Lab: Working with Variables

Prerequisites

1. Chrome or Firefox browser.
2. An Internet connection

This Document has been updated in March 2020 to reflect Solidity 0.6 changes

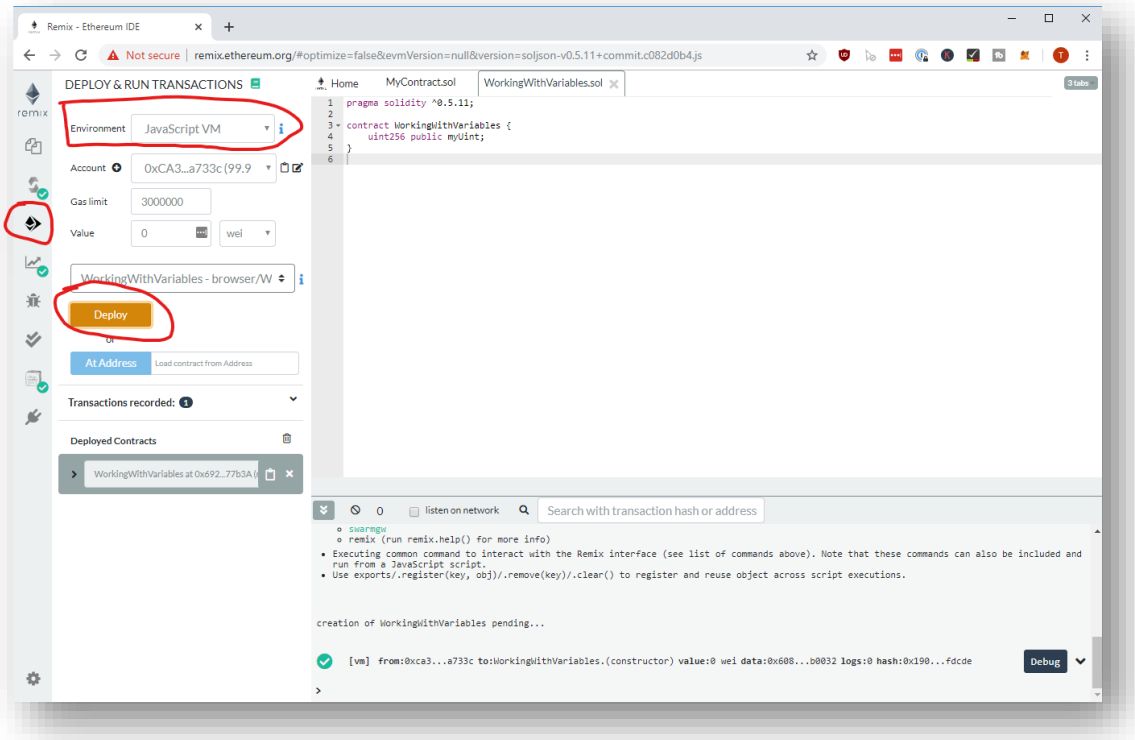
Open Remix with the following Smart Contract:

```
pragma solidity >=0.5.11 <0.7.0;

contract WorkingWithVariables {
    uint256 public myUint;
}
```

Step by Step Instruction

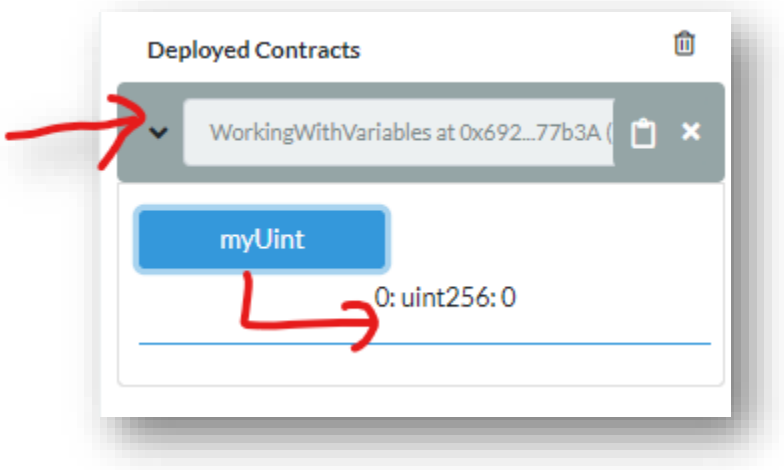
Deploy the Smart Contract in the JavaScript VM

Open the "Deploy and Run Transactions" view in Remix with the smart contract



Interact with the Smart Contract

Now we are reading the myUint, although it has not been initialized:

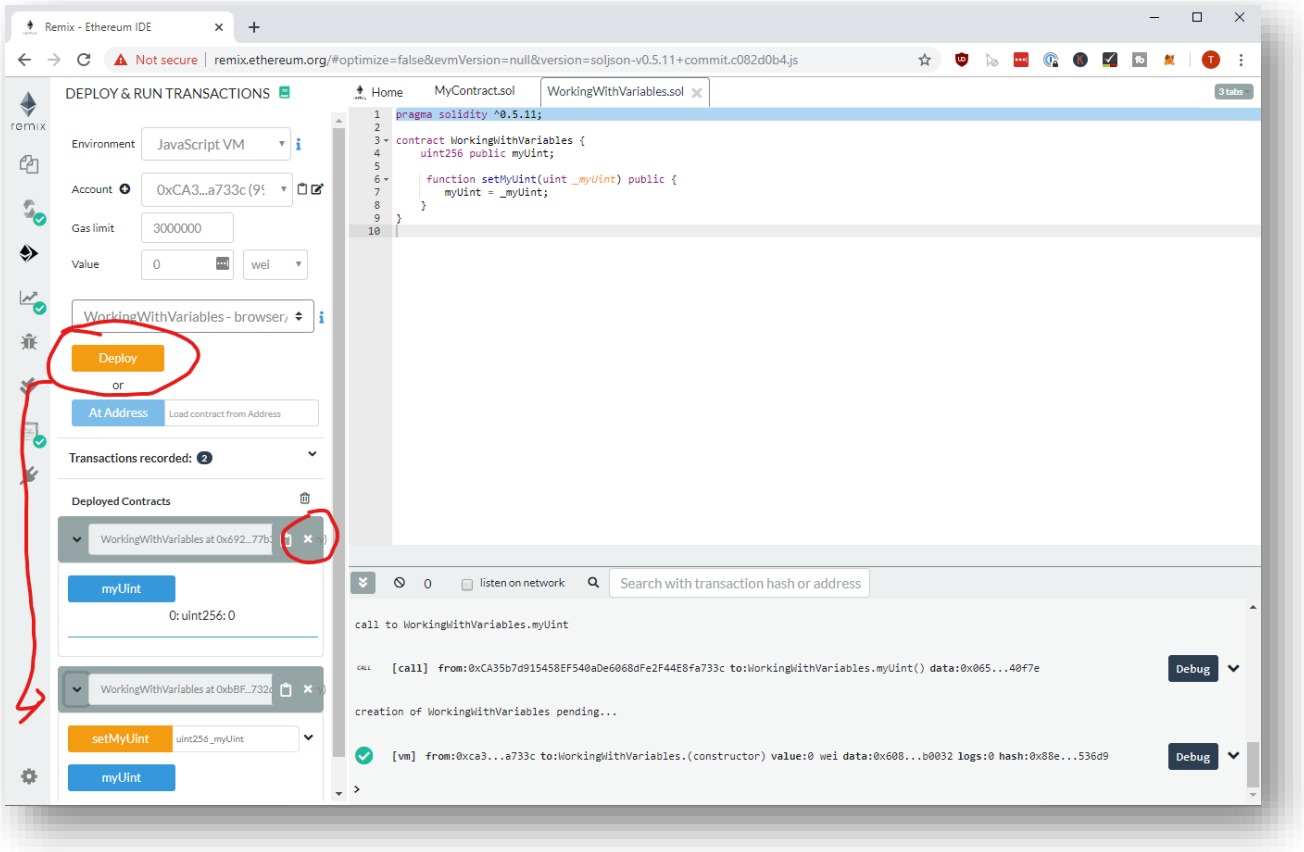


We add a Setter-Function

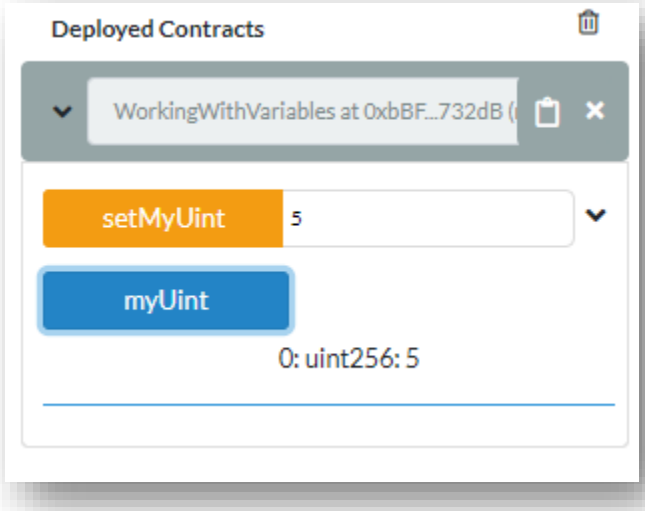
```
pragma solidity >=0.5.11 <0.7.0;

contract WorkingWithVariables {
    uint256 public myUint;

     function setMyUint(uint _myUint) public {
         myUint = _myUint;
     }
}
```

Deploy a new version of the smart contract

First you need to deploy a new version of the smart contract and you can close the previous Instance:



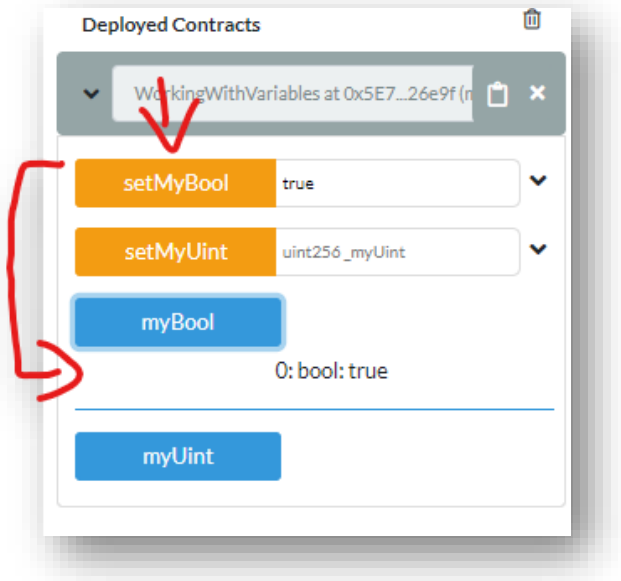
Set the Integer and get the result



Add a Boolean and Interact with it

Don't forget to deploy a new instance before it appears:

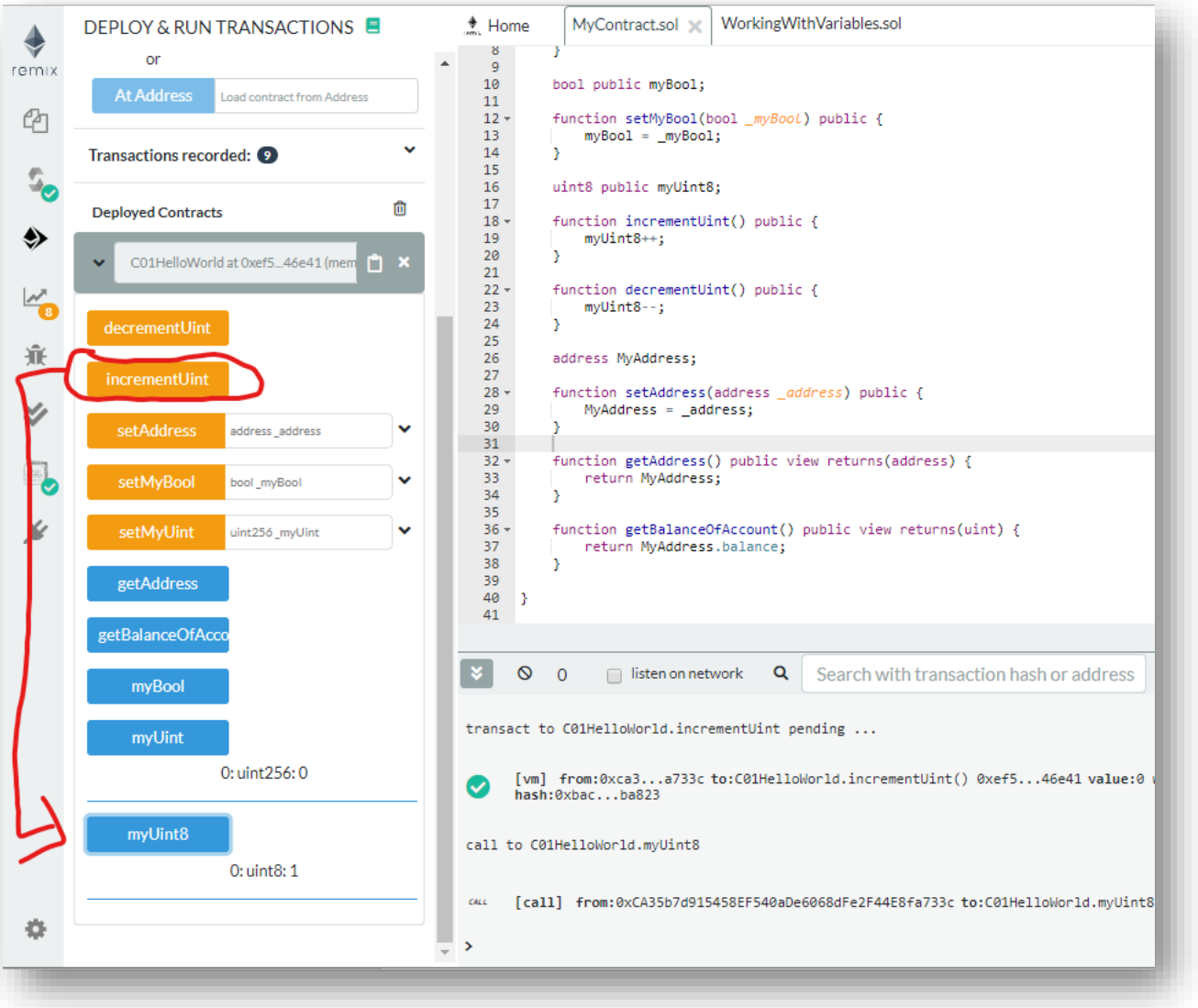
```
pragma solidity >=0.5.11 <0.7.0;

contract WorkingWithVariables {
    uint256 public myUint;

     function setMyUint(uint _myUint) public {
        myUint = _myUint;
    }

    bool public myBool;

    function setMyBool(bool _myBool) public {
        myBool = _myBool;
    }
}
```



Add a uint8 and increment/decrement functions

Uint8 ranges from 0 to 255. We add two functions to increment and decrement the variable.

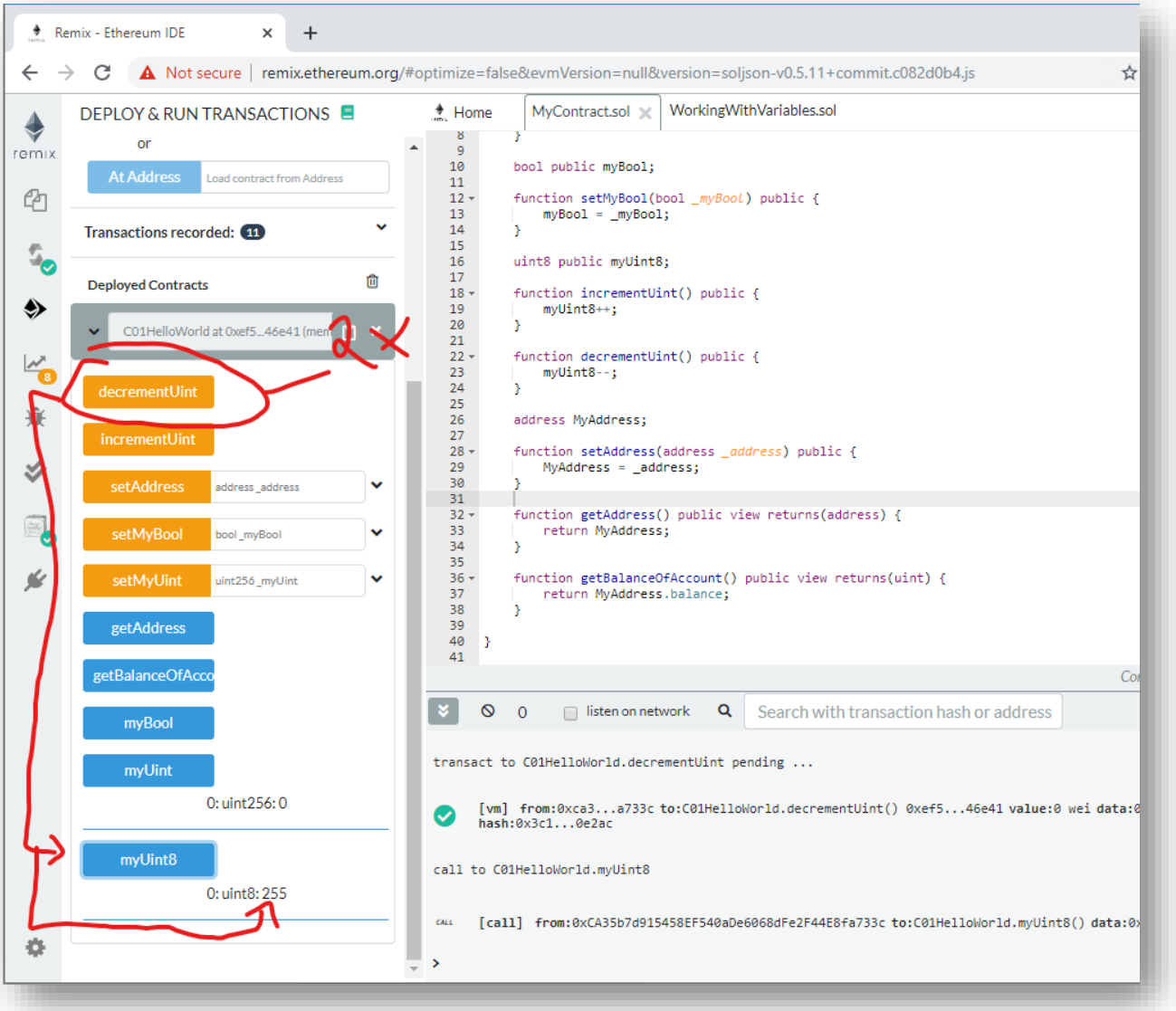
```
pragma solidity >=0.5.11 <0.7.0;

contract WorkingWithVariables {
    uint256 public myUint;

     function setMyUint(uint _myUint) public {
        myUint = _myUint;
    }

    bool public myBool;

    function setMyBool(bool _myBool) public {
        myBool = _myBool;
    }

    uint8 public myUint8;

    function incrementUint() public {
        myUint8++;
    }

    function decrementUint() public {
        myUint8--;
    }
}
```

Observe Overflow and Underflow

With Solidity you have to be careful about overflows and underflows. There are no warnings!

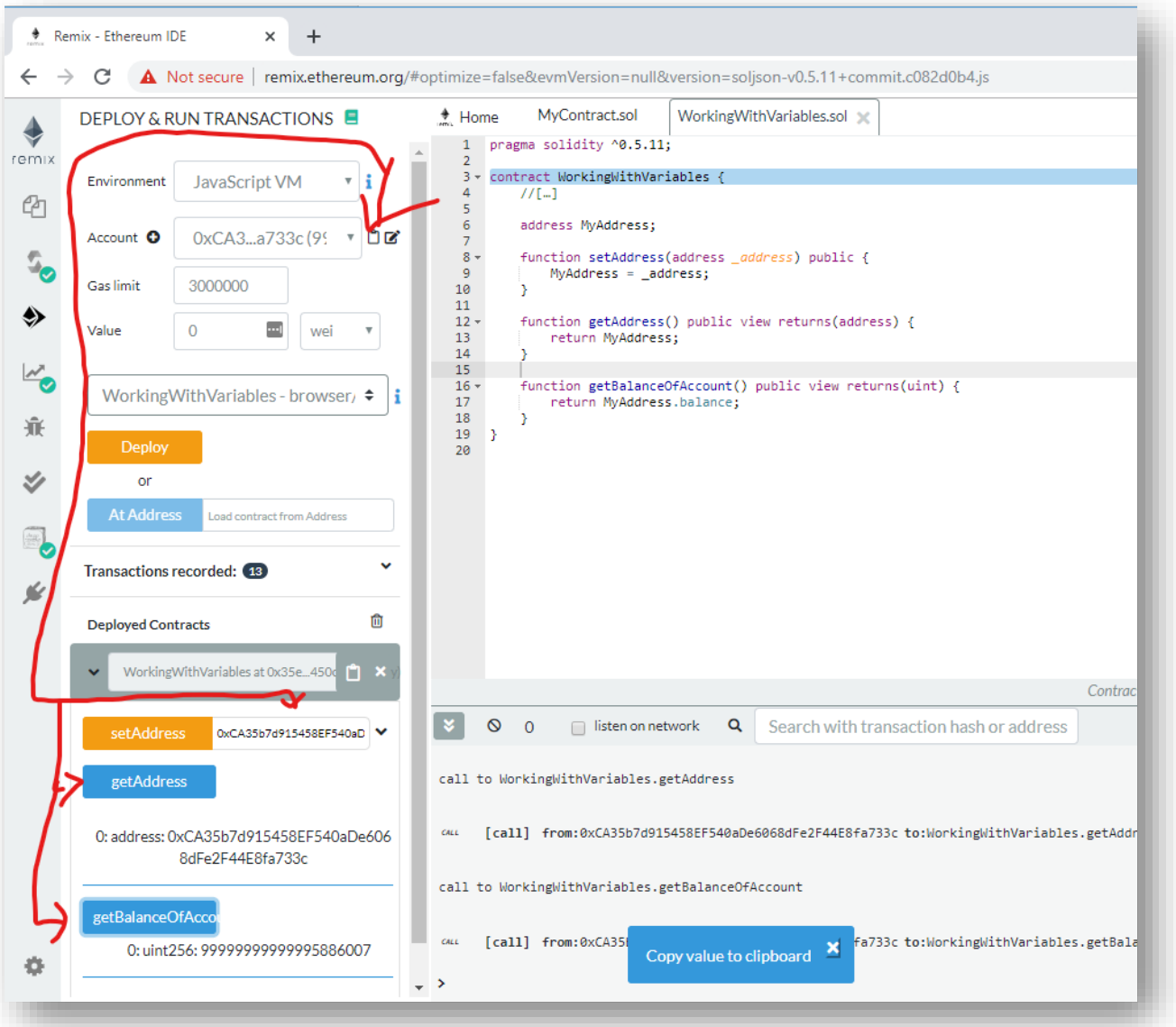
Decrement the uint to "-1" and observe it automatically rolls over to 255:



Add a Variable of the type "Address"

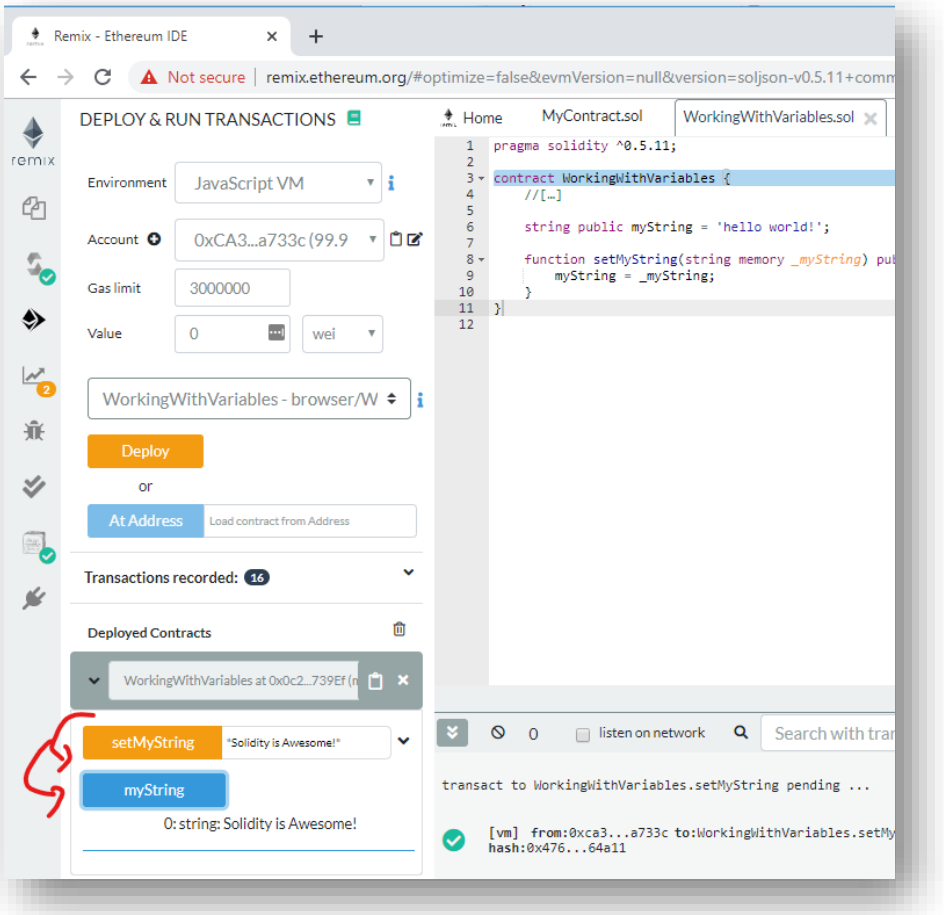
```
pragma solidity >=0.5.11 <0.7.0;

contract WorkingWithVariables {
    //[…]

    Address public myAddress;

    function setAddress(address _address) public {
        myAddress = _address;
    }

    function getBalanceOfAccount() public view returns(uint) {
        return myAddress.balance;
    }
}
```


Set the Address to the address of your Account



Add a String

```
pragma solidity >=0.5.11 <0.7.0;

contract WorkingWithVariables {
    //[…]

    string public myString = 'hello world!';

    function setMyString(string memory _myString) public {
        myString = _myString;
    }
}
```



Congratulations, LAB is completed

From the Course “Ethereum Blockchain Developer – Build Projects in Solidity”

FULL COURSE:

https://www.udemy.com/course/blockchain-developer/?referralCode=E8611DF99D7E491DFD96

