: 0x7760106495a804b2de289dc8010bc5b2a

✅ Approve NFT for Marketplace

0x3E3C6048259E8b2aEAF | Approve NFT

📌 List NFT

0x3E3C6048259E8b2aEAF | 1 | 0.00001 | List Item

🛒 Buy NFT

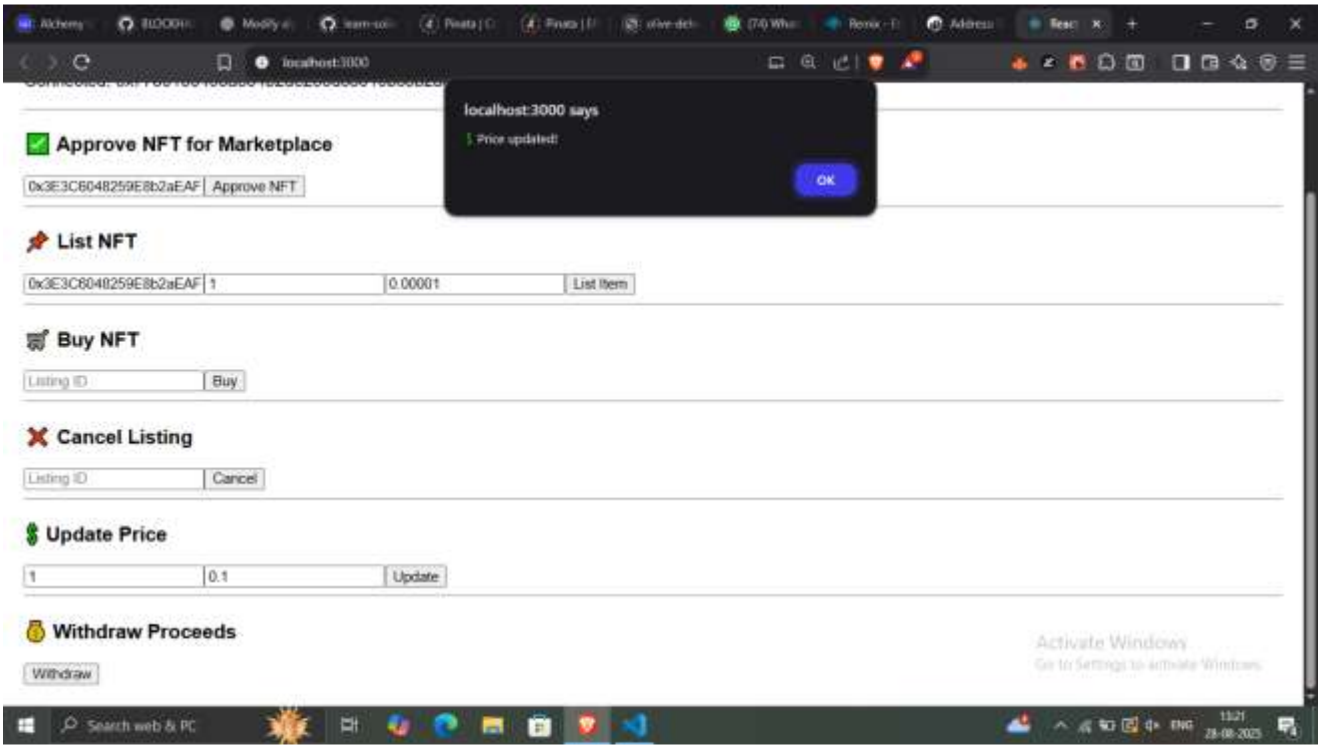
Listing ID | Buy

❌ Cancel Listing

Listing ID | Cancel

💲 Update Price

Listing ID | New Price in ETH | Update



localhost:3000 says

✅ Price updated!

OK

✅ Approve NFT for Marketplace

0x3E3C6048259E8b2aEAF | Approve NFT

📌 List NFT

0x3E3C6048259E8b2aEAF | 1 | 0.00001 | List Item

🛒 Buy NFT

Listing ID | Buy

❌ Cancel Listing

Listing ID | Cancel

💲 Update Price

1 | 0.1 | Update

💰 Withdraw Proceeds

Withdraw

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

* Observations:

□ Marketplace requires **approval** before listing NFTs.

□ Each NFT listing is tracked by a unique listingId.

□ Buyers must pay **exact ETH** price, otherwise transaction fails.

□ Smart contract prevents self-purchase by the seller.

□ Sellers can cancel or update their NFT listings anytime.

□ Proceeds are not sent instantly — instead they are **withdrawn securely**.

□ Marketplace ensures **trustless peer-to-peer NFT trading** using blockchain logic.

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.***