Blockchain Lab

**Lab L2: Smart Contract Programming**

## **Exercise 1a: Hello-world Contract with Remix**

Solidity Program as provided:

A screenshot of a computer screen

Description automatically generated

Steps:

1. Write the Code
2. Compile it
3. Deploy it
4. Execute the Greet Function

Program Output

Graphical user interface, application, Teams

Description automatically generated

## **Exercise 1b (with 20% bonus): Hello-world Contract with Solc and On-Campus Ethereum**

Steps:

1). Write Sol file code

2). Compile using solc

Text

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Compiling

1). Modify .bin and .abi files

Text

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BIN FILE

Text

Description automatically generated

ABI FILE

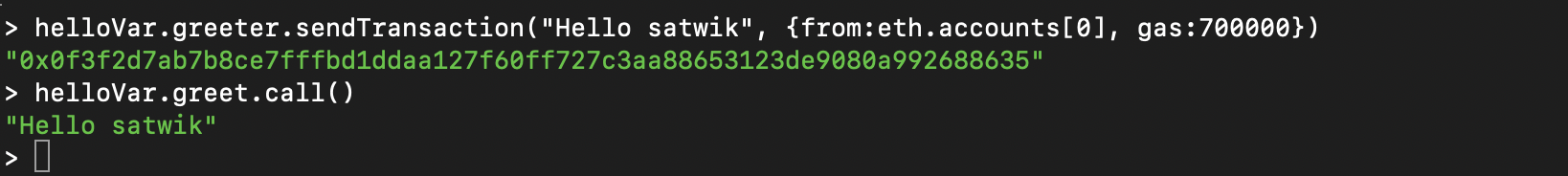
1). Connect to ethereum network

2). Load and Deploy contract

>loadScript(“hello.abi”)

>loadScript(“hello.bin”)

3). Execute Contract



Output display

## 

## **Exercise 2: Find the Maximum**

Steps:

1). Write the Code

Text

Description automatically generated

Program

2). Compile and modify .bin and .abi files

Text

Description automatically generated

BIN FILE

Text

Description automatically generated

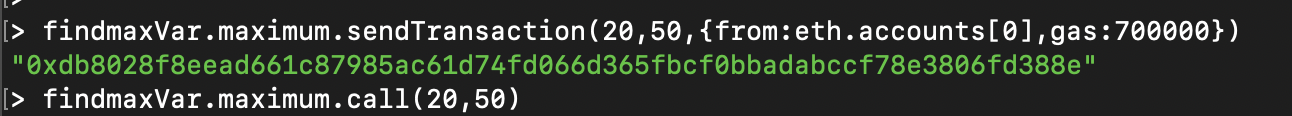
ABI FILE

1). Connect to ethereum network and deploy contract

>loadScript(“findmaximum.bin”)

>loadScript(“findmaximum.abi”)

2). Execute contract



Contract Execution

Text

Description automatically generated

Contract Call

## 

## **Exercise 3: Rock-paper-scissors game**

## Steps:

Step 1: Write Code:

Code Part 1

Text

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Code Part 2

Text

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Code Part 3

Text

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Step 2. Compile the smart contract & Deploy

Step 3. Provide Accounts to play game

Graphical user interface, text

Description automatically generated

Account 1

Graphical user interface, text

Description automatically generated

Account 2

Step 4: Register both accounts with 5 ethers

A screenshot of a cell phone

Description automatically generated

Registered Accounts

Step 5. Execute ‘Play’ with their respective choices

Graphical user interface

Description automatically generated

Player 1: Scissors Player 2: Rock

Step 6. After both accounts choose their choice, winner is declared and ethers are transferred

Graphical user interface, text, application

Description automatically generated

Ether Transfer

A screenshot of a cell phone

Description automatically generated

WINNER: Player 2