

Part II

Deploy & AtAddress

Deploy the contract

Run tab: Deploy button

Compile

Run


Settings

Analysis



Debugger

Sup

Environment

Injected Web3  Ropsten (3

Account

0x309...26e55 (11 ether) ▼  

Gas limit

3000000

Value

0

wei

AwardToken ▼

Deploy

Confirm the transaction

Submit button

But make sure you put in a gas price!

The image shows a web browser window with the Remix IDE interface. A MetaMask notification overlay is visible on the left, titled "CONFIRM TRANSACTION" for the Ropsten Test Net. It displays account information for "Account 1" (309223...6e55, 11.000 ETH, 792132 USD) and transaction details: Amount (0 ETH, 0.00 USD), Gas Limit (2409888 UNITS), Gas Price (1 GWEI), Max Transaction Fee (0.002409 ETH, 1.73 USD), and Max Total (0.002409 ETH, 1.73 USD). The "SUBMIT" button is highlighted with a red box. The main interface shows the "AwardToken.sol" contract being deployed. The "Environment" is set to "Injected Web3" on the "Ropsten (3)" network. The "Account" is "0x309...26e55 (11 ether)". The "Gas limit" is "3000000" and the "Value" is "0 wei". The "AwardToken" contract is selected, and the "Deploy" button is visible. The "Load contract from Address" button is also present. The "1 pending transactions" section shows the transaction status. The "0 contract Instances" section is empty. The terminal at the bottom shows the command "remix:loadgist 1483e5599012c3783def91ead259ece8" and the output "creation of AwardToken pending...".

MetaMask Notification

CONFIRM TRANSACTION

Account 1
309223...6e55
11.000 ETH
792132 USD

Amount: 0 ETH, 0.00 USD

Gas Limit: 2409888 UNITS

Gas Price: 1 GWEI

Max Transaction Fee: 0.002409 ETH, 1.73 USD

Max Total: 0.002409 ETH, 1.73 USD

Data included: 8748 bytes

RESET SUBMIT REJECT

Environment: Injected Web3 Ropsten (3)

Account: 0x309...26e55 (11 ether)

Gas limit: 3000000

Value: 0 wei

AwardToken

Deploy

Load contract from Address At Address

1 pending transactions

0 contract Instances

[2] only remix transactions, script

Search transactions

remix:loadgist 1483e5599012c3783def91ead259ece8

remix:batch

creation of AwardToken pending...

Check if tx is mined

Terminal logs in Remix

creation of AwardToken pending...

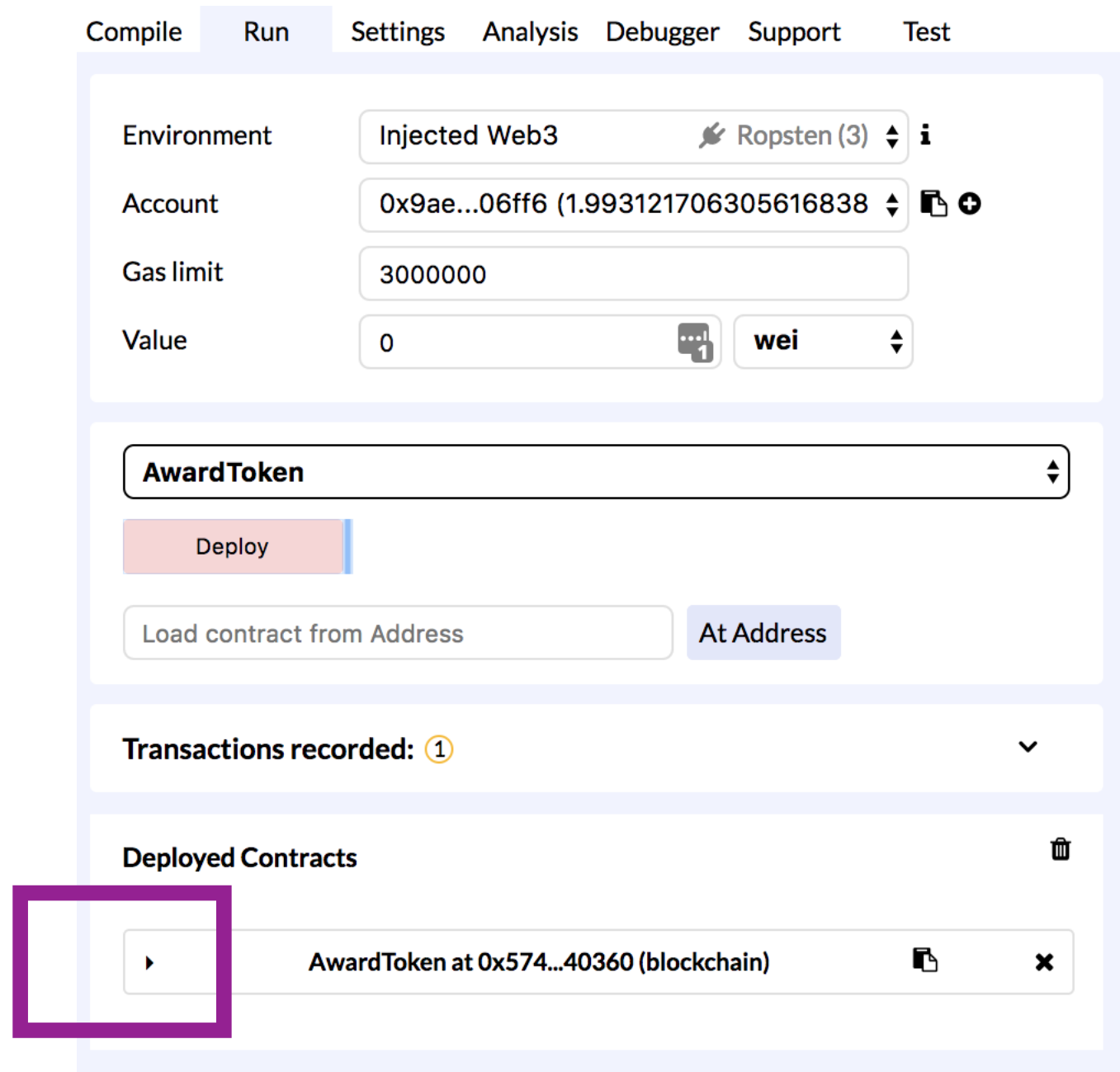
<https://ropsten.etherscan.io/tx/0x404a4445ebb3a969b15257a586a61582afa07dcf02b1b2617f77519b30378be8>

► **[block:3159099 txIndex:2]** from:0x309...26e55
to:AwardToken.(constructor) value:0 wei data:0x608...70029
logs:0 hash:0x404...78be8

Debug

Click to see the contract's UI

On the deployed contract



Behold!

The Interactive UI for AwardToken.sol contract

▼

AwardToken at 0x9b7...0cf2f (blockchain)

📄

✕

approve	address _spender, uint256 _value	▼
closeRound		
decreaseApproval	address _spender, uint256 _subtractedValue	▼
finishMinting		
increaseApproval	address _spender, uint256 _addedValue	▼
mint	address _to, uint256 _amount	▼
startRound		
transfer	address _to, uint256 _value	▼
transferFrom	address _from, address _to, uint256 _value	▼
transferOwnership	address newOwner	▼
allowance	address _owner, address _spender	▼
balanceOf	address _owner	▼
currBallot		
getPreviousWinners		
mintingFinished		
owner		
prevWinners	uint256	▼
totalSupply		

Execute startRound

Its a payable function
(as opposed to a call function - which is free)

▼ AwardToken at 0x9b7...0cf2f (blockchain) 📄

approve

address_spender, uint256_value

▼

closeRound

decreaseApproval

address_spender, uint256_subtractedValue

▼

finishMinting

increaseApproval

address_spender, uint256_addedValue

▼

mint

address_to, uint256_amount

▼

startRound

transfer

address_to, uint256_value

▼

transferFrom

address_from, address_to, uint256_value

▼

transferOwnership

address newOwner

▼

allowance

address_owner, address_spender

▼

balanceOf

address_owner

▼

currBallot

getPreviousWinners

mintingFinished

owner

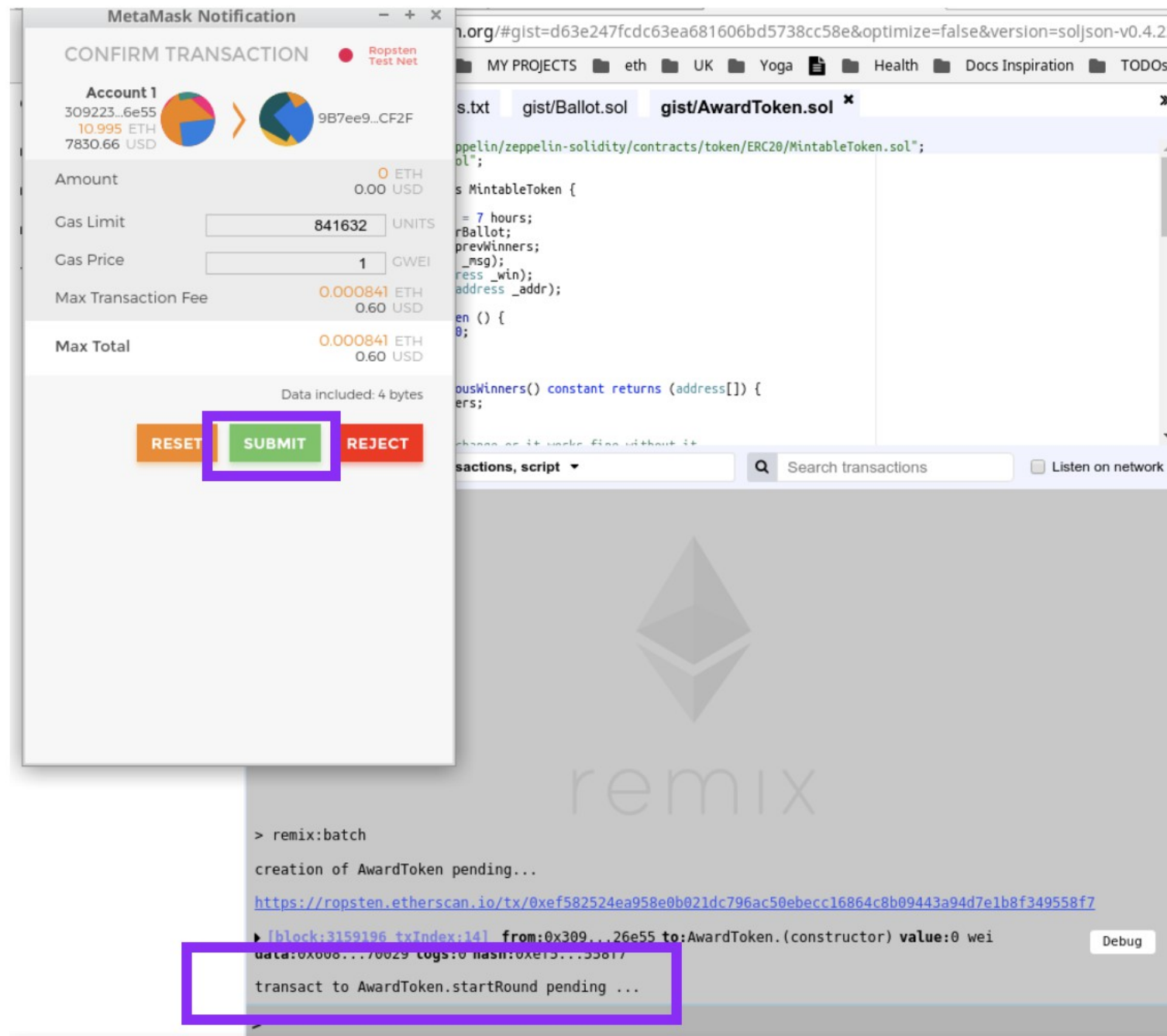
prevWinners

uint256

▼

totalSupply

Confirm the transaction



Check if tx is mined

In the terminal logs in Remix

```
transact to AwardToken.startRound pending ...
```

```
https://ropsten.etherscan.io/tx/0x5a97b4946979f52dfb6dc8ab2fecebb8fd43515ff4e25597ecb9d0a88472c8b2
```

```
► [block:3159300 txIndex:12] from:0x309...26e55 to:AwardToken.startRound() 0x9b7...0cf2f  
value:0 wei data:0x55e...3f086 logs:1 hash:0x5a9...2c8b2
```

Debug

Expand tx log

to see the logs

✓ [block:3665523 txIndex:4] from:0x9ae...06ff6 to:AwardToken.startRound() 0x574...40360 value:0 wei
data:0x55e...3f086 logs:1 hash:0x16c...0a81c

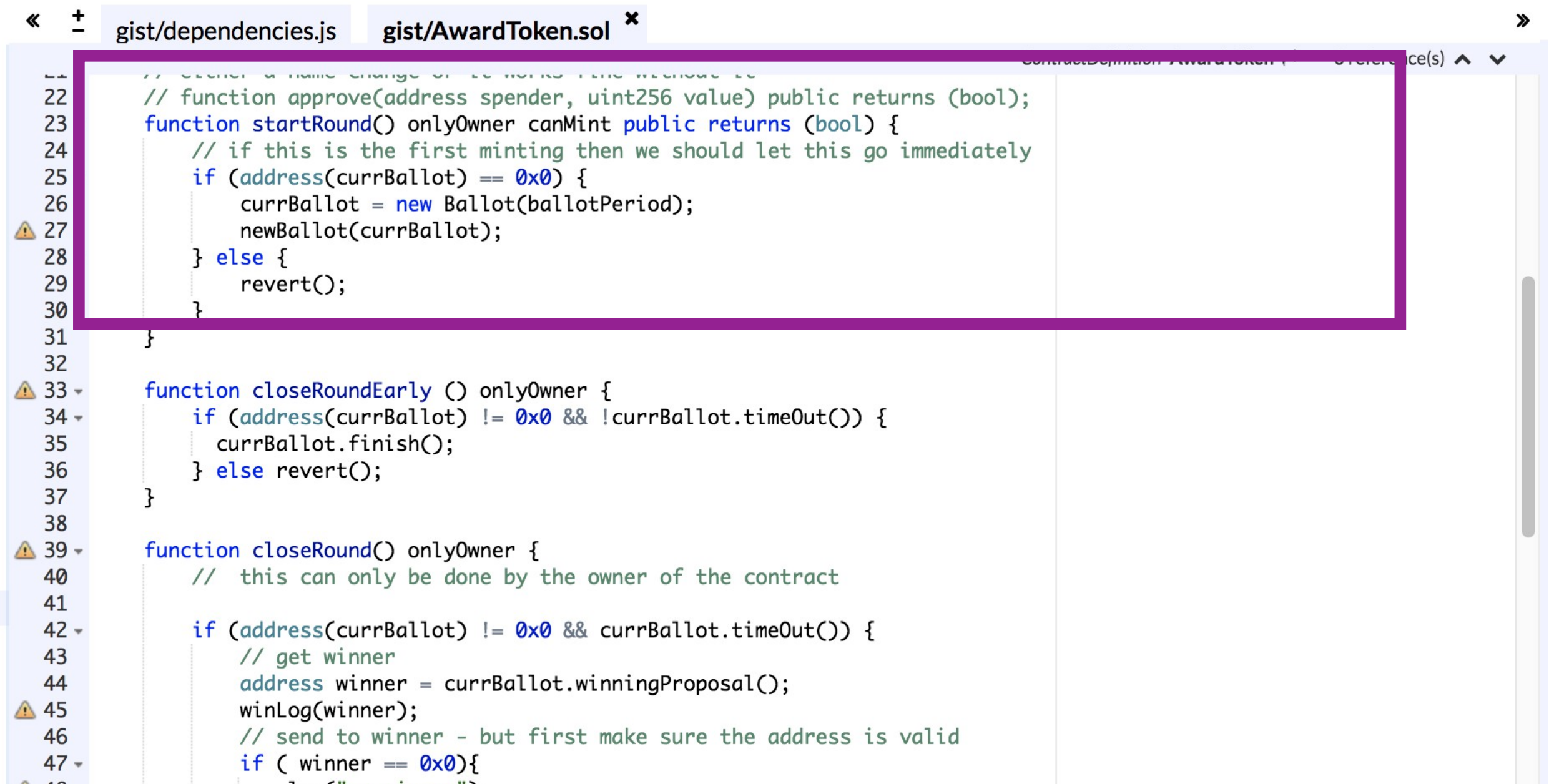
Debug



status	0x1 Transaction mined and execution succeed
transaction hash	0x16c8af5a3fd0e5bcacd8858ab42d4f8eff39fc33bb98290740c03eeb4880a81c
from	0x9ae59af2e33480caa48f2dc6f6cede7ffab06ff6
to	AwardToken.startRound() 0x574d270dc04e89c5d65e24e19f1deb9e17240360
gas	613643 gas
transaction cost	613643 gas
hash	0x16c8af5a3fd0e5bcacd8858ab42d4f8eff39fc33bb98290740c03eeb4880a81c
input	0x55e...3f086
decoded input	{ }
decoded output	-
logs	[{ "from": "0x574d270dc04e89c5d65e24e19f1deb9e17240360", "topic": "0x65f35fb257c91daed794331bfd2ad0f4439d49319d52a5b3bfb04c84969fdbeb", "event": "newBallot", "args": { "0": "0xD6052C85A3D26eE9EeC8262d462bfDC672B80D93", "_addr": "0xD6052C85A3D26eE9EeC8262d462bfDC672B80D93", "length": 1 } }]
value	0 wei

Take a look at the startRound function in the editor

– just to see what it is doing...



The screenshot shows a code editor with two tabs: 'gist/dependencies.js' and 'gist/AwardToken.sol'. The 'AwardToken.sol' tab is active, displaying Solidity code. A purple rectangular box highlights the 'startRound' function, which is located between lines 22 and 30. The function is a public function that only the owner can call. It checks if the current ballot address is 0x0. If it is, it creates a new ballot with the current ballot period. If it is not 0x0, it reverts. The code is as follows:

```
// function approve(address spender, uint256 value) public returns (bool);
function startRound() onlyOwner canMint public returns (bool) {
    // if this is the first minting then we should let this go immediately
    if (address(currBallot) == 0x0) {
        currBallot = new Ballot(ballotPeriod);
        newBallot(currBallot);
    } else {
        revert();
    }
}
```

Below the highlighted function, there are two more functions: 'closeRoundEarly' (lines 33-37) and 'closeRound' (lines 39-47). The 'closeRoundEarly' function checks if the current ballot is not 0x0 and if it has timed out, then it finishes the ballot. The 'closeRound' function checks if the current ballot is not 0x0 and if it has timed out, then it gets the winner, logs the win, and sends the prize to the winner, but first checks if the winner address is valid.

Get ballot's address

Execute currBallot call

✕

▼ AwardToken at 0x9b7...0cf2f (blockchain) 📄

approve	address _spender, uint256 _value	▼
closeRound		
decreaseApproval	address _spender, uint256 _subtractedValue	▼
finishMinting		
increaseApproval	address _spender, uint256 _addedValue	▼
mint	address _to, uint256 _amount	▼
startRound		
transfer	address _to, uint256 _value	▼
transferFrom	address _from, address _to, uint256 _value	▼
transferOwnership	address newOwner	▼
allowance	address _owner, address _spender	▼
balanceOf	address _owner	▼
currBallot		
getPreviousWinners		
mintingFinished		
owner		
prevWinners	uint256	▼
totalSupply		

Copy ballot's address

currBallot output

▼ AwardToken at 0x9b7...0cf2f (blockchain) 

approve

address _spender, uint256 _value

▼

closeRound

decreaseApproval

address _spender, uint256 _subtractedValue

▼

finishMinting

increaseApproval

address _spender, uint256 _addedValue

▼

mint

address _to, uint256 _amount

▼

startRound

transfer

address _to, uint256 _value

▼

transferFrom

address _from, address _to, uint256 _value

▼

transferOwnership

address newOwner

▼

allowance

address _owner, address _spender

▼

balanceOf

address _owner

▼

currBallot

: address:

0xbE7bF60cee009DCDb2Ad8D045c19e76597bbF3c6

getPreviousWinners

mintingFinished

owner

prevWinners

uint256

▼



totalSupply

Switch to Ballot



Run tab: dropdown

Compile Run Settings Analysis Debugger Support

Environment

Injected Web3  Ropsten (3) ▼ 

Account

0x309...26e55 (10.994338592 ether) ▼  

Gas limit

3000000

Value

0

wei ▼



Ballot ▼

Access Ballot contract



Paste address + click At Address

Compile Run Settings Analysis Debugger Support

Environment

Injected Web3  Ropsten (3) 

Account


0x309...26e55 (10.994338592 ether)  


Gas limit

3000000


Value

0

wei 

Ballot 

Deploy

uint256 duration 

0xbE7bF60cee009DCDb2Ad8D045c19



At Address

Access Ballot contract



Paste address + click At Address

Compile Run Settings Analysis Debugger Support

Environment

Injected Web3  Ropsten (3) 

Account


0x309...26e55 (10.994338592 ether)  


Gas limit

3000000


Value

0

wei 

Ballot 

Deploy

uint256 duration 

0xbE7bF60cee009DCDb2Ad8D045c19

At Address

See autogenerated UI

(you might need to scroll down)

- Interact with all the functions in the contract
- And all the functions in the inherited contracts

Compile Run Settings Analysis Debugger Support

Environment Injected Web3 Ropsten (3) i

Account 0x309...26e55 (10.994338592 ether) v

Gas limit 3000000

Value 0 wei v

Ballot v

Deploy uint256 duration v

0xbE7bF60cee009DCDb2Ad8D045c19 At Address

0 pending transactions

AwardToken at 0x9b7...0cf2f (blockchain) v

Ballot at 0xbE7...bF3c6 (blockchain) v

- addProposal string desc, string title, address targetAddr v
- vote address proposal v
- getProposals
- proposals address v
- proposalsSender uint256 v
- timeOut
- winningProposal