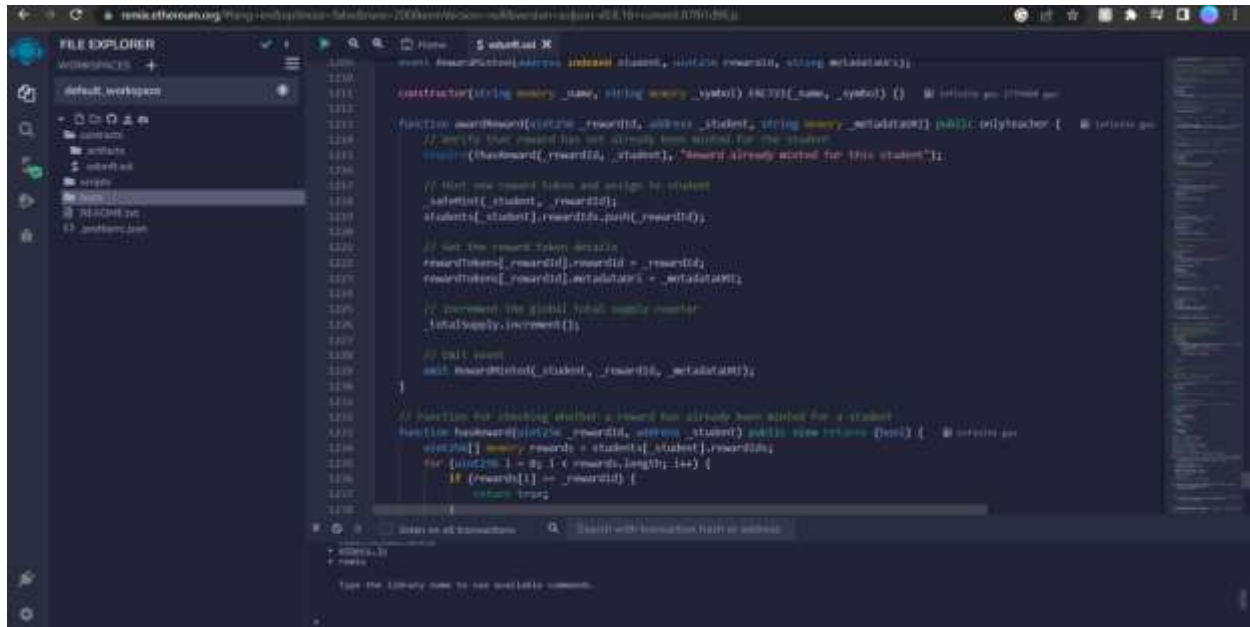
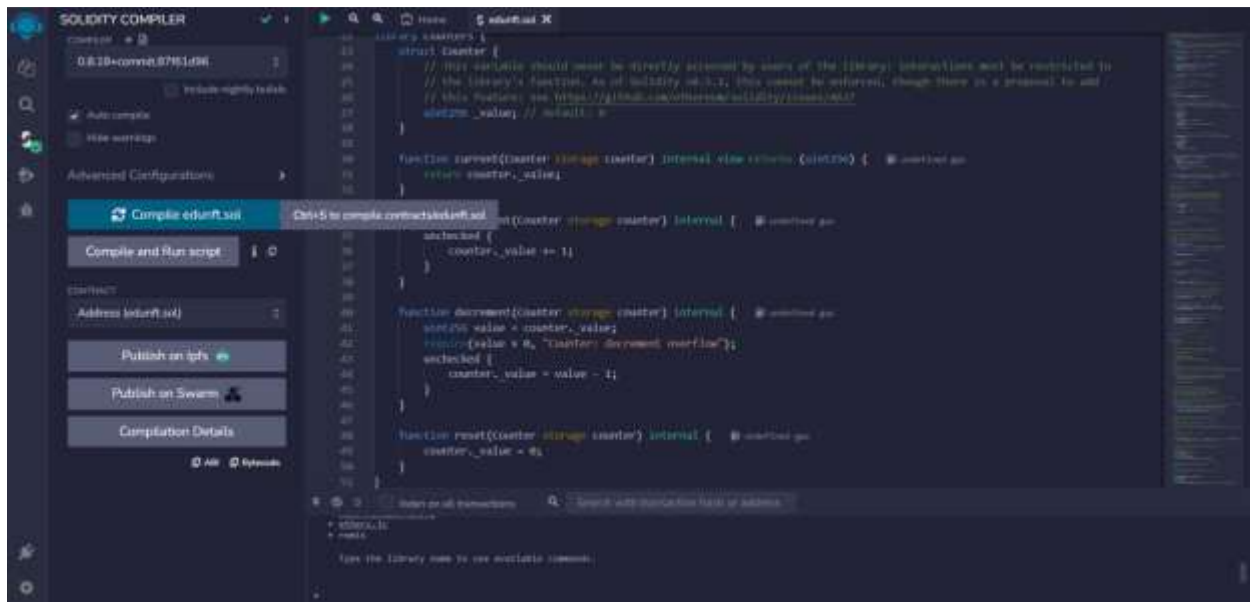


EduNFT Implementation

Remix interface



Code compilation in Remix



Deployment of smart contract via Remix

The screenshot displays the Remix IDE interface for deploying a smart contract. The left sidebar contains navigation icons. The main panel is titled "DEPLOY & RUN TRANSACTIONS" and includes the following configuration:

- ENVIRONMENT:** Injected Provider - MetaMask (Custom (137) network)
- ACCOUNT:** 0xEe3...0E12a (0.76284014)
- GAS LIMIT:** 3000000
- VALUE:** 0 Wei
- CONTRACT:** EduNFT - contracts/edunft.sol

Under the **DEPLOY** section, the contract is configured with:

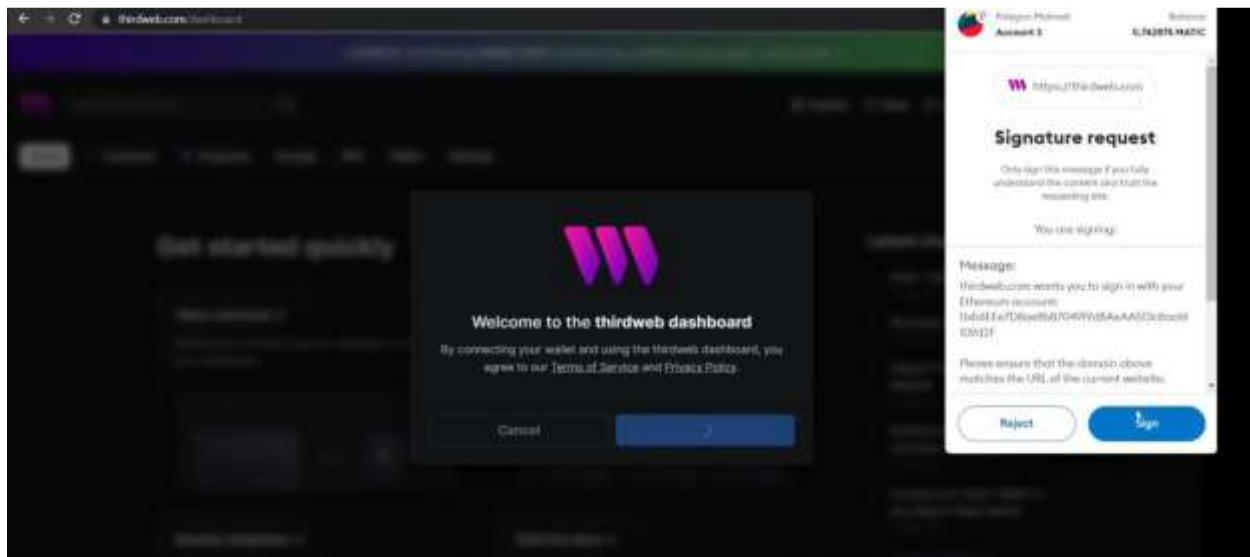
- _NAME:** EduNFT
- _SYMBOL:** \$

Buttons for "Calldata", "Parameters", and "transact" are visible. A tooltip "Deploy - transact (not payable)" is shown over the "transact" button. Below these, there is a checkbox for "Publish to IPFS" and an "OR" separator. At the bottom, the "At Address" button is highlighted, with the text "Load contract from Address" next to it.

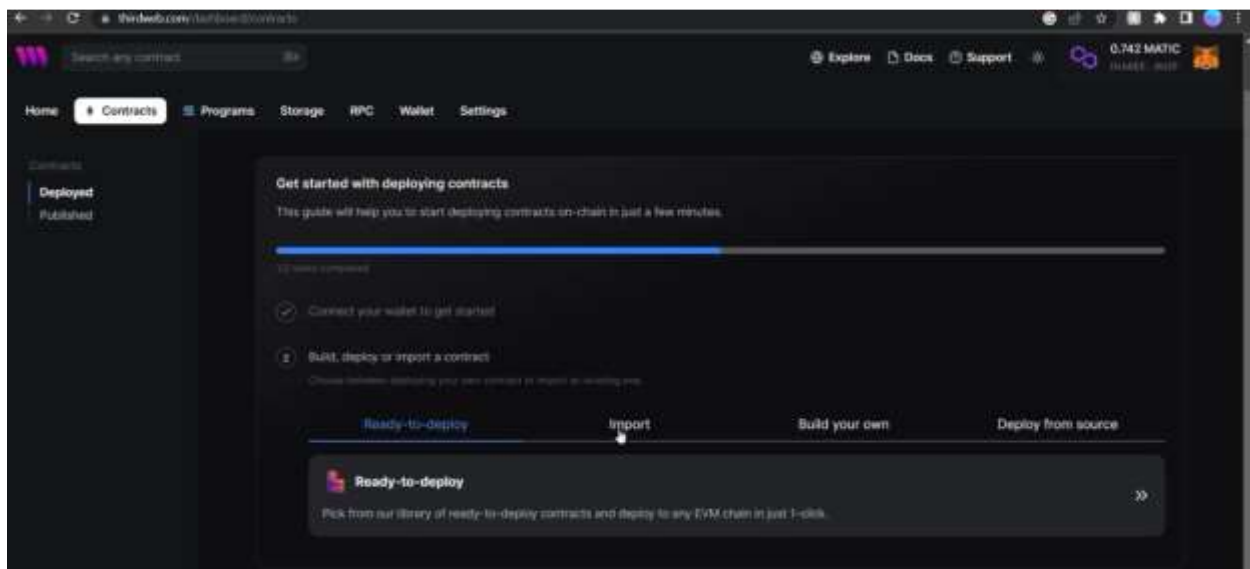
The right sidebar shows a Solidity code editor with the following code:

```
1  /**
2  | *Submitted for verification on Etherscan.io
3  | */
4
5  // SPDX-License-Identifier: MIT
6
7  // File: @openzeppelin/contracts/math/Math.sol
8
9  // OpenZeppelin Contracts (https://openzeppelin.com)
10
11  pragma solidity ^5.0.0;
12
13  /**
14  | * @title Counters
15  | * @author Matt Coates
16  | * @dev Provides a means of counting up elements in an array
17  | * of elements in memory.
18  | *
19  | * Include with the following:
20  | *
21  | * ```
22  | * library Counters {
23  | *     struct Counter {
24  | *         // This value will increment
25  | *         uint256 value;
26  | *     }
27  | * }
```

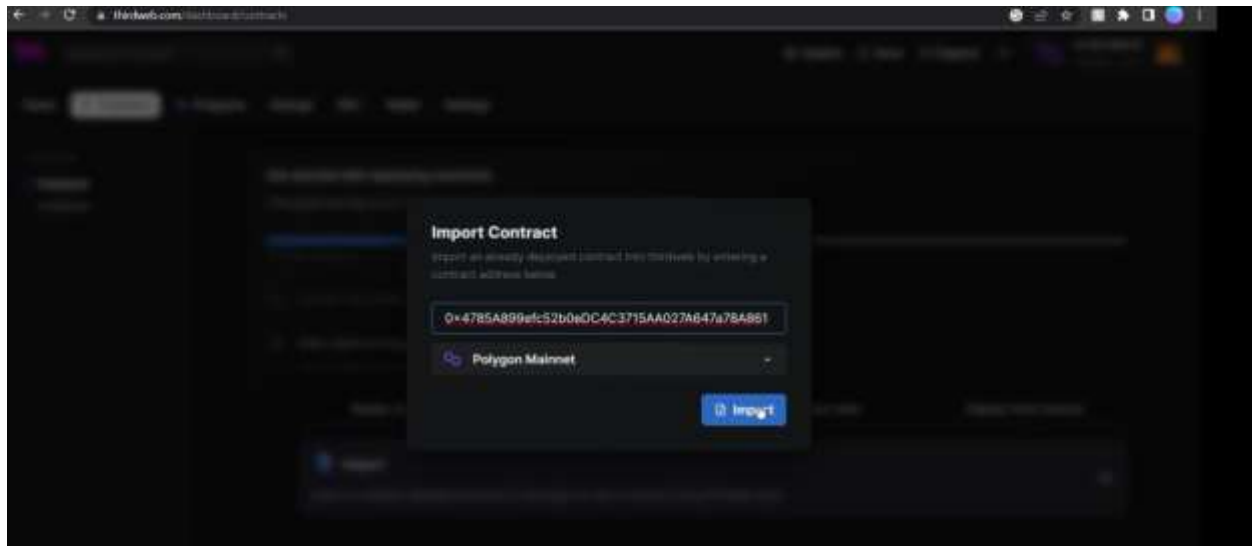
Signing request to connect wallet via MetaMask



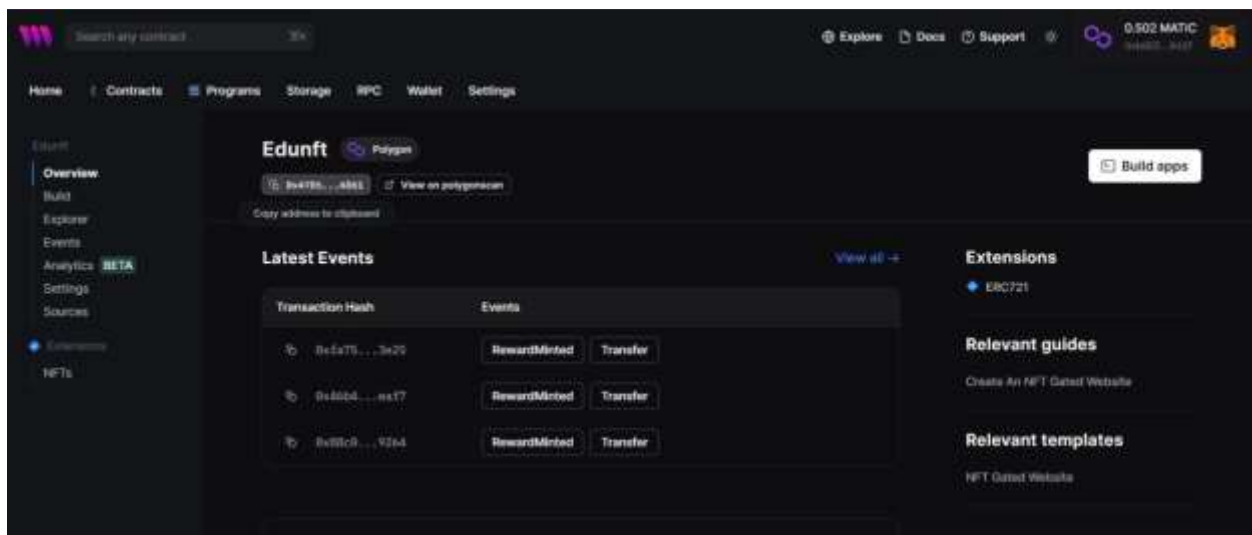
Importing the smart contract



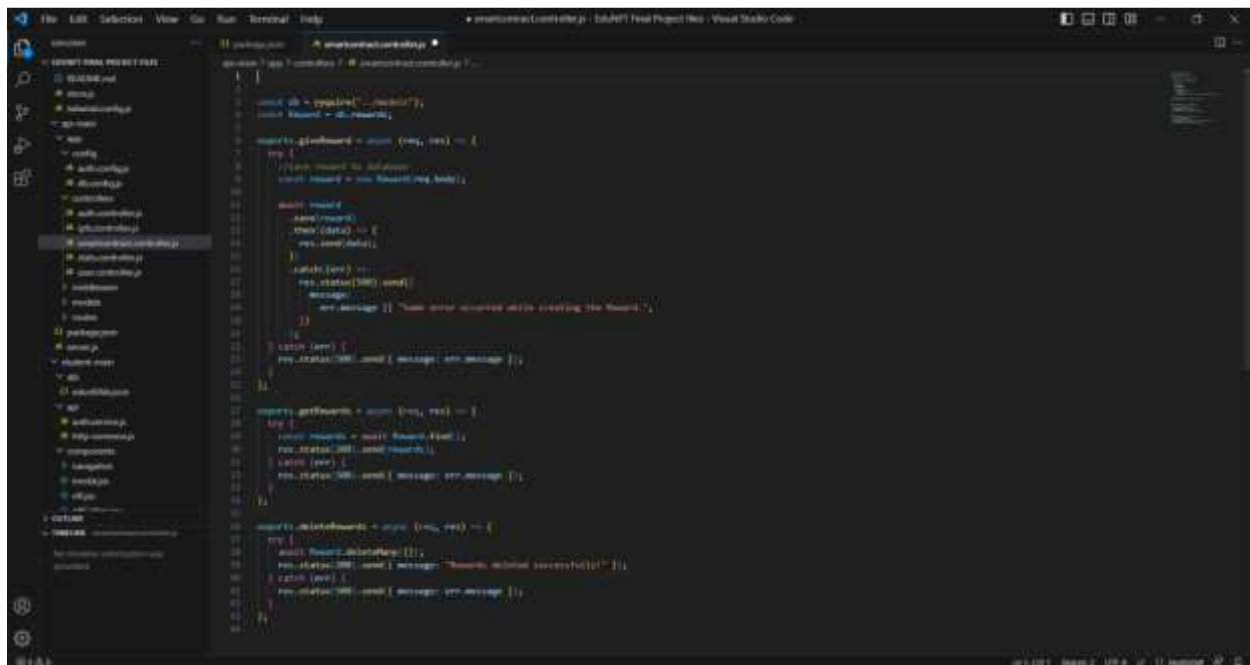
Importing the deployed smart contract



Verification of contract



Smart contract controller code



```
1 // package.json
2 // smartcontractcontroller.js
3
4 const db = require("../models");
5 const { ethers } = require("ethers");
6
7 // Create NFT
8 smartcontractcontroller.createNFT = async (req, res) => {
9   try {
10     // Create NFT
11     const { title, description, image } = req.body;
12
13     // Create NFT
14     const nft = new ethers.Contract(
15       "0x4785a899efc52b0edc4c3715aa027a647a78a861",
16       [
17         "function createNFT(
18           title: string,
19           description: string,
20           image: string
21         ) returns (uint256)"
22       ],
23       ethers.provider
24     );
25     const tx = nft.createNFT(
26       title,
27       description,
28       image
29     );
30     const receipt = await tx.wait();
31     const nftId = receipt.events[0].args[0];
32     db.NFT.create({
33       title,
34       description,
35       image,
36       nftId,
37     });
38     res.status(200).json({ message: "NFT created successfully" });
39   } catch (err) {
40     res.status(500).json({ message: err.message });
41   }
42 }
43
44 // Update NFT
45 smartcontractcontroller.updateNFT = async (req, res) => {
46   try {
47     // Update NFT
48     const { title, description, image, nftId } = req.body;
49
50     // Update NFT
51     const nft = new ethers.Contract(
52       "0x4785a899efc52b0edc4c3715aa027a647a78a861",
53       [
54         "function updateNFT(
55           title: string,
56           description: string,
57           image: string,
58           nftId: uint256
59         ) returns (uint256)"
60       ],
61       ethers.provider
62     );
63     const tx = nft.updateNFT(
64       title,
65       description,
66       image,
67       nftId
68     );
69     const receipt = await tx.wait();
70     const nftId = receipt.events[0].args[0];
71     db.NFT.update(
72       {
73         title,
74         description,
75         image,
76       },
77       {
78         where: { nftId },
79       }
80     );
81     res.status(200).json({ message: "NFT updated successfully" });
82   } catch (err) {
83     res.status(500).json({ message: err.message });
84   }
85 }
86
87 // Delete NFT
88 smartcontractcontroller.deleteNFT = async (req, res) => {
89   try {
90     // Delete NFT
91     const { nftId } = req.body;
92
93     // Delete NFT
94     const nft = new ethers.Contract(
95       "0x4785a899efc52b0edc4c3715aa027a647a78a861",
96       [
97         "function deleteNFT(
98           nftId: uint256
99         ) returns (uint256)"
100       ],
101       ethers.provider
102     );
103     const tx = nft.deleteNFT(nftId);
104     const receipt = await tx.wait();
105     const nftId = receipt.events[0].args[0];
106     db.NFT.delete({
107       where: { nftId },
108     });
109     res.status(200).json({ message: "NFT deleted successfully" });
110   } catch (err) {
111     res.status(500).json({ message: err.message });
112   }
113 }
```

NFT contract specified in the code

```
student-main > pages > api > JS getNftsForOwner.js > handler > nfts > formattedNfts.filter() callback
```

```
63   } catch (e) {
64     console.error("Error getting NFTs for owner: ", e);
65     res.status(500).json({ message: "Failed to retrieve NFTs" });
66     return;
67   }
68
69   let formattedNfts;
70   try {
71     formattedNfts = formatNFTs(nfts);
72   } catch (e) {
73     console.error("Error formatting NFTs: ", e);
74     res.status(500).json({ message: "Failed to format NFTs" });
75     return;
76   }
77
78   res.status(200).json({
79     nfts: formattedNfts.length
80       ? formattedNfts.filter(
81         (nft) => nft.contract == 0x4785a899efc52b0edc4c3715aa027a647a78a861
82       )
83       : null,
84     pageKey: nfts.pageKey,
85   });
86 }
87
```

ContractAddress is kept as the smart contract address

```
admin-main > components > JS teachermanager.js > TeacherManager > contractAddress
1  import { Web3Button, useContract, useContractWrite } from "@thirdweb-dev/react";
2  import { useToast } from "@chakra-ui/react";
3  import { useState, useEffect } from "react";
4
5  const TeacherManager = () => {
6    const toast = useToast();
7    const [address, setAddress] = useState("");
8    const contractAddress = "0x4785A899efc52b0eDC4C3715AA027A647a78A861";
9    const { contract, error } = useContract(contractAddress);
10
11    const submitToast = () => {
12      toast({
13        title: "Success!",
14        description: "Your transaction has been submitted.",
15        status: "info",
16        duration: 9000,
17        isClosable: true,
18      });
19    };
20
```

Contract address set in the Admin-main

```
admin-main > pages > JS addreward.js > [x] AddReward > [x] contractAddress
 2  import { useDispatch, useSelector } from "react-redux";
 3  import Layout from "@components/layout";
 4  import { upload } from "@slices/cloudinary";
 5  import { uploadMetadata } from "@slices/storage";
 6  import { giveReward } from "@slices/reward";
 7  import { getStudents } from "@slices/auth";
 8  import { Spinner, Badge, useToast } from "@chakra-ui/react";
 9  import { Web3Button, useAddress, useContract } from "@thirdweb-dev/react";
10  import withAuth from "@hoc/withAuth";
11
12  const AddReward = () => {
13    const dispatch = useDispatch();
14    const toast = useToast();
15    const { students } = useSelector((state) => state.auth);
16    const { isLoading, url } = useSelector((state) => state.cloudinary);
17
18    const { storage, isLoadingStorage } = useSelector((state) => state.storage);
19
20    const [search, setSearch] = useState("");
21    const [supply, setSupply] = useState(0);
22    const [selectedStudent, setSelectedStudent] = useState({});
23    const address = useAddress();
24    const contractAddress = "0x4785A899efc52b0eDC4C3715AA027A647a78A861";
25    const { contract } = useContract(contractAddress);
26
27    const [reward, setReward] = useState({
28      name: "",
29      description: "",
30      image: url,
31      student: selectedStudent,
32      teacher: { name: "Mr. John Doe", walletAddress: address },
33      rewardId: 0,
34      metadataURI: storage?.hash,
35      transactionHash: "",
```

React Version 18.2.0 utilized in code

```
1 j podings@k ~
2 student-run > () package.json > () dependencies > react
3 {
4   "name": "student-run-portal",
5   "version": "0.1.0",
6   "private": true,
7   "scripts": {
8     "dev": "next dev",
9     "build": "next build",
10    "start": "next start",
11    "lint": "next lint",
12    "marketplace": "npm create-wsl-dapp marketplace"
13  },
14  "dependencies": {
15    "chakra-ui/react": "^2.5.0",
16    "emotion/react": "^11.10.4",
17    "emotion/styled": "^11.10.5",
18    "framer-motion": "^9.2.11",
19    "glamor/react": "^2.8.12",
20    "graphql-middleware": "^0.12.4",
21    "graphql-tools": "^8.0.1",
22    "graphql-shield": "^8.0.2",
23    "graphql-shield-sql": "^3.1.2",
24    "redux-saga": "^10.0.0",
25    "react": "18.2.0",
26    "react-dom": "18.2.0",
27    "react-icons": "4.10.1",
28    "react-redux": "8.0.5",
29    "react-toastify": "9.1.2",
30    "react-toastify": "9.1.2",
31    "saga": "10.0.0"
32  },
33  "devDependencies": {
34    "autoprefixer": "10.4.14",
35    "eslint": "8.36.0",
36    "eslint-config-next": "13.2.4",
37    "postcss": "8.4.21",
38    "tailwindcss": "3.3.1"
39  },
40  "engines": {
41    "node": "18.0.0"
42  }
43 }
```


The 'react' and 'react-dom' package utilization

```

() package-lock.json X
admin-main > () package-lock.json > {} dependencies > {} react-redux
21728 "resolved": "https://registry.npmjs.org/react/-/react-18.2.0.tgz",
21729 "integrity": "sha512-/3IjMdBZL9QbBDWlWSe3P2/npmBAU79HKSOUzLn0ZYbcfT5GbTJrU/kGsmRt1WnB2ioZ+zkctaq6g89fgQ==",
21730 "requires": {
21731   "loose-envify": "^1.1.0"
21732 },
21733 "react-client-side-effect": {
21734   "version": "1.2.6",
21735   "resolved": "https://registry.npmjs.org/react-client-side-effect/-/react-client-side-effect-1.2.6.tgz",
21736   "integrity": "sha512-XGGGRQAky+q2SLz9a/4EPqom7NRjs3z9R2k4jhVKA/puQFII/Sht27VFZYq14m4NwidUvX8PS307r/Zzo7cjdIg==",
21737   "requires": {
21738     "@babel/runtime": "^7.12.13"
21739 }
21740 },
21741 "react-cropper": {
21742   "version": "2.3.2",
21743   "resolved": "https://registry.npmjs.org/react-cropper/-/react-cropper-2.3.2.tgz",
21744   "integrity": "sha512-lug25ZCBd8/49KKEnv4HziyZ1ly790JEIVvjHptIFoIn5/SAatOd8QPmPRN6f/fPFwML3huTdZVS6C6wz6Q5g==",
21745   "requires": {
21746     "cropper.js": "^1.5.13"
21747 }
21748 },
21749 "react-dom": {
21750   "version": "18.2.0",
21751   "resolved": "https://registry.npmjs.org/react-dom/-/react-dom-18.2.0.tgz",
21752   "integrity": "sha512-C2AYOShGdK1pZSxVh82AAS8kst//boYDxcMccMhCPuzVpVNGbtYTDiUpkGjD6eNu+TMtZH6542KGu43xw==",
21753   "requires": {
21754     "loose-envify": "^1.1.0",
21755     "scheduler": "^0.23.0"
21756 }
21757 },
21758 "react-drag-drop-files": {
21759   "version": "2.3.9",
21760   "resolved": "https://registry.npmjs.org/react-drag-drop-files/-/react-drag-drop-files-2.3.9.tgz",
21761   "integrity": "sha512-4061sC2sDJC+kAL8tQql01inYlhovnyZECPWAg9COT=9814XgSGnIpqDZsv285kznGByMK6u2AjWlrZHGiz==",
21762   "requires": {
21763     "prop-types": "^15.7.2",
21764     "styled-components": "^5.3.0"
21765 }
21766 },
21767 "react-fast-compare": {
21768   "version": "3.2.1",
21769   "resolved": "https://registry.npmjs.org/react-fast-compare/-/react-fast-compare-3.2.1.tgz",
21770   "integrity": "sha512-xTY92pEfiin2peEf/Fw16dB1Xpe0boySPxzDB+QuInTNLFIn3glEdhKNurY+6OedHlu6Ta/W/V16vjbyPMFnDg==",
21771 }
21772 },

```

React-related packages

```

admin-mae > | package-lock.json > | react-cropper > | } requires
217767 version: "2.3.2",
217768 "resolved": "https://registry.npmjs.org/react-focus-lock/-/react-focus-lock-2.9.4.tgz",
217769 "integrity": "sha512-7pEdXyMsegs3kVJhVh18sovpAr1Lg5hGlv1x7/Ck3ekJhrrfMEgH5a3swCBugfdd7DIdVNIgeiHT9/7Sgg==",
217770 "requires": {
217771   "@babel/runtime": "^7.0.0",
217772   "focus-lock": "^0.11.6",
217773   "prop-types": "^15.6.2",
217774   "react-client-side-effect": "^1.2.6",
217775   "use-callback-ref": "^1.3.0",
217776   "use-sidecar": "^1.1.2"
217777 },
217778 },
217779 "react-icons": {
217780   "version": "4.8.0",
217781   "resolved": "https://registry.npmjs.org/react-icons/-/react-icons-4.8.0.tgz",
217782   "integrity": "sha512-N6YJKoV3q3831ZJ38i2kXpY+0zWVp4Ll7UGlLJkZlIdDz8K0K57gahF0HwVWwzmRTzR3g==",
217783   "requires": {}
217784 },
217785 "react-is": {
217786   "version": "18.2.0",
217787   "resolved": "https://registry.npmjs.org/react-is/-/react-is-18.2.0.tgz",
217788   "integrity": "sha512-xMGDIW6y9q/9c9xg/B6W4wWwZg2UjAGv6EsMK+QO3M3x/LL4HMIbz3cI7tWYQ1WgkP7g==",
217789 },
217790 "react-cropper": {
217791   "version": "2.3.2",
217792   "resolved": "https://registry.npmjs.org/react-cropper/-/react-cropper-2.3.2.tgz",
217793   "integrity": "sha512-lug25ZC8d8/49KkEnv4HZ1y2L1y/90JITVJ/Rut1FoIn5/5AatGd8Q6PRR6F/FPTwM3hwTdZV9GsCmZ6Q5g==",
217794   "requires": {}
217795   "cropperjs": "^1.5.13"
217796 },
217797 },
217798 },
217799 "react-redux": {
21800   "version": "8.0.5",
21801   "resolved": "https://registry.npmjs.org/react-redux/-/react-redux-8.0.5.tgz",
21802   "integrity": "sha512-Q2f6fCKxPpKXt1qNRZdEDL35csDMYrg5Jlml1K59qbm6gyB1Kk0pECG211zhdrCctfRhb6fcpPL2ed0luw==",
21803   "requires": {
21804     "@babel/runtime": "^7.12.1",
21805     "@types/hoist-non-react-statics": "^3.3.1",
21806     "@types/use-sync-external-store": "^0.0.3",
21807     "hoist-non-react-statics": "^3.3.2",
21808     "react-is": "^18.0.0",
21809     "use-sync-external-store": "^1.0.0"
21810 },
21811 },
21812 "react-remove-scroll": {

```

Radix-UI and React implementation

```

0 package-lock.json X
admin-main > {} package-lock.json > {} dependencies > {} @radix-ui/react-popover
16892 },
16893 "@radix-ui/react-menu": {
16894   "version": "2.0.4",
16895   "resolved": "https://registry.npmjs.org/@radix-ui/react-menu/-/react-menu-2.0.4.tgz",
16896   "integrity": "sha512-moKR4ZzI1t193trEgIQo7vY4Q9vYFVH16ryBrW/CAG2+kywM/QYEZdUAM7y8ak9erKKtJ3lqB47T73EnubeOfQ==",
16897   "requires": {
16898     "@babel/runtime": "^7.13.10",
16899     "@radix-ui/primitive": "1.0.0",
16900     "@radix-ui/react-collection": "1.0.2",
16901     "@radix-ui/react-compose-refs": "1.0.0",
16902     "@radix-ui/react-context": "1.0.0",
16903     "@radix-ui/react-direction": "1.0.0",
16904     "@radix-ui/react-dismissable-layer": "1.0.3",
16905     "@radix-ui/react-focus-guards": "1.0.0",
16906     "@radix-ui/react-focus-scope": "1.0.2",
16907     "@radix-ui/react-id": "1.0.0",
16908     "@radix-ui/react-popper": "1.1.1",
16909     "@radix-ui/react-portal": "1.0.2",
16910     "@radix-ui/react-presence": "1.0.0",
16911     "@radix-ui/react-primitive": "1.0.2",
16912     "@radix-ui/react-roving-focus": "1.0.3",
16913     "@radix-ui/react-slot": "1.0.1",
16914     "@radix-ui/react-use-callback-ref": "1.0.0",
16915     "aria-hidden": "1.1.1",
16916     "react-remove-scroll": "2.5.5"
16917   }
16918 },
16919 "@radix-ui/react-popover": {
16920   "version": "1.0.5",
16921   "resolved": "https://registry.npmjs.org/@radix-ui/react-popover/-/react-popover-1.0.5.tgz",
16922   "integrity": "sha512-GH228YD12R4N2Lut4PEBR65uHTxd9x372DE9PPm8jpczAQkicZSneKXG4apf+RDkXSzdlv9ywoeYACDTalUZg--",
16923   "requires": {
16924     "@babel/runtime": "^7.13.10",
16925     "@radix-ui/primitive": "1.0.0",
16926     "@radix-ui/react-compose-refs": "1.0.0",
16927     "@radix-ui/react-context": "1.0.0",
16928     "@radix-ui/react-dismissable-layer": "1.0.3",
16929     "@radix-ui/react-focus-guards": "1.0.0",
16930     "@radix-ui/react-focus-scope": "1.0.2",
16931     "@radix-ui/react-id": "1.0.0",
16932     "@radix-ui/react-popper": "1.1.1",
16933     "@radix-ui/react-portal": "1.0.2",
16934     "@radix-ui/react-presence": "1.0.0",
16935     "@radix-ui/react-primitive": "1.0.2",
16936     "@radix-ui/react-slot": "1.0.1",
16937     "@radix-ui/react-use-callback-ref": "1.0.0"

```

Chakra UI library modules in the react application part of the code

```
package-lock.json X
admin-main > {} package-lock.json > {} packages
1153   "react-dom": ">=18"
1154 },
1155 },
1156 "node_modules/@chakra-ui/react-children-utils": {
1157   "version": "2.0.6",
1158   "resolved": "https://registry.npmjs.org/@chakra-ui/react-children-utils/-/react-children-utils-2.0.6.tgz",
1159   "integrity": "sha512-QVR2RC7Qs0sBmEnq9YduhpqSFmZGvjJGREV8ygK1840hXh93C8azLECCUygR3F2Wc+SolfgxmJLcbZFYZVnBA==",
1160   "peerDependencies": {
1161     "react": ">=18"
1162   }
1163 },
1164 "node_modules/@chakra-ui/react-context": {
1165   "version": "2.0.8",
1166   "resolved": "https://registry.npmjs.org/@chakra-ui/react-context/-/react-context-2.0.8.tgz",
1167   "integrity": "sha512-tHtkdn6ICTXWAPjSokAAKCu21o1h7Eg8ChgaYRSwKbckBnkz9YqvgITEj3d3D7NGtp1245/SN1981Machuk/A==",
1168   "peerDependencies": {
1169     "react": ">=18"
1170   }
1171 },
1172 "node_modules/@chakra-ui/react-env": {
1173   "version": "3.0.0",
1174   "resolved": "https://registry.npmjs.org/@chakra-ui/react-env/-/react-env-3.0.0.tgz",
1175   "integrity": "sha512-tHRO2v508HQ4qSADFwZgR9oU10qC97oV6zGbjH9ALP0/IcFR+Bi71KRTveDTm85fMeAzZYGj57P30xiokw==",
1176   "dependencies": {
1177     "@chakra-ui/react-use-safe-layout-effect": "2.0.5"
1178   },
1179   "peerDependencies": {
1180     "react": ">=18"
1181   }
1182 },
1183 "node_modules/@chakra-ui/react-types": {
1184   "version": "2.0.7",
1185   "resolved": "https://registry.npmjs.org/@chakra-ui/react-types/-/react-types-2.0.7.tgz",
1186   "integrity": "sha512-12zv2q1Z8R7hlytggtGvo4ILLT8APr1s7T8qaMqzplAG58cdUTR8w-V1B350zq+7ta6dzQ/7+uShwK1h61T88Q==",
1187   "peerDependencies": {
1188     "react": ">=18"
1189   }
1190 },
1191 "node_modules/@chakra-ui/react-use-animation-state": {
1192   "version": "2.0.8",
1193   "resolved": "https://registry.npmjs.org/@chakra-ui/react-use-animation-state/-/react-use-animation-state-2.0.8.tgz",
1194   "integrity": "sha512-xv9z5F2Hd1m11KQre5U8Bwh4atf8qrWvsOs3fWrvvXYS3f79H3pqcGrwAEvirXoXf1Ceju2VakEgggRIZoQ==",
1195   "dependencies": {
1196     "@chakra-ui/dom-utils": "2.0.6",
1197     "@chakra-ui/react-use-event-listener": "2.0.7"
1198   }
1199 }
```

'node_modules' usage within the code

```

❯ package-lock.json ×
admin-main > ❯ package-lock.json > {} packages > {} node_modules/@json-rpc-tools/provider
2760 },
2761 {
2762   "node_modules/@ledgerhq/connect-kit-loader": {
2763     "version": "1.0.2",
2764     "resolved": "https://registry.npmjs.org/@ledgerhq/connect-kit-loader/-/connect-kit-loader-1.0.2.tgz",
2765     "integrity": "sha512-TQ21IjcZOm/scqypvFY3jHwqITX7Ha3qN/usEFvTol3A9Y6UwhhhRGawBE9ahmAbdX241dduXE1HBISQZFrg==",
2766   },
2767   "node_modules/@lit-labs/ssr-dom-shim": {
2768     "version": "1.1.0",
2769     "resolved": "https://registry.npmjs.org/@lit-labs/ssr-dom-shim/-/ssr-dom-shim-1.1.0.tgz",
2770     "integrity": "sha512-92uQAIfcUXRzafCAxOT7rTvaS9Zl//ukV+DqjACM4Bs0ZBQd7ayJUSDH2AFLD/Ayuyz4uHmxQec8lQu4Ong==",
2771   },
2772   "node_modules/@lit/reactive-element": {
2773     "version": "1.6.1",
2774     "resolved": "https://registry.npmjs.org/@lit/reactive-element/-/reactive-element-1.6.1.tgz",
2775     "integrity": "sha512-val5KYzF7KZNP2dxONGzplur4sxWu7V/VG7a8eRFPXuhyEYj5RzXCQmGrIP3tAh8L3Hm54jBMFYRgIM9SA==",
2776     "dependencies": {
2777       "@lit-labs/ssr-dom-shim": "^1.0.0"
2778     }
2779   },
2780   "node_modules/@metanask/safe-event-emitter": {
2781     "version": "2.0.0",
2782     "resolved": "https://registry.npmjs.org/@metanask/safe-event-emitter/-/safe-event-emitter-2.0.0.tgz",
2783     "integrity": "sha512-kSXHY692q1V1NkxutEOZvg5nECL1aNXcXC73cXQGvullymHjdxc/T7XFsk+3LjwAie1cl/5BrIQypusC29Q==",
2784   },
2785   "node_modules/@motionone/animation": {
2786     "version": "10.15.1",
2787     "resolved": "https://registry.npmjs.org/@motionone/animation/-/animation-10.15.1.tgz",
2788     "integrity": "sha512-mEc7P1w3tD0mCkOy+U0V9GIwlKPo17OAWPpFjkpYZ/x/qwGfLWVYkxwXgXoWbQFk4Yq4YUg4PrCyQ==",
2789     "dependencies": {
2790       "@motionone/easing": "^10.15.1",
2791       "@motionone/types": "^10.15.1",
2792       "@motionone/utils": "^10.15.1",
2793       "tslib": "^2.3.1"
2794     }
2795   },
2796   "node_modules/@motionone/animation/node_modules/tslib": {
2797     "version": "2.5.0",
2798     "resolved": "https://registry.npmjs.org/tslib/-/tslib-2.5.0.tgz",
2799     "integrity": "sha512-1abg3jn7q7R+IW/Bp54n4IYuqqLcgVS14NsY7Pq72gEgOYJGUyUMFtboLvAvDfFl46v5P8wuVbVv5A==",
2800   },
2801   "node_modules/@motionone/dom": {
2802     "version": "10.15.5",
2803     "resolved": "https://registry.npmjs.org/@motionone/dom/-/dom-10.15.5.tgz",
2804     "integrity": "sha512-Xc5av1gy3xukU9tydh9+a6B+2z8q+MLsC3eIp7Ax7DnxgY7bj/1vba4XR9z9ZFZ1aXK3BO0xyVHrbAAde=",
2805     "dependencies": {

```


Set up of an Express.js server

```
api-main > JS server.js > ...
1  const express = require("express");
2  const cors = require("cors");
3  // Import dotenv at the beginning of the file
4  require("dotenv").config();
5
6  const app = express();
7
8  let corsOptions = {
9    origin: "*",
10 };
11
12 app.use(cors(corsOptions));
13
14 // parse requests of content-type - application/json
15 app.use(express.json());
16
17 // parse requests of content-type - application/x-www-form-urlencoded
18 app.use(express.urlencoded({ extended: true }));
19
20 const db = require("./app/models");
21 db.mongoose
22   .connect(db.url, {
23     useNewUrlParser: true,
24     useUnifiedTopology: true,
25     dbName: "edunft",
26   })
27   .then(() => {
28     console.log("Connected to the database!");
29   })
30   .catch((err) => {
31     console.log("Cannot connect to the database!", err);
32     process.exit();
33   });
34
35 // simple route
36 app.get("/", (req, res) => {
37   res.json({ message: "Welcome to Edunft application." });
38 });
39
40 require("./app/routes/user.routes")(app);
41 require("./app/routes/auth.routes")(app);
42 require("./app/routes/smartcontract.routes")(app);
43 require("./app/routes/ipfs.routes")(app);
44 require("./app/routes/stats.routes")(app);
45
46 // set port, listen for requests
```

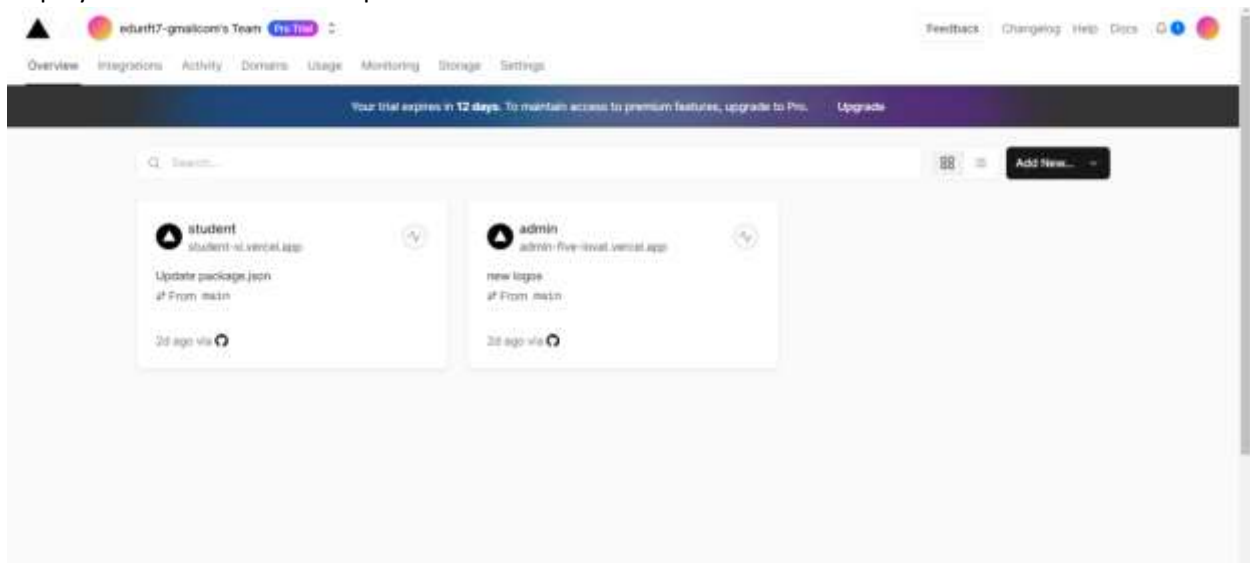
Database configuration

```
db.config.js X
api-main > app > config > db.config.js > ...
1  const isProduction = process.env.NODE_ENV === "production";
2
3  module.exports = {
4    uri: isProduction
5      ? "mongodb+srv://edunft7:22u9CmTcsJlunNk0@cluster0.pnqziyw.mongodb.net/?retryWrites=true&w=majority"
6      : "mongodb://localhost:27017/thirdweb",
7  };
8
```

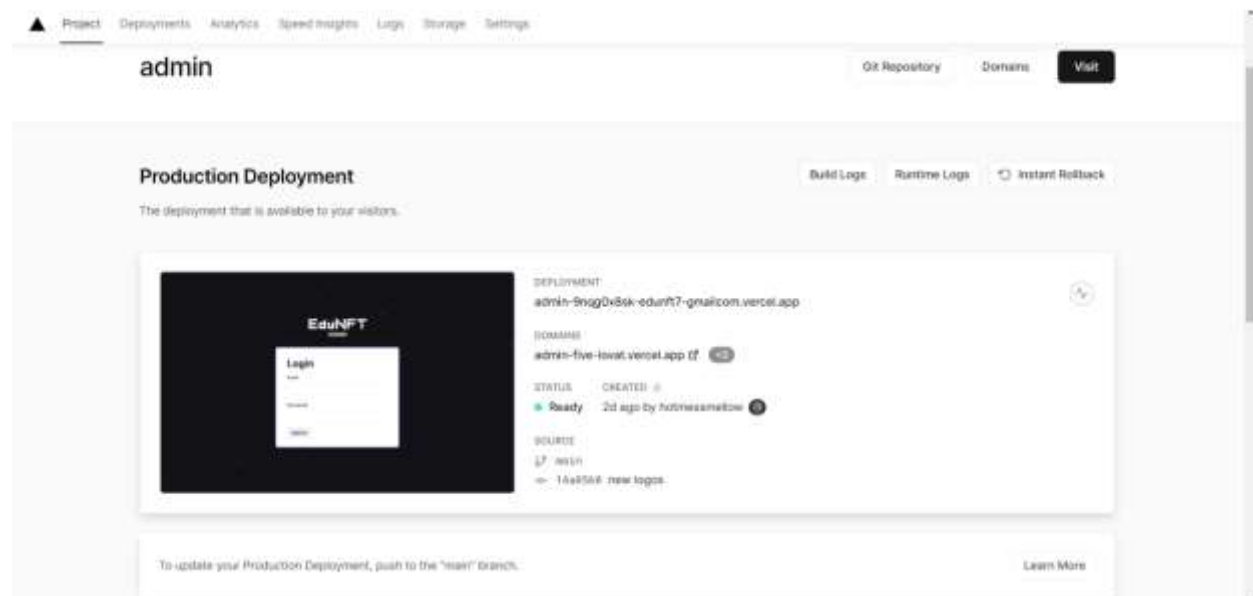
Mongoose configuration

```
index.js X
api-main > app > models > index.js > ...
1  const dbConfig = require("../config/db.config.js");
2
3  const mongoose = require("mongoose");
4  mongoose.Promise = global.Promise;
5
6  const db = {};
7  db.mongoose = mongoose;
8  db.url = dbConfig.uri;
9  db.users = require("./user.model.js")(mongoose);
10 db.rewards = require("./reward.model.js")(mongoose);
11
12 module.exports = db;
13
```

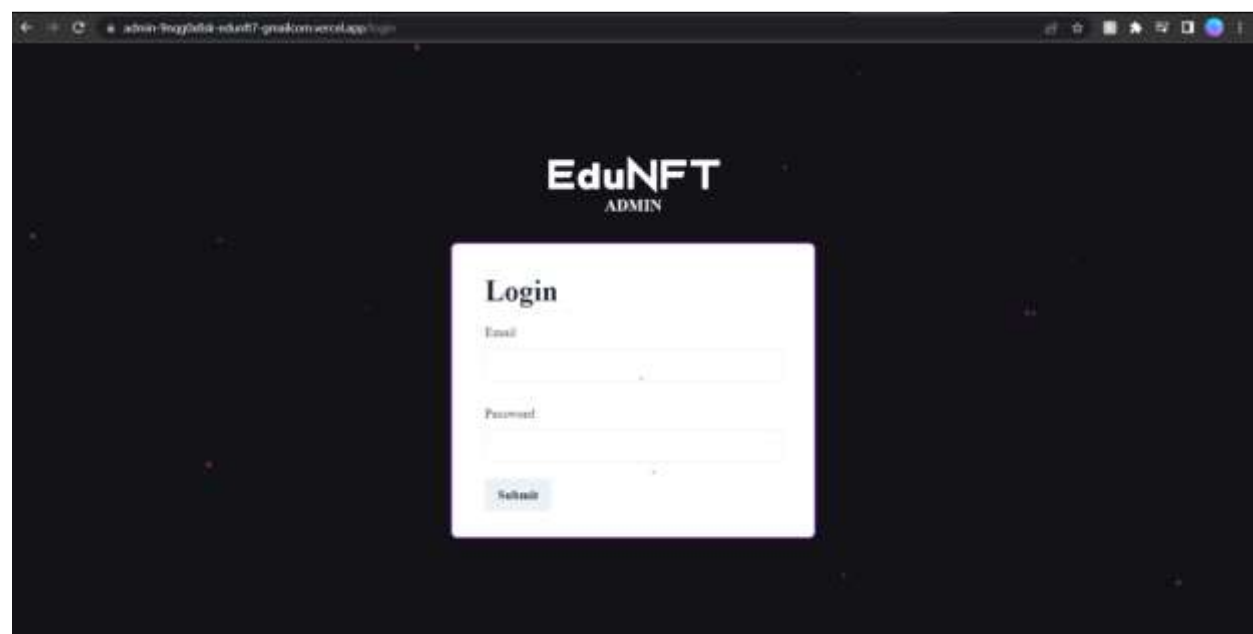
Deployed Student and Admin portals on Vercel



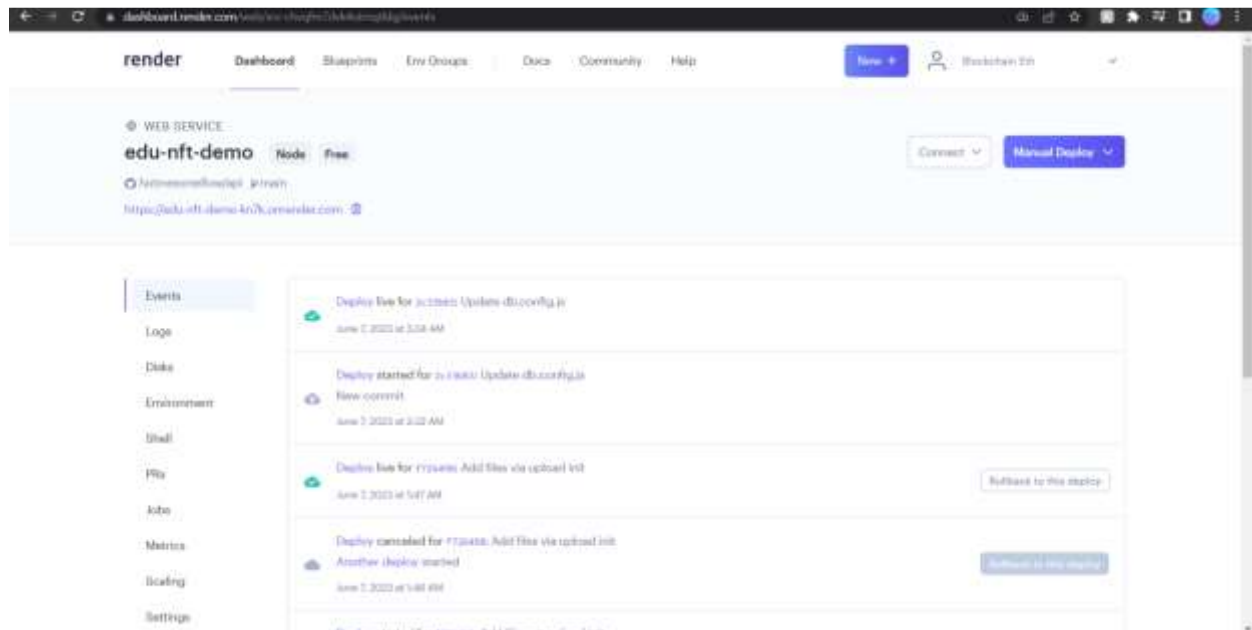
Generated URL of the platform



Access to the Admin Portal via Vercel



Render.com's Dashboard



Student portal hosted on render

