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## Assignment Tasks - Week2 - Group No. 5

This is a group activity for at least 3 students:

- Develop and run scripts for “Ballot.sol” within your group to give voting rights, casting votes, delegating votes and querying results
- Write a report with each function execution and the transaction hash, if successful, or the revert reason, if failed
- Submit your weekend project by filling the form provided in Discord
- Submit your code in a github repository in the form

## Date of Submission

18-Aug-2024

## Github Link

<https://github.com/evmbootcamp/week2project>

# Tasks

## Successfully deploying the Contract Ballot.sol with 2 Proposals

```
Anamitras-MacBook-Pro:project4 anamitradebnath$ npx ts-node --files ./scripts/DeployWithViem.ts "prop1" "prop2"
Deployer address: 0xC3B3105ec9F8527a3aD7E890227349d42fccd474
Deployer balance: 0.032901521129032352 ETH

----- Deploying Ballot contract now -----
Transaction hash: 0x9b13caba0c8627e3ebf2f207041bf57a121b21d30c29d42674eadbd5dace430e
Waiting for confirmations...
```

Contract URL on Etherscan:

<https://sepolia.etherscan.io/address/0x94245ac9f6e39373d3b3698753d47903bb1e0240#code>

## Casting Votes

Script:

CastVote.ts

### Script failing when array index given more than the length of proposal array

[illegible]

## Script successfully executing voting for a proposal

```
Anamitras-MacBook-Pro:project4 anamitradebnath$ npx ts-node --files ./scripts/CastVote.ts 0x94245AC9f6E39373d3B3698753d47903bb1E0240 0
Proposal selected:
Voting to proposal prop1
Confirm? (Y/n)
y
Transaction hash: 0xe8a2984ed48c5a753e94826a2c1663becfc38eb4a6c629d3f0080c28218008e3
Waiting for confirmations...
Transaction confirmed
```

## Giving Voting Rights

Script:

GiveRightToVote.ts

## Script successfully giving rights to vote to a new voter

```

● Anamitras-MacBook-Pro:project4 anamitradebnath$ npx ts-node --files ./scripts/GiveRightToVote.ts 0x94245AC9f6E39373d3B3698753d47903bb1E0240 0xeDa7116C16162B1EFf03D6Eed42b3F42213900f8
parameter's length = 2
--- Executing giveRightToVote() ---
Transaction hash: 0x49eb19820159a61daa4235f56d1a511d5ef86ddd9dda57e47adc191851af6d94
Waiting for confirmations...
Transaction confirmed
T Hash: 0x49eb19820159a61daa4235f56d1a511d5ef86ddd9dda57e47adc191851af6d94
○ Anamitras-MacBook-Pro:project4 anamitradebnath$

```

Trying to give the same voter voting right again throws error

```
Anamitras-MacBook-Pro:project4 anamitradebnath$ npx ts-node --files ./scripts/GiveRightToVote.ts 0x94245AC9f6E3937d3B3698753d47903bb1E0240 0xeDa7116C16162B1EFF03D6Eed42
8
parameter's length = 2
--- Executing giveRightToVote() ---
/Users/anamitradebnath/TAMU/Study/2024_Web3_and_Web2/Encode EVM Solidity BootCamp 2024/week2/project4/node_modules/viem/utils/errors/getTransactionError.ts:44
    return new TransactionExecutionError(cause, {
      TransactionExecutionError: Execution reverted for an unknown reason.

Request Arguments:
  from: 0xC3B3105ec9F8527a3aD7E89022749d42fcdd474
  to: 0x94245AC9f6E3937d3B3698753d47903bb1E0240
  data: 0x9e7b8d610000000000000000000000000000eda7116c16162b1eff03d6eed42b3f42213900f8

Details: execution reverted
Version: 2.19.4
    at getTransactionError (/Users/anamitradebnath/TAMU/Study/2024_Web3_and_Web2/Encode EVM Solidity BootCamp 2024/week2/project4/node_modules/viem/utils/errors/getTrans
ts:44:10)
```

# Delegate

## Script

DelegateTo.ts

Script failing when a user who has already voted trying to delegate

```
Anamitras-MacBook-Pro:project4 anamitradebnath$ npx ts-node --files ./scripts/DelegateTo.ts 0x94245AC9f6E39373d3B3698753d47903bb1E0240 0xeDa7116C16162B1EFf03D6Eed42b3F42213900f8
parameter's length = 2
--- Executing delegate() ---
Transaction Rejected. Reverting changes ...
Anamitras-MacBook-Pro:project4 anamitradebnath$
```

Script successfully executing and delegating to the provided voter

Transaction hash: 0xb6b8c3321eeb0e909c0a1390b346b257c10030e3ccae64bc76aaf8d937193bf6

The screenshot displays the Remix IDE interface. On the left, the 'DEPLOY & RUN TRANSACTIONS' panel shows a list of deployed contracts for 'BALLOT AT 0x93f...c96cc'. The 'delegate' function is selected, showing its parameters: 'address' and 'value'. The 'Transaction' button is visible. The main workspace shows the Solidity code for the 'Ballot' contract, including the 'delegate' function. The right-hand 'Console' panel displays the transaction details, indicating a successful execution. The transaction hash is 0xb6b8c3321eeb0e909c0a1390b346b257c10030e3ccae64bc76aaf8d937193bf6. The console also shows the transaction cost (54928 gas) and the decoded output ({}).

## Winner Proposal

### Script

Winner.ts

### Script failing with wrong contract address

```
Ⓢ Anamitras-MacBook-Pro:project4 anamitradebnath$ npx ts-node --files ./scripts/Winner.ts 0x94245AC9f6E39373d3B3698753d47903bb1E0876
parameter's length = 1
/Users/anamitradebnath/TAMU/Study/2024_Web3_and_Web2/Encode EVM Solidity BootCamp 2024/week2/project4/node_modules/viem/utils/errors/getContractError.ts:72
  return new ContractFunctionExecutionError(cause as BaseError, {
         ^
ContractFunctionExecutionError: Address "0x94245AC9f6E39373d3B3698753d47903bb1E0876" is invalid.
    - Address must be a hex value of 20 bytes (40 hex characters).
    - Address must match its checksum counterpart.
```

### Script successfully executing and providing winning proposal name

```
Ⓢ Anamitras-MacBook-Pro:project4 anamitradebnath$ npx ts-node --files ./scripts/Winner.ts 0x94245AC9f6E39373d3B3698753d47903bb1E0240
parameter's length = 1
Winning Proposal Is: prop1
```