

라우터 설치

• npm install react-router-dom

```
탐색기
                      JS index.js
                                  X JS App.js
✓ WEB3BASE
                       src > JS index.js > ...
                        1 import React from 'react';
 > node_modules
                         2 import ReactDOM from 'react-dom/client';
> public
                         3 import './index.css';

✓ src

                         4 import App from './App';
 JS Abi.js
                       5 import reportWebVitals from './reportWebVitals';
 # App.css
                            import { BrowserRouter } from 'react-router-dom';
 JS App.js
                             const root = ReactDOM.createRoot(document.getElementById('root'));
 JS App.test.js
                         9 root.render(
 # index.css
                              <BrowserRouter>
 JS index.js
                               <App />
                               </BrowserRouter>
 JS reportWebVitals.js
 Js setupTests.js
                             // If you want to start measuring performance in your app, pass a function
gitignore
{} package-lock.json
{} package.json
                             reportWebVitals();

 README.md
```

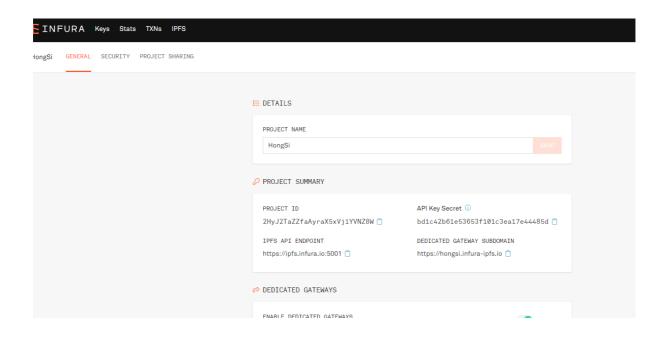
```
> WEB3BASE
> node_modules
> public
> src

> pages
| JS Abi.js
| pofol.css
| pofol.js
| pofolList.css
| JS pofolList.js
| App.css
| JS App.js
| JS App.test.js
| index.css
| JS index.js
```

```
JS index.js
               JS Abi.js
                                JS App.js
                                               JS pofol.js
                                                                JS pofol
src > J5 App.js > [∅] default
  1 \vee import React, {Component, useState} from 'react';
  2 import {Route, Routes} from 'react-router-dom';
     import Pofol from './pages/pofol';
      import PofolList from './pages/pofolList';
  7 v class App extends Component{
  8 v render(){
          return(
            <Routes>
             <Route path='/' element = {<Pofol />} />
               <Route path='/PofolList' element ={< PofolList />} />
            </Routes>
 21
     export default App;
```

설치 (인퓨라)

• npm i ipfs-http-client



remix - pofol.sol

```
// SPDX-License-Identifier: MIT
pragma solidity ^0.8.9;
import "@openzeppelin/contracts@4.8.0/token/ERC721/ERC721.sol";
import "@openzeppelin/contracts@4.8.0/token/ERC721/extensions/ERC721Enumerable.sol";
import \ "@openzeppelin/contracts@4.8.0/token/ERC721/extensions/ERC721URIStorage.sol"; \\
import "@openzeppelin/contracts@4.8.0/access/Ownable.sol";
import "@openzeppelin/contracts@4.8.0/utils/Counters.sol";
contract Portfolio is ERC721, ERC721Enumerable, ERC721URIStorage, Ownable {
   using Counters for Counters.Counter;
   Counters.Counter private _tokenIdCounter;
   constructor() ERC721("portfolio", "PTF") {}
   function safeMint(address to, string memory uri) public {
       uint256 tokenId = _tokenIdCounter.current();
       _tokenIdCounter.increment();
       _safeMint(to, tokenId);
       _setTokenURI(tokenId, uri);
   }
```

```
// The following functions are overrides required by Solidity.
    function _beforeTokenTransfer(address from, address to, uint256 tokenId, uint256 batchSize)
        internal
        override(ERC721, ERC721Enumerable)
    {
        super._beforeTokenTransfer(from, to, tokenId, batchSize);
    }
    function _burn(uint256 tokenId) internal override(ERC721, ERC721URIStorage) {
        super._burn(tokenId);
    function tokenURI(uint256 tokenId)
        public
        view
        override(ERC721, ERC721URIStorage)
        returns (string memory)
    {
        return super.tokenURI(tokenId);
    }
    function supportsInterface(bytes4 interfaceId)
        public
        view
        override(ERC721, ERC721Enumerable)
        returns (bool)
    {
        return super.supportsInterface(interfaceId);
    }
}
```

abi.js

```
const Abi = [
    "inputs": [],
    "stateMutability": "nonpayable",
    "type": "constructor"
 },
    "anonymous": false,
    "inputs": [
      {
        "indexed": true,
        "internalType": "address",
        "name": "owner",
        "type": "address"
      },
        "indexed": true,
        "internalType": "address",
        "name": "approved",
        "type": "address"
      },
        "indexed": true,
```

```
"internalType": "uint256",
      "name": "tokenId",
      "type": "uint256"
   }
  ],
  "name": "Approval",
  "type": "event"
},
  "anonymous": false,
  "inputs": [
      "indexed": true,
      "internalType": "address",
      "name": "owner",
      "type": "address"
      "indexed": true,
      "internalType": "address",
      "name": "operator",
      "type": "address"
      "indexed": false,
      "internalType": "bool",
      "name": "approved",
      "type": "bool"
   }
  "name": "ApprovalForAll",
  "type": "event"
},
  "anonymous": false,
  "inputs": [
    {
      "indexed": true,
      "internalType": "address",
      "name": "previousOwner",
      "type": "address"
      "indexed": true,
      "internalType": "address",
      "name": "newOwner",
      "type": "address"
   }
  ],
  "name": "OwnershipTransferred",
  "type": "event"
},
  "anonymous": false,
  "inputs": [
      "indexed": true,
      "internalType": "address",
      "name": "from",
      "type": "address"
    },
```

```
"indexed": true,
      "internalType": "address",
      "name": "to",
      "type": "address"
      "indexed": true,
      "internalType": "uint256",
      "name": "tokenId",
      "type": "uint256"
    }
  ],
  "name": "Transfer",
  "type": "event"
},
  "inputs": [
     "internalType": "address",
     "name": "to",
     "type": "address"
      "internalType": "uint256",
      "name": "tokenId",
      "type": "uint256"
   }
  ],
  "name": "approve",
  "outputs": [],
  "stateMutability": "nonpayable",
  "type": "function"
},
  "inputs": [
     "internalType": "address",
     "name": "owner",
     "type": "address"
   }
  ],
  "name": "balanceOf",
  "outputs": [
      "internalType": "uint256",
      "name": "",
      "type": "uint256"
   }
  ],
  "stateMutability": "view",
  "type": "function"
},
  "inputs": [
      "internalType": "uint256",
      "name": "tokenId",
      "type": "uint256"
   }
  "name": "getApproved",
  "outputs": [
```

```
"internalType": "address",
      "name": "",
      "type": "address"
    }
  ],
  "stateMutability": "view",
  "type": "function"
},
  "inputs": [
     "internalType": "address",
     "name": "owner",
     "type": "address"
      "internalType": "address",
      "name": "operator",
      "type": "address"
   }
  "name": "isApprovedForAll",
  "outputs": [
     "internalType": "bool",
      "name": "",
      "type": "bool"
   }
  "stateMutability": "view",
  "type": "function"
},
  "inputs": [],
  "name": "name",
  "outputs": [
     "internalType": "string",
     "name": "",
     "type": "string"
   }
  ],
  "stateMutability": "view",
  "type": "function"
},
  "inputs": [],
  "name": "owner",
  "outputs": [
     "internalType": "address",
      "name": "",
      "type": "address"
   }
  "stateMutability": "view",
  "type": "function"
},
  "inputs": [
```

```
"internalType": "uint256",
      "name": "tokenId",
      "type": "uint256"
   }
  ],
  "name": "ownerOf",
  "outputs": [
      "internalType": "address",
      "name": "",
      "type": "address"
    }
  ],
  "stateMutability": "view",
  "type": "function"
},
  "inputs": [],
  "name": "renounceOwnership",
  "outputs": [],
  "stateMutability": "nonpayable",
  "type": "function"
},
  "inputs": [
     "internalType": "address",
     "name": "to",
      "type": "address"
      "internalType": "string",
      "name": "uri",
      "type": "string"
   }
  ],
  "name": "safeMint",
  "outputs": [],
  "stateMutability": "nonpayable",
  "type": "function"
},
  "inputs": [
      "internalType": "address",
     "name": "from",
      "type": "address"
    },
      "internalType": "address",
      "name": "to",
      "type": "address"
      "internalType": "uint256",
      "name": "tokenId",
      "type": "uint256"
    }
  ],
  "name": "safeTransferFrom",
  "outputs": [],
  "stateMutability": "nonpayable",
```

```
"type": "function"
},
  "inputs": [
      "internalType": "address",
      "name": "from",
      "type": "address"
      "internalType": "address",
      "name": "to",
      "type": "address"
      "internalType": "uint256",
      "name": "tokenId",
      "type": "uint256"
      "internalType": "bytes",
      "name": "data",
      "type": "bytes"
    }
  ],
  "name": "safeTransferFrom",
  "outputs": [],
  "stateMutability": "nonpayable",
  "type": "function"
},
  "inputs": [
      "internalType": "address",
      "name": "operator",
      "type": "address"
      "internalType": "bool",
      "name": "approved",
      "type": "bool"
    }
  ],
  "name": "setApprovalForAll",
  "outputs": [],
  "stateMutability": "nonpayable",
  "type": "function"
},
  "inputs": [
      "internalType": "bytes4",
      "name": "interfaceId",
      "type": "bytes4"
    }
  "name": "supportsInterface",
  "outputs": [
      "internalType": "bool",
      "name": "",
      "type": "bool"
```

```
"stateMutability": "view",
  "type": "function"
},
 "inputs": [],
  "name": "symbol",
  "outputs": [
     "internalType": "string",
     "name": "",
     "type": "string"
   }
 ],
  "stateMutability": "view",
  "type": "function"
},
{
  "inputs": [
     "internalType": "uint256",
     "name": "index",
     "type": "uint256"
   }
  "name": "tokenByIndex",
  "outputs": [
     "internalType": "uint256",
      "name": "",
      "type": "uint256"
   }
  "stateMutability": "view",
  "type": "function"
},
{
  "inputs": [
   {
    "internalType": "address",
    "
    "name": "owner",
     "type": "address"
   },
      "internalType": "uint256",
     "name": "index",
      "type": "uint256"
   }
  "name": "tokenOfOwnerByIndex",
  "outputs": [
     "internalType": "uint256",
      "name": "",
      "type": "uint256"
   }
  "stateMutability": "view",
  "type": "function"
},
```

```
"inputs": [
     "internalType": "uint256",
      "name": "tokenId",
     "type": "uint256"
   }
  ],
  "name": "tokenURI",
  "outputs": [
     "internalType": "string",
     "name": "",
     "type": "string"
   }
  ],
  "stateMutability": "view",
  "type": "function"
},
  "inputs": [],
  "name": "totalSupply",
  "outputs": [
     "internalType": "uint256",
      "name": "",
      "type": "uint256"
   }
  "stateMutability": "view",
  "type": "function"
},
  "inputs": [
     "internalType": "address",
     "name": "from",
     "type": "address"
    },
      "internalType": "address",
      "name": "to",
      "type": "address"
      "internalType": "uint256",
     "name": "tokenId",
     "type": "uint256"
   }
  ],
  "name": "transferFrom",
  "outputs": [],
  "stateMutability": "nonpayable",
  "type": "function"
},
  "inputs": [
     "internalType": "address",
      "name": "newOwner",
      "type": "address"
   }
  ],
```

```
"name": "transferOwnership",
  "outputs": [],
  "stateMutability": "nonpayable",
  "type": "function"
}

export default Abi;
```