

# CMPE 483 ASSIGNMENT 2 REPORT

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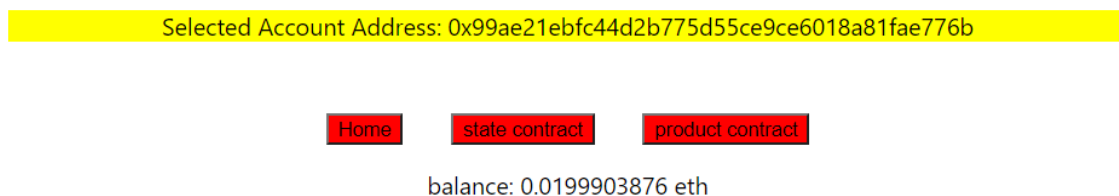
Berkant Koç 2020400342

Our Web App Link: <https://cmpe483-project.vercel.app/>

## Implementation of the web interface

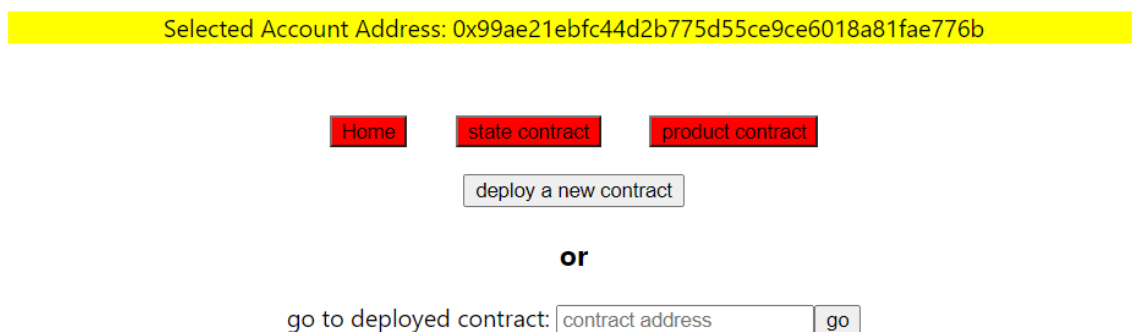
The project is implemented with Next.js, React.js, and Web3. The repository is hosted on GitHub. It is connected to Vercel for CI/CD.

## Homepage



In this page, the user sees his/her account address, the current account balance and navigation buttons to go to state contract and product contract operations.

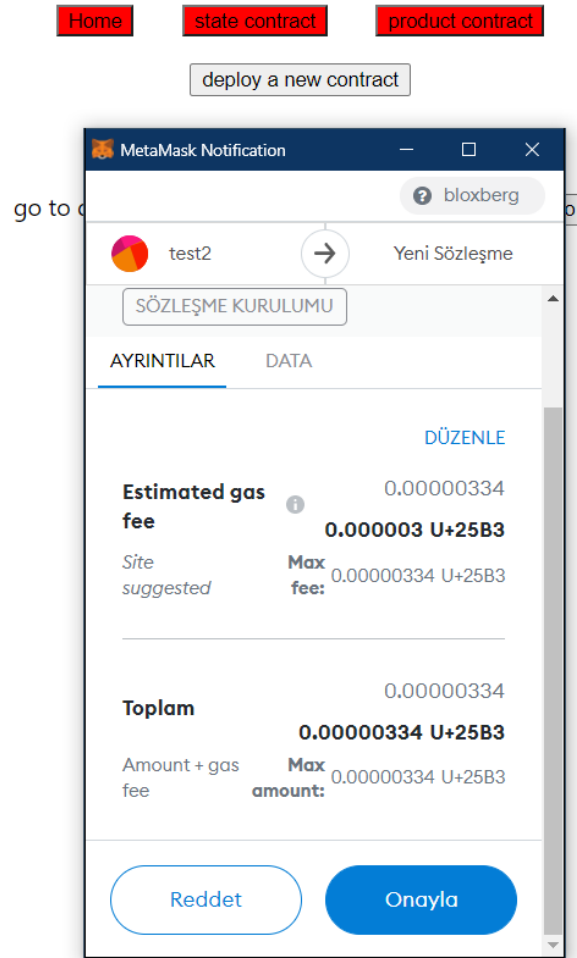
## State Contract Page



In this page, the user can deploy a state contract and go to an already deployed contract.

## State Contract Page - when deploy button is clicked

Selected Account Address: 0x99ae21ebfc44d2b775d55ce9ce6018a81fae776b



When the user clicks the “deploy” button, the state contract is deployed but first metamask requests payment for this deployment operation. In this screenshot, the requested amount of gas fee can be seen.

## State contract page- after contract deployment

Selected Account Address: 0x99ae21ebfc44d2b775d55ce9ce6018a81fae776b

Home

state contract

product contract

Deployed Address: 0xE81c9527DD3E6f13e0cD45CaB367B2508a713D17

deploy a new contract

or

go to deployed contract:  go

When the user approves metamask request for deployment, this page shows the address of the deployed state contract in red color.

## State contract page- go to a deployed contract

Selected Account Address: 0x99ae21ebfc44d2b775d55ce9ce6018a81fae776b

Home

state contract

product contract

deploy a new contract

or

go to deployed contract:  go

When the user wants to go to the state contract, the user copies the address of the state contract and pastes it to the allocated place and clicks “go” button.

## State Contract Page - deployed contact's main page

Selected Account Address: 0x99ae21ebfc44d2b775d55ce9ce6018a81fae776b

Home

state contract

product contract

## State Contract

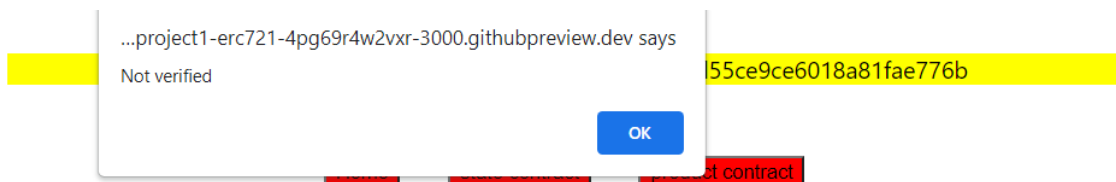
Deployed Address:0xE81c9527DD3E6f13e0cD45CaB367B2508a713D17

Contract Owner:0x99aE21eBfC44d2b775D55cE9Ce6018A81FaE776b

<input type="text" value="address"/>	<input type="button" value="query"/>
<input type="text" value="address"/>	<input type="button" value="verify"/>

This page shows up when the user deploys the state contract successfully. The address of the contract is stated in the “Deployed Address” part and the address of the owner of the contract is stated in the “Contract Owner” part. There are two operations that a user can do on this page. The user can query an address whether the address is approved or not or verify an address.

### State contract page- address is verified



## State Contract

Deployed Address:0xE81c9527DD3E6f13e0cD45CaB367B2508a713D17

Contract Owner:0x99aE21eBfC44d2b775D55cE9Ce6018A81FaE776b

<input type="text" value="0x99ae21ebfc44d2b775d55ce9ce6018a81fae776b"/>	<input type="button" value="query"/>
<input type="text" value="address"/>	<input type="button" value="verify"/>

When the user tries to query an address which is not verified yet, an alert showing “Not verified” occurs.

## State contract page- verify is clicked

Selected Account Address: 0x99ae21ebfc44d2b775d55ce9ce6018a81fae776b

Homestate contractproduct contract

# State Contract

Deployed Address:0xE81c9527DD3E6f13e0cD45CaB3  
Contract Owner:0x99aE21eBfC44d2b775D55cE9Ce6

address

query

0x99ae21ebfc44d2b775d55ce9ce6018a81fae776b

verify

MetaMask Notification

bloxberg

test2

→

0xE81...3D17

New address detected! Click here to add to your address book.

VERIFY

AYRINTILARDATAHEX

DÜZENLE

Estimated gas fee

0.00000007

0 U+25B3

Site suggested

Max fee:

0.00000007 U+25B3

Toplam

0.00000007

0.00000007 U+25B3

Amount + gas fee

Max amount:

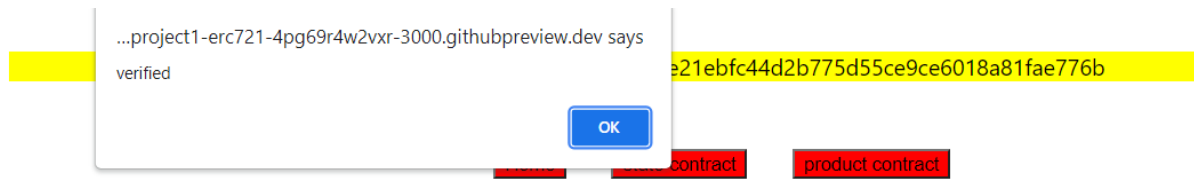
0.00000007 U+25B3

Reddet

Onayla

When the user wants to verify an address, the user pastes an address to the allocated place and clicks the “verify” button. Then, a metamask request comes.

## State contract page- after verify operation



## State Contract

Deployed Address:0xE81c9527DD3E6f13e0cD45CaB367B2508a713D17  
Contract Owner:0x99ae21eBfC44d2b775D55cE9Ce6018A81FaE776b

address	query
0x99ae21ebfc44d2b775d55ce9ce6018a81fae776b	verify

When the user verifies an address that has not been verified before, then a pop up that says “verified” shows up and the address is verified.

## Product contract page

Selected Account Address: 0x99ae21ebfc44d2b775d55ce9ce6018a81fae776b



State address:

**or**

Go to deployed contract:

In this page, the user can deploy a product contract or go to a previously deployed product contract by typing its address. In order to deploy a product contract, the user must provide the address of a previously deployed state contract.

## Product Contract Page - entering state contract address

Selected Account Address: 0x99ae21ebfc44d2b775d55ce9ce6018a81fae776b

Home

state contract

product contract

state add:

deploy a new contract

MetaMask Notification

bloxberg

go to

go

test2

→

Yeni Sözleşme

SÖZLEŞME KURULUMU

AYRINTILAR

DATA

DÜZENLE

Estimated gas fee

0.00000544

0.000005 U+25B3

Site suggested

Max fee: 0.00000544 U+25B3

Toplam

0.00000544

0.00000544 U+25B3

Amount + gas fee

Max amount: 0.00000544 U+25B3

Reddet

Onayla

When the user wants to deploy a product contract, the user first enters the state address and clicks the “deploy a new contract” button. Then, the corresponding metamask request occurs.

## Product contract page- contract deployed

Selected Account Address: 0x99ae21ebfc44d2b775d55ce9ce6018a81fae776b

Home

state contract

product contract

state add: 0xE81c9527DD3E6f13e0cE

Deployed Address: 0x15262e52334620b6Af8C39e6018B429D70650b0f

deploy a new contract

or

go to deployed contract:

When the user approves the metamask request, the address of the deployed contract occurs in the same page with red color.



## Product contract page- deployed contract information and operations

Selected Account Address: 0x99ae21ebfc44d2b775d55ce9ce6018a81fae776b

[Home](#)[state contract](#)[product contract](#)

# Product Contract

Deployed Address:0x0AA3e03f87dd89cb14BB818087877CD3F8E5EF57

Contract Owner:0x99aE21eBfC44d2b775D55cE9Ce6018A81FaE776b

State Address:0xE81c9527DD3E6f13e0cD45CaB367B2508a713D17

Go to token:

Go to token by serial number:

Mint:

## Recently Minted Tokens

Serial Number	Zip Code	Token ID
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In this page the user can view the detailed information of the product such as its deployed address, the address of the owner and the state contract address that this contract uses. The user can go to the page of previously minted token by typing only token id, or go to the token page by typing the serial number used while minting. The user can also mint tokens by providing serial number and zipcode.

## Product Contract Page - mint operation

Selected Account Address: 0x99ae21ebfc44d2b775d55ce9ce6018a81

[Home](#) [state contract](#) [product contract](#)

### Product Contract

Deployed Address:0x0AA3e03f87dd89cb14BB818087877CD3F8E5  
Contract Owner:0x99aE21eBfC44d2b775D55cE9Ce6018A81FaE7  
State Address:0xE81c9527DD3E6f13e0cD45CaB367B2508a713D

Go to token:

Go to token by serial number:

Mint:

### Recently Minted Tokens

Serial Number	Zip Code	Token ID
---------------	----------	----------

MetaMask Notification

bloxberg

test2

0x0AA...EF...

New address detected! Click here to add to your address book.

MINT

AYRINTILAR DATA HEX

DÜZENLE

Estimated gas fee 0.00000043 0 U+25B3

Site suggested Max fee: 0.00000043 U+25B3

Toplam 0.00000043 0.00000043 U+25B3

Amount + gas fee Max amount: 0.00000043 U+25B3

Reddet Onayla

When the user wants to mint a token, the user enters the serial number and zip code, then clicks “mint”. The corresponding metamask request takes place.

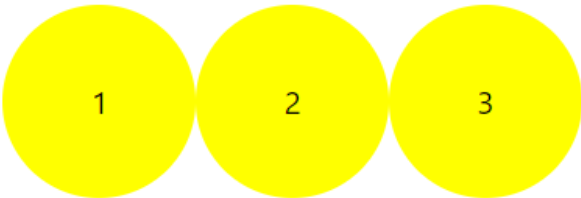
Product contract page- after mint operation

Selected Account Address: 0x99ae21ebfc44d2b775d55ce9ce6018a81fae776b

Home state contract product contract

Product Contract

Deployed Address:0x595b9D688bDc87C07e9252862C6F961E485aCf21  
Contract Owner:0x99aE21eBfC44d2b775D55cE9Ce6018A81FaE776b  
State Address:0xE81c9527DD3E6f13e0cD45CaB367B2508a713D17  
Total number of tokens stored in this contract:3



Go to token:

Go to token by serial number:

Mint:

Recently Minted Tokens

Serial Number Zip Code Token ID		
cmpe483	boun	4

When the user mints a token, information such as serial number, zip code, and token ID about recently minted tokens is listed in the same page. The tokens are also displayed as yellow circles to visualize them. The user can click those coin images and navigate to their token pages.

## Token Page - Selected token's information

Selected Account Address: 0x99ae21ebfc44d2b775d55ce9ce6018a81fae776b

[Home](#)[state contract](#)[product contract](#)

## Product Contract - Token Page

Token ID: 2


Deployed Address:0x15262e52334620b6Af8C39e6018B429D70650b0f

Contract Owner:0x99aE21eBfC44d2b775D55cE9Ce6018A81FaE776b

Prospective Owner : 0x00

Owner Of Token : 0x99aE21eBfC44d2b775D55cE9Ce6018A81FaE776b

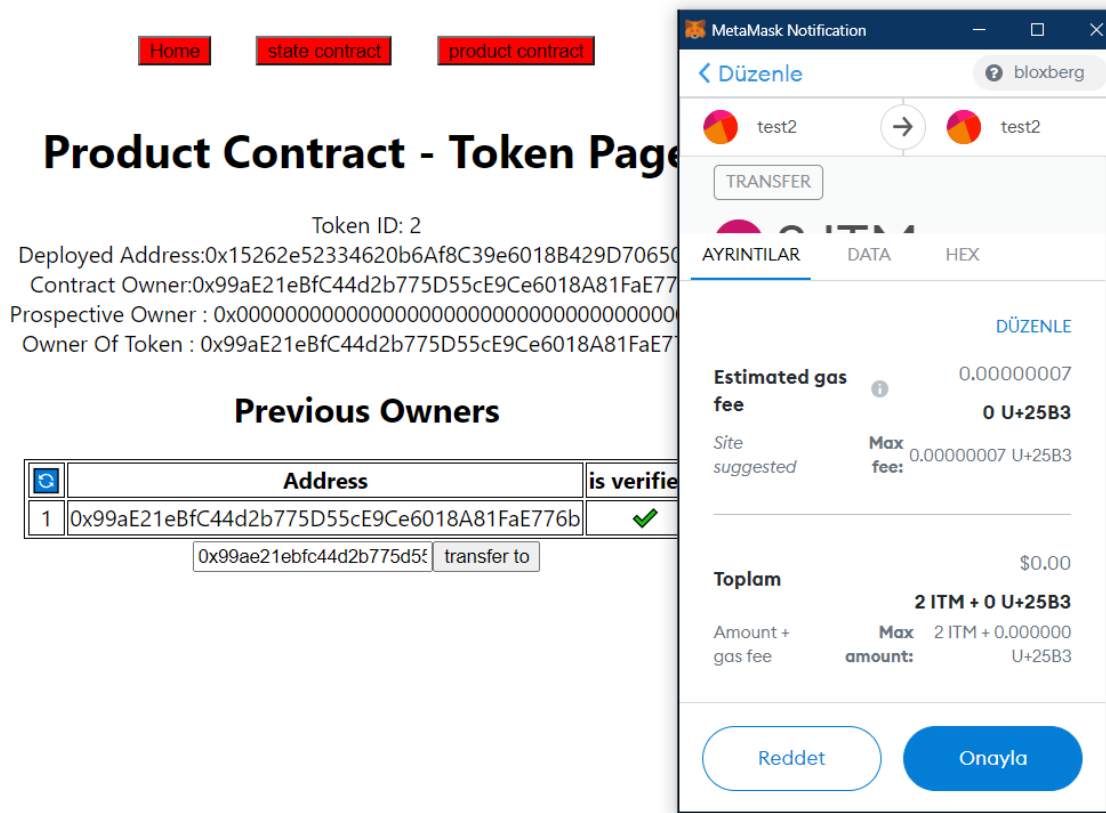
### Previous Owners

	Address	is verified?
1	0x99aE21eBfC44d2b775D55cE9Ce6018A81FaE776b	✓

In this page the information of the token is seen. Previous owners of the contract are listed from the latest to newest. If the current user is the owner of the token, “transfer to” operation is also available and seen on the page to transfer the token to someone else.

### Token Page - Transfer operation

Selected Account Address: 0x99ae21ebfc44d2b775d55ce9ce6018a81fae776b



When the user wants to transfer a token to an address, the user enters the address of the another person who is the candidate owner of the token in the corresponding token's page, then clicks "transfer to" button.

Token page

Selected Account Address: 0x99ae21ebfc44d2b775d55ce9ce6018a81fae776b

Home

state contract

product contract

# Product Contract - Token Page

Token ID: 2


Deployed Address:0x15262e52334620b6Af8C39e6018B429D70650b0f

Contract Owner:0x99aE21eBfC44d2b775D55cE9Ce6018A81FaE776b

Prospective Owner : 0x99aE21eBfC44d2b775D55cE9Ce6018A81FaE776b

Owner Of Token : 0x99aE21eBfC44d2b775D55cE9Ce6018A81FaE776b

## Previous Owners

	Address	is verified?
1	0x99aE21eBfC44d2b775D55cE9Ce6018A81FaE776b	✓

Approve transfer

Cancel transfer

If the user is the prospective (waited) user of the current token, then “approve” and “cancel” operations are only available to the user.

## Token page- approve transfer

Selected Account Address: 0x99ae21ebfc44d2b775d55ce9ce6018a81

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### Product Contract - Token Page

Token ID: 2  
Deployed Address:0x15262e52334620b6Af8C39e6018B429D7065  
Contract Owner:0x99aE21eBfC44d2b775D55cE9Ce6018A81FaE77  
Prospective Owner : 0x99aE21eBfC44d2b775D55cE9Ce6018A81FaE77  
Owner Of Token : 0x99aE21eBfC44d2b775D55cE9Ce6018A81FaE77

#### Previous Owners

	Address	is verified
1	0x99aE21eBfC44d2b775D55cE9Ce6018A81FaE776b	✓

[Approve transfer](#)[Cancel transfer](#)

MetaMask Notification

bloxberg

test2

0x152...0b0f

New address detected! Click here to add to your address book.

APPROVE TRANSFER

AYRINTILARDATAHEX

DÜZENLE

Estimated gas fee

0.00000013

0 U+25B3

Site suggested

Max fee:

0.00000013 U+25B3

Toplam

0.00000013

0.00000013 U+25B3

Amount + gas fee

Max amount:

0.00000013 U+25B3

Reddet

Onayla

This page shows a metamask request for “approve transfer”.

## Token page - Previous Owners

Selected Account Address: 0x99ae21ebfc44d2b775d55ce9ce6018a81fae776b

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# Product Contract - Token Page

Token ID: 2


Deployed Address:0x15262e52334620b6Af8C39e6018B429D70650b0f

Contract Owner:0x99aE21eBfC44d2b775D55cE9Ce6018A81FaE776b

Prospective Owner : 0x00

Owner Of Token : 0x99aE21eBfC44d2b775D55cE9Ce6018A81FaE776b

## Previous Owners

	Address	is verified?
1	0x99aE21eBfC44d2b775D55cE9Ce6018A81FaE776b	✓
2	0x99aE21eBfC44d2b775D55cE9Ce6018A81FaE776b	✓

When the candidate owner approves the transfer, the candidate owner becomes the current owner and its address is appended in the “previous owners” table.