

Final Project

The following three screenshots are captures from the initial assignment of the final project, which involves building a blockchain.

```
Printed Release [optimized] target(s) in 1.29s
josef@josef-TULPAR-T7-V20-4:~/Masaüstü/rust_fina/substrate-node-template$ ./target/release/node-template --dev
2023-09-05 17:20:51 Substrate Node
2023-09-05 17:20:51 🚀 version 4.0.0-dev-41ad4a6c9d7
2023-09-05 17:20:51 ❤️ by Substrate DevHub <https://github.com/substrate-developer-hub>, 2017-2023
2023-09-05 17:20:51 📖 Chain specification: Development
2023-09-05 17:20:51 🏠 Node name: obsolete-sister-9933
2023-09-05 17:20:51 👤 Role: AUTHORITY
2023-09-05 17:20:51 🗄 Database: RocksDb at /tmp/substratePol4ne/chains/dev/db/full
2023-09-05 17:20:51 🛠 Initializing Genesis block/state (state: 0x19ba..b406, header-hash: 0x9543..b3ae)
2023-09-05 17:20:51 🌱 Loading GRANDPA authority set from genesis on what appears to be first startup.
2023-09-05 17:20:51 Using default protocol ID "sup" because none is configured in the chain specs
2023-09-05 17:20:51 🏠 Local node identity is: 12D3KooWFaNWDPENiqu7YRRcnP7mhPeZYGAYwEgWCJyxQikwVv9j
2023-09-05 17:20:51 🖥 Operating system: linux
2023-09-05 17:20:51 🖥 CPU architecture: x86_64
2023-09-05 17:20:51 🖥 Target environment: gnu
2023-09-05 17:20:51 🖥 CPU: 11th Gen Intel(R) Core(TM) i7-11800H @ 2.30GHz
2023-09-05 17:20:51 🖥 CPU cores: 8
2023-09-05 17:20:51 🖥 Memory: 15724MB
2023-09-05 17:20:51 🖥 Kernel: 6.2.0-32-generic
2023-09-05 17:20:51 🖥 Linux distribution: Ubuntu 22.04.3 LTS
2023-09-05 17:20:51 🖥 Virtual machine: no
2023-09-05 17:20:51 🏠 Highest known block at #0
2023-09-05 17:20:51 Running JSON-RPC server: addr=127.0.0.1:9944, allowed origins=["*"]
2023-09-05 17:20:51 🌱 Prometheus exporter started at 127.0.0.1:9615
2023-09-05 17:20:54 🌱 Starting consensus session on top of parent 0x9543c238a1044cd069fba6621b4eae2dce7f1a32d175d072d5
389266ad91b3ae
2023-09-05 17:20:54 📦 Prepared block for proposing at 1 (1 ms) [hash: 0xb042fd6a9a03b7e5e615337ab763f38ecbba599a2de8e
562b449d6231a94072; parent_hash: 0x9543..b3ae; extrinsics (1): [0x5340..f4c1]
2023-09-05 17:20:54 📦 Pre-sealed block for proposal at 1. Hash now 0x8c9cd98bfe190479393f14fe602fc0d896848226428f5561c
4eb7b2ea5d61a58. previouslv 0xb042fd6a9a03b7e5e615337ab763f38ecbba599a2de8e562b449d6231a94072.
```

```
Compiled successfully!

You can now view substrate-front-end-template in the browser.

Local:    http://localhost:8000/substrate-front-end-template
On Your Network:  http://192.168.1.40:8000/substrate-front-end-template

Note that the development build is not optimized.
To create a production build, use yarn build.

assets by path static/media/ 1.66 MiB
  assets by path static/media/*.svg 982 KiB 3 assets
  assets by path static/media/*.eot 230 KiB 3 assets
  assets by path static/media/*.ttf 230 KiB 3 assets
  assets by path static/media/*.woff 126 KiB 3 assets
  assets by path static/media/*.woff2 104 KiB
    asset static/media/brand-icons.278156e41e0ad908cf7f.woff2 53.2 KiB [emitted] [immutable] [from: node_modules/semantic-ui-css/themes/default/assets/fonts/brand-icons.woff2] (auxiliary name: main)
    + 2 assets
  asset static/media/flags.99f63ae7a743f21ab308.png 27.5 KiB [emitted] [immutable] [from: node_modules/semantic-ui-css/themes/default/assets/images/flags.png] (auxiliary name: main)
  asset static/js/bundle.js 8 MiB [emitted] (name: main) 1 related asset
  asset index.html 2.27 KiB [emitted]
  asset asset-manifest.json 2.1 KiB [emitted]
cached modules 6.64 MiB (javascript) 1.66 MiB (asset) 28.7 KiB (runtime) [cached] 2341 modules
webpack 5.76.1 compiled successfully in 1510 ms
```

localhost:8000/substrate-front-end-template

Substrate Node
Development
ws://127.0.0.1:9944
v4.0.0-dev-41ad4a6c9d7

Metadata
v14
Show Metadata

60
CURRENT BLOCK
3

58
FINALIZED BLOCK
2

Balances

Name	Address	Balance
alice	5GrwvaEF5oX26fz9cQpDW557CtERhPNeHXCpNoHGKutQY	1,152,920,503,370,926,388
alice_stash	5GNjgTPyNqANBUVMN1LPPrxFouWVoe2wNsmEoLctmZY	1,152,921,504,606,846,976
bob	5FHneW46xGXgs5mUiveU4bTyGBmstUqpZC92UhjJ694ty	1,152,921,504,606,846,976
bob_stash	5HpC9wBEELe5XCrbczpwG5TSKvedrBGCwqx1K1Q7uJSWfc	1,152,921,504,606,846,976
charlie	5FLSjC9HGRKvB9fEoY43koPnNmBmLbpXg2mp1hXc559Y	0
dave	5DAAnrj7VHTznn2AWBemMuyBwZW6FNFjdVXUeYum3PTXfY	1,000,000,000,000
eve	5HGjWaeFDfCkPjFQdVv2Msz2X0MktvgoEzCjG68kUMaw	0
ferdie	5CIPPeXPECbkjWCa6MjNokrgYjMqmKndvZrSnekmsK2DL	0

Transfer

1 Unit - 1000000000000

Transfer more than the existential amount for account with 0 balance

dave

To: 5DAAnrj7VHTznn2AWBemMuyBwZW6FNFjdVXUeYum3PTXfY

Upgrade

Upgrade Runtime

Wasm File

Gözet...

Dosya seçilmedi.

Upgrade

For more on GitHub

The following screenshot is capture from the second assignment of the final project, which involves simulating a substrate network.

```
Josef@josef-TULPAR-T7-V20-4: ~/Masauüstü/rust_fina/substrate-node-te...
/192.168.1.40/tcp/30334
2023-09-05 17:30:39 Idle (1 peers), best: #0 (0x17a8..80f0), finalized #0 (0x17a8..80f0)
, ↓ 0.7kiB/s ↑ 0.7kiB/s
2023-09-05 17:30:42 Imported #1 (0x8555..5a16)
2023-09-05 17:30:44 Idle (1 peers), best: #1 (0x8555..5a16), finalized #0 (0x17a8..80f0)
, ↓ 0.6kiB/s ↑ 0.5kiB/s
2023-09-05 17:30:48 Starting consensus session on top of parent 0x8555150b3ce2ebdfce
6e04740801d2e11a4c75c6ce5795f2f004b55915a16
2023-09-05 17:30:48 Prepared block for proposing at 2 (0 ms) [hash: 0xdedfb96e454959019c77986f857c1
9c77986f857c179e444c63a0236947276d9b081802b2378; parent_hash: 0x8555..5a16; extrinsics (1
): [0x43d7..fd96]
2023-09-05 17:30:48 Pre-sealed block for proposal at 2. Hash now 0xa2f2e59594993c08fbd
6fa52f0e5fdec8d5d3dbd3e0b5896a9f053e521f3, previously 0xdedfb96e454959019c77986f857c1
c79e444c63a0236947276d9b081802b2378.
2023-09-05 17:30:48 Imported #2 (0xa2f2..21f3)
2023-09-05 17:30:49 Idle (1 peers), best: #2 (0xa2f2..21f3), finalized #0 (0x17a8..80f0)
, ↓ 0.5kiB/s ↑ 0.5kiB/s
2023-09-05 17:30:54 Imported #3 (0x98a6..498a)
2023-09-05 17:30:54 Idle (1 peers), best: #3 (0x98a6..498a), finalized #0 (0x17a8..80f0)
, ↓ 0.7kiB/s ↑ 0.6kiB/s
2023-09-05 17:30:59 Idle (1 peers), best: #3 (0x98a6..498a), finalized #1 (0x8555..5a16)
, ↓ 0.4kiB/s ↑ 0.5kiB/s
2023-09-05 17:31:00 Starting consensus session on top of parent 0x98a6532d0562bf5c390
ed782061d12d6754f2e47ec7a54ed1768e311923498a
2023-09-05 17:31:00 Prepared block for proposing at 4 (0 ms) [hash: 0xd279fd4d1832e5b0
4eada7e23f0dbcb04b80edec05fbdb28034fca5f9f01afco; parent_hash: 0x98a6..498a; extrinsics (1
): [0x3d5..7750]
2023-09-05 17:31:00 Pre-sealed block for proposal at 4. Hash now 0xf77a169fadfb10e5405
276bc5cbbde517c2d2a8bc18af9ce175b0d1f90253069, previously 0xd279fd4d1832e5b04eada7e23f0db
c40b80edec05fbdb28034fca5f9f01afco.
2023-09-05 17:31:00 Imported #4 (0xf77a..3069)
2023-09-05 17:31:04 Idle (1 peers), best: #4 (0xf77a..3069), finalized #2 (0xa2f2..21f3)
, ↓ 0.5kiB/s ↑ 0.7kiB/s
2023-09-05 17:31:06 Imported #5 (0x4619..024e)
2023-09-05 17:31:09 Idle (1 peers), best: #5 (0x4619..024e), finalized #3 (0x98a6..498a)
, ↓ 0.6kiB/s ↑ 0.5kiB/s
2023-09-05 17:31:12 Starting consensus session on top of parent 0x461971f5cc98bcdc3559
5f1e9349819026b04eb3307b382da11c153024e
2023-09-05 17:31:12 Prepared block for proposing at 6 (0 ms) [hash: 0x4c4b2b7a3d3de0c4
695b6afddcd4415b50fd1630e049bdf3cc2f949f7413f43; parent_hash: 0x4619..024e; extrinsics (1
): [0xf1b..4989]
2023-09-05 17:31:12 Pre-sealed block for proposal at 6. Hash now 0xbcb12f4a34fb25d48e59
a593dfac349fa8c88b4b56c93e88ee32b374446d0, previously 0x4c4b2b7a3d3de0c4695b6afddcd4
415b50fd1630e049bdf3cc2f949f7413f43.
2023-09-05 17:31:12 Imported #6 (0xbcb12..46d0)
2023-09-05 17:31:14 Idle (1 peers), best: #6 (0xbcb12..46d0), finalized #4 (0xf77a..3069)
, ↓ 0.6kiB/s ↑ 0.7kiB/s
Josef@josef-TULPAR-T7-V20-4: ~/Masauüstü/rust_fina/substrate-node-template
2023-09-05 17:30:38 CPU cores: 8
2023-09-05 17:30:38 Memory: 15724MB
2023-09-05 17:30:38 Kernel: 6.2.0-32-generic
2023-09-05 17:30:38 Linux distribution: Ubuntu 22.04.3 LTS
2023-09-05 17:30:38 Virtual machine: no
2023-09-05 17:30:38 Highest known block at #0
2023-09-05 17:30:38 Running 350N-RPC server: addr=127.0.0.1:9934, allowed origins=["http://localhost:", "http:
://127.0.0.1:", "https://localhost:", "https://127.0.0.1:", "https://polkadot.js.org"]
2023-09-05 17:30:38 discovered: 1203KoomEyoppNCUX8Yx66ov9f3nrlXwccwDDUA2k36vnc6lDEp /fp4/192.168.1.40/tcp/3033
3
2023-09-05 17:30:42 Starting consensus session on top of parent 0x17a844f7413484b87c1eb2e2247ad834015da3f0d
f9d39fb3d1ce7ae3380f0
2023-09-05 17:30:42 Prepared block for proposing at 1 (0 ms) [hash: 0xc215604b2f2e92cb53996c1bce2b0d147426f4
cd400be1919857a66df10408c7; parent_hash: 0x17a8..80f0; extrinsics (1): [0xaf15..141f]
2023-09-05 17:30:42 Pre-sealed block for proposal at 1. Hash now 0x8555150b3ce2ebdfce6e04740801d2e11a4c75
c6ce5795f2f004b55915a16, previously 0xc215604b2f2e92cb53996c1bce2b0d147426f4cd400be1919857a66df10408c7.
2023-09-05 17:30:42 Imported #1 (0x8555..5a16)
2023-09-05 17:30:43 Idle (1 peers), best: #1 (0x8555..5a16), finalized #0 (0x17a8..80f0), ↓ 1.1kiB/s ↑ 1.2kiB/
s
2023-09-05 17:30:48 Imported #2 (0xa2f2..21f3)
2023-09-05 17:30:48 Idle (1 peers), best: #2 (0xa2f2..21f3), finalized #0 (0x17a8..80f0), ↓ 0.6kiB/s ↑ 0.5kiB/
s
2023-09-05 17:30:48 Idle (1 peers), best: #2 (0xa2f2..21f3), finalized #0 (0x17a8..80f0), ↓ 0.5kiB/s ↑ 0.5kiB/
s
2023-09-05 17:30:53 Idle (1 peers), best: #2 (0xa2f2..21f3), finalized #0 (0x17a8..80f0), ↓ 0.5kiB/s ↑ 0.5kiB/
s
2023-09-05 17:30:54 Starting consensus session on top of parent 0xa2f2e59594993c08fbd6fa52f0e5fdec8d5d3dbd
3e0b5896a9f053e521f3
2023-09-05 17:30:54 Prepared block for proposing at 3 (0 ms) [hash: 0xde77c173c1d438b359b973345ea43e4c522f33
efcd5c979e866e05a2b5129bdc; parent_hash: 0xa2f2..21f3; extrinsics (1): [0xe70c..1ac5]
2023-09-05 17:30:54 Pre-sealed block for proposal at 3. Hash now 0x98a6532d0562bf5c390ed782061d12d6754f2e47
ec7a54ed1768e311923498a, previously 0xde77c173c1d438b359b973345ea43e4c522f33efcd5c979e866e05a2b5129bdc.
2023-09-05 17:30:54 Imported #3 (0x98a6..498a)
2023-09-05 17:30:58 Idle (1 peers), best: #3 (0x98a6..498a), finalized #1 (0x8555..5a16), ↓ 0.6kiB/s ↑ 0.6kiB/
s
2023-09-05 17:31:00 Imported #4 (0xf77a..3069)
2023-09-05 17:31:03 Idle (1 peers), best: #4 (0xf77a..3069), finalized #2 (0xa2f2..21f3), ↓ 0.7kiB/s ↑ 0.5kiB/
s
2023-09-05 17:31:06 Starting consensus session on top of parent 0xf77a169fadfb10e5405276bc5cbbde517c2d2a8bc1
8af9ce175b0d1f90253069
2023-09-05 17:31:06 Prepared block for proposing at 5 (0 ms) [hash: 0x13ed05a2ea89f4aa33aa02e863fdd98a1db61
8ebe9133b38b5d9c4933703c80; parent_hash: 0xf77a..3069; extrinsics (1): [0x2b2c..92fb]
2023-09-05 17:31:06 Pre-sealed block for proposal at 5. Hash now 0x461971f5cc98bcdc35595f1e9349819026b04eb
3307b382da11c153024e, previously 0x13ed05a2ea89f4aa33aa02e863fdd98a1db618ebe9133b38b5d9c4933703c80.
2023-09-05 17:31:08 Imported #5 (0x4619..024e)
2023-09-05 17:31:08 Idle (1 peers), best: #5 (0x4619..024e), finalized #3 (0x98a6..498a), ↓ 0.6kiB/s ↑ 0.6kiB/
s
2023-09-05 17:31:12 Imported #6 (0xbcb12..46d0)
2023-09-05 17:31:13 Idle (1 peers), best: #6 (0xbcb12..46d0), finalized #4 (0xf77a..3069), ↓ 0.6kiB/s ↑ 0.5kiB/
s
```

The following three screenshots are captures from the third assignment of the final project, which involves adding trusted nodes to a network.

```
keystore password:
josefjosef-TULPAR-T7-V20-4:~/nasasitu/rust_flna/substrate-node-template$ ls /tmp/node01/chains/local_testnet/keystore
61757261782343ac98cc6f61e1c1352e5ea9626ae279e5f4cffe5211b30c9e7f4f75d 6772616e6f6730f839a71af2b37180eae03d74de489f20cebc879f1f24d3736677309420
josefjosef-TULPAR-T7-V20-4:~/nasasitu/rust_flna/substrate-node-template$ ./target/release/node-template --base-path /tmp/node01 --chain ./customSpecRaw.json --port 30333 --rpc-port 9933
--telemetry-url "wss://telemetry.polkadot.io/submit/0" --validator --rpc-methods Unsafe --name MyNode01 --password-Interactive
keystore password:
2023-09-05 18:36:59 Substrate Node
2023-09-05 18:36:59 version 4.0.0-dev-41ad4a6c9d7
2023-09-05 18:36:59 by Substrate DevHub ->https://github.com/substrate-developer-hubs, 2017-2023
2023-09-05 18:36:59 chain specification: My Local Custom Testnet
2023-09-05 18:36:59 Node name: MyNode01
2023-09-05 18:36:59 Role: AUTHORITY
2023-09-05 18:36:59 Database: Rocksdb at /tmp/node01/chains/local_testnet/db/full
2023-09-05 18:36:59 Using default protocol to "sup" because none is configured in the chain specs
2023-09-05 18:36:59 Local node identity is: 12D3KoonCTQtxonZDqrKqSgU1UM9F3tSNx5dyt5XLxf53TdFfhu
2023-09-05 18:36:59 Operating system: linux
2023-09-05 18:36:59 CPU architecture: x86_64
2023-09-05 18:36:59 Target environment: gnu
2023-09-05 18:36:59 CPU: 11th Gen Intel(R) Core(TM) i7-11800H @ 2.30GHz
2023-09-05 18:36:59 CPU cores: 8
2023-09-05 18:36:59 Memory: 15724MB
2023-09-05 18:36:59 Kernel: 6.2.0-32-generic
2023-09-05 18:36:59 Linux distribution: Ubuntu 22.04.3 LTS
2023-09-05 18:36:59 Virtual machine: no
2023-09-05 18:36:59 Highest known block at #0
2023-09-05 18:36:59 Running JSON-RPC server: addr=127.0.0.1:9933, allowed origins=["http://localhost:*", "http://127.0.0.1:*", "https://localhost:*", "https://127.0.0.1:*", "https://polkadot.js.org"]
2023-09-05 18:36:59 Prometheus exporter started at 127.0.0.1:9615
2023-09-05 18:37:09 Idle (0 peers), best: #0 (0x0052.246e), finalized #0 (0x0052.246e), 1.0.7kib/s 1.0.7kib/s
2023-09-05 18:37:09 Idle (0 peers), best: #0 (0x0052.246e), finalized #0 (0x0052.246e), 1.0.7kib/s 1.0.7kib/s
2023-09-05 18:37:14 Idle (0 peers), best: #0 (0x0052.246e), finalized #0 (0x0052.246e), 1.0.7kib/s 1.0.7kib/s
2023-09-05 18:37:19 Idle (0 peers), best: #0 (0x0052.246e), finalized #0 (0x0052.246e), 1.0.7kib/s 1.0.7kib/s
2023-09-05 18:37:19 Error while dialing /dns/telemetry.polkadot.io/tcp/443/x-parity-wss/x2FSubmtK2F: Custom { kind: Other, error: Timeout }
2023-09-05 18:37:29 Idle (0 peers), best: #0 (0x0052.246e), finalized #0 (0x0052.246e), 1.0.7kib/s 1.0.7kib/s
2023-09-05 18:37:34 Idle (0 peers), best: #0 (0x0052.246e), finalized #0 (0x0052.246e), 1.0.7kib/s 1.0.7kib/s
2023-09-05 18:37:39 Idle (0 peers), best: #0 (0x0052.246e), finalized #0 (0x0052.246e), 1.0.7kib/s 1.0.7kib/s
2023-09-05 18:37:44 Idle (0 peers), best: #0 (0x0052.246e), finalized #0 (0x0052.246e), 1.0.7kib/s 1.0.7kib/s
2023-09-05 18:37:49 Idle (0 peers), best: #0 (0x0052.246e), finalized #0 (0x0052.246e), 1.0.7kib/s 1.0.7kib/s
2023-09-05 18:37:54 Idle (0 peers), best: #0 (0x0052.246e), finalized #0 (0x0052.246e), 1.0.7kib/s 1.0.7kib/s
2023-09-05 18:37:59 Idle (0 peers), best: #0 (0x0052.246e), finalized #0 (0x0052.246e), 1.0.7kib/s 1.0.7kib/s
2023-09-05 18:38:04 Idle (0 peers), best: #0 (0x0052.246e), finalized #0 (0x0052.246e), 1.0.7kib/s 1.0.7kib/s
2023-09-05 18:38:09 Idle (0 peers), best: #0 (0x0052.246e), finalized #0 (0x0052.246e), 1.0.7kib/s 1.0.7kib/s
2023-09-05 18:38:11 discovered: 12D3KoonKJENk13aQqGfL95vVq2ubRkJPkHvXYUUCWJmQ1RPPP /ip4/192.168.1.40/tcp/30334
2023-09-05 18:38:14 Idle (1 peers), best: #0 (0x0052.246e), finalized #0 (0x0052.246e), 1.0.7kib/s 1.0.7kib/s
2023-09-05 18:38:19 Idle (0 peers), best: #0 (0x0052.246e), finalized #0 (0x0052.246e), 1.0.7kib/s 1.0.7kib/s
2023-09-05 18:38:24 Idle (0 peers), best: #0 (0x0052.246e), finalized #0 (0x0052.246e), 1.0.7kib/s 1.0.7kib/s
2023-09-05 18:38:29 Idle (0 peers), best: #0 (0x0052.246e), finalized #0 (0x0052.246e), 1.0.7kib/s 1.0.7kib/s
2023-09-05 18:38:34 Idle (0 peers), best: #0 (0x0052.246e), finalized #0 (0x0052.246e), 1.0.7kib/s 1.0.7kib/s
2023-09-05 18:38:39 Idle (0 peers), best: #0 (0x0052.246e), finalized #0 (0x0052.246e), 1.0.7kib/s 1.0.7kib/s
2023-09-05 18:38:44 Idle (0 peers), best: #0 (0x0052.246e), finalized #0 (0x0052.246e), 1.0.7kib/s 1.0.7kib/s
2023-09-05 18:38:49 Idle (0 peers), best: #0 (0x0052.246e), finalized #0 (0x0052.246e), 1.0.7kib/s 1.0.7kib/s
2023-09-05 18:38:54 Idle (0 peers), best: #0 (0x0052.246e), finalized #0 (0x0052.246e), 1.0.7kib/s 1.0.7kib/s
```

```
2023-09-05 18:38:14 Idle (1 peers), best: #0 (0x0052.246e), finalized #0 (0x0052.246e), 1.0.7kib/s 1.0.7kib/s
2023-09-05 18:38:19 Idle (0 peers), best: #0 (0x0052.246e), finalized #0 (0x0052.246e), 1.0.7kib/s 1.0.7kib/s
2023-09-05 18:38:24 Idle (0 peers), best: #0 (0x0052.246e), finalized #0 (0x0052.246e), 1.0.7kib/s 1.0.7kib/s
2023-09-05 18:38:29 Idle (0 peers), best: #0 (0x0052.246e), finalized #0 (0x0052.246e), 1.0.7kib/s 1.0.7kib/s
2023-09-05 18:38:34 Idle (0 peers), best: #0 (0x0052.246e), finalized #0 (0x0052.246e), 1.0.7kib/s 1.0.7kib/s
2023-09-05 18:38:39 Idle (0 peers), best: #0 (0x0052.246e), finalized #0 (0x0052.246e), 1.0.7kib/s 1.0.7kib/s
2023-09-05 18:38:44 Idle (0 peers), best: #0 (0x0052.246e), finalized #0 (0x0052.246e), 1.0.7kib/s 1.0.7kib/s
2023-09-05 18:38:49 Idle (0 peers), best: #0 (0x0052.246e), finalized #0 (0x0052.246e), 1.0.7kib/s 1.0.7kib/s
2023-09-05 18:38:54 Idle (0 peers), best: #0 (0x0052.246e), finalized #0 (0x0052.246e), 1.0.7kib/s 1.0.7kib/s
2023-09-05 18:39:04 Idle (0 peers), best: #0 (0x0052.246e), finalized #0 (0x0052.246e), 1.0.7kib/s 1.0.7kib/s
2023-09-05 18:39:09 Idle (0 peers), best: #0 (0x0052.246e), finalized #0 (0x0052.246e), 1.0.7kib/s 1.0.7kib/s
2023-09-05 18:39:14 Idle (0 peers), best: #0 (0x0052.246e), finalized #0 (0x0052.246e), 1.0.7kib/s 1.0.7kib/s
2023-09-05 18:39:19 Idle (0 peers), best: #0 (0x0052.246e), finalized #0 (0x0052.246e), 1.0.7kib/s 1.0.7kib/s
2023-09-05 18:39:24 Idle (0 peers), best: #0 (0x0052.246e), finalized #0 (0x0052.246e), 1.0.7kib/s 1.0.7kib/s
2023-09-05 18:39:29 Idle (0 peers), best: #0 (0x0052.246e), finalized #0 (0x0052.246e), 1.0.7kib/s 1.0.7kib/s
2023-09-05 18:39:34 Idle (0 peers), best: #0 (0x0052.246e), finalized #0 (0x0052.246e), 1.0.7kib/s 1.0.7kib/s
2023-09-05 18:39:39 Idle (0 peers), best: #0 (0x0052.246e), finalized #0 (0x0052.246e), 1.0.7kib/s 1.0.7kib/s
2023-09-05 18:39:44 Idle (0 peers), best: #0 (0x0052.246e), finalized #0 (0x0052.246e), 1.0.7kib/s 1.0.7kib/s
2023-09-05 18:39:49 Idle (0 peers), best: #0 (0x0052.246e), finalized #0 (0x0052.246e), 1.0.7kib/s 1.0.7kib/s
2023-09-05 18:39:54 Idle (0 peers), best: #0 (0x0052.246e), finalized #0 (0x0052.246e), 1.0.7kib/s 1.0.7kib/s
2023-09-05 18:40:04 Idle (0 peers), best: #0 (0x0052.246e), finalized #0 (0x0052.246e), 1.0.7kib/s 1.0.7kib/s
2023-09-05 18:40:09 Idle (0 peers), best: #0 (0x0052.246e), finalized #0 (0x0052.246e), 1.0.7kib/s 1.0.7kib/s
2023-09-05 18:40:14 Idle (0 peers), best: #0 (0x0052.246e), finalized #0 (0x0052.246e), 1.0.7kib/s 1.0.7kib/s
2023-09-05 18:40:19 Idle (0 peers), best: #0 (0x0052.246e), finalized #0 (0x0052.246e), 1.0.7kib/s 1.0.7kib/s
2023-09-05 18:40:24 Idle (0 peers), best: #0 (0x0052.246e), finalized #0 (0x0052.246e), 1.0.7kib/s 1.0.7kib/s
2023-09-05 18:40:29 Idle (0 peers), best: #0 (0x0052.246e), finalized #0 (0x0052.246e), 1.0.7kib/s 1.0.7kib/s
2023-09-05 18:40:34 Idle (1 peers), best: #0 (0x0052.246e), finalized #0 (0x0052.246e), 1.3kib/s 1.2kib/s
2023-09-05 18:40:39 Idle (1 peers), best: #0 (0x0052.246e), finalized #0 (0x0052.246e), 1.5kib/s 1.5kib/s
2023-09-05 18:40:44 Idle (1 peers), best: #0 (0x0052.246e), finalized #0 (0x0052.246e), 1.5kib/s 1.5kib/s
2023-09-05 18:40:49 Idle (1 peers), best: #0 (0x0052.246e), finalized #0 (0x0052.246e), 1.5kib/s 1.5kib/s
2023-09-05 18:40:54 Idle (1 peers), best: #0 (0x0052.246e), finalized #0 (0x0052.246e), 1.5kib/s 1.5kib/s
2023-09-05 18:40:59 Idle (1 peers), best: #0 (0x0052.246e), finalized #0 (0x0052.246e), 1.4kib/s 1.4kib/s
2023-09-05 18:41:04 Idle (1 peers), best: #0 (0x0052.246e), finalized #0 (0x0052.246e), 1.4kib/s 1.5kib/s
2023-09-05 18:41:09 Idle (1 peers), best: #0 (0x0052.246e), finalized #0 (0x0052.246e), 1.2kib/s 1.2kib/s
2023-09-05 18:41:14 Idle (1 peers), best: #0 (0x0052.246e), finalized #0 (0x0052.246e), 1.2kib/s 1.3kib/s
2023-09-05 18:41:19 Idle (1 peers), best: #0 (0x0052.246e), finalized #0 (0x0052.246e), 1.2kib/s 1.2kib/s
2023-09-05 18:41:24 Idle (1 peers), best: #0 (0x0052.246e), finalized #0 (0x0052.246e), 1.2kib/s 1.3kib/s
2023-09-05 18:41:29 Idle (1 peers), best: #0 (0x0052.246e), finalized #0 (0x0052.246e), 1.2kib/s 1.2kib/s
2023-09-05 18:41:34 Idle (1 peers), best: #0 (0x0052.246e), finalized #0 (0x0052.246e), 1.3kib/s 1.3kib/s
2023-09-05 18:41:39 Idle (1 peers), best: #0 (0x0052.246e), finalized #0 (0x0052.246e), 1.2kib/s 1.2kib/s
2023-09-05 18:41:44 Idle (1 peers), best: #0 (0x0052.246e), finalized #0 (0x0052.246e), 1.2kib/s 1.2kib/s
2023-09-05 18:41:49 Idle (1 peers), best: #0 (0x0052.246e), finalized #0 (0x0052.246e), 1.2kib/s 1.2kib/s
2023-09-05 18:41:54 Idle (1 peers), best: #0 (0x0052.246e), finalized #0 (0x0052.246e), 1.2kib/s 1.2kib/s
2023-09-05 18:41:59 Idle (1 peers), best: #0 (0x0052.246e), finalized #0 (0x0052.246e), 1.2kib/s 1.2kib/s
2023-09-05 18:42:04 Idle (1 peers), best: #0 (0x0052.246e), finalized #0 (0x0052.246e), 1.3kib/s 1.3kib/s
2023-09-05 18:42:09 Idle (1 peers), best: #0 (0x0052.246e), finalized #0 (0x0052.246e), 1.2kib/s 1.2kib/s
2023-09-05 18:42:14 Idle (1 peers), best: #0 (0x0052.246e), finalized #0 (0x0052.246e), 1.2kib/s 1.2kib/s
2023-09-05 18:42:19 Idle (1 peers), best: #0 (0x0052.246e), finalized #0 (0x0052.246e), 1.2kib/s 1.2kib/s
2023-09-05 18:42:24 Idle (1 peers), best: #0 (0x0052.246e), finalized #0 (0x0052.246e), 1.2kib/s 1.2kib/s
2023-09-05 18:42:29 Idle (1 peers), best: #0 (0x0052.246e), finalized #0 (0x0052.246e), 1.2kib/s 1.2kib/s
```



```

2023-09-05 18:38:11 Target environment: gnu
2023-09-05 18:38:11 CPU: 11th Gen Intel(R) Core(TM) i7-11800H @ 2.30GHz
2023-09-05 18:38:11 CPU cores: 8
2023-09-05 18:38:11 Memory: 15724MB
2023-09-05 18:38:11 Kernel: 6.2.0-32-generic
2023-09-05 18:38:11 Linux distribution: Ubuntu 22.04.3 LTS
2023-09-05 18:38:11 Virtual machine: no
2023-09-05 18:38:11 Highest known block at #0
2023-09-05 18:38:11 Running JSON-RPC server: addr=127.0.0.1:9934, allowed origins=["http://localhost:*", "http://127.0.0.1:*", "https://localhost:*", "https://127.0.0.1:*", "https://polkadot.js.org"]
2023-09-05 18:38:11 The bootnode you want to connect to at /ip4/127.0.0.1/tcp/30333/p2p/1203KooKCTQutxonZDqrkqSg61UM9F3lSNxSdytSLXf53TdfFhu provided a different peer ID '1203KooKCTQutxonZDqrkqSg61UM9F3lSNxSdytSLXf53TdfFhu' than the one you expect '1203KooKCTQutxonZDqrkqSg61UM9F3lSNxSdytSLXf53TdfFhu'
2023-09-05 18:38:11 discovered: 1203KooKCTQutxonZDqrkqSg61UM9F3lSNxSdytSLXf53TdfFhu /ip4/192.168.1.40/tcp/30333
2023-09-05 18:38:16 Idle (1 peers), best: #0 (0x0052-24e6), finalized #0 (0x0052-24e6), ↓ 0.9kIB/s ↑ 0.9kIB/s
2023-09-05 18:38:16 Usernames: Josef-TULPAR-T7-V20-4: /home/josef/Masa0st0/rust_fina/substrate-node-template /target/release/node-template --base-path /tmp/node02 --chain ./customSpecRaw.json --port 30334 --rpc-port 9934 --telemetry-url 'wss://telemetry.polkadot.io/submit/0' --validator --name MyNode02 --bootnodes /ip4/127.0.0.1/tcp/30333/p2p/1203KooKCTQutxonZDqrkqSg61UM9F3lSNxSdytSLXf53TdfFhu --password-interactive
error: invalid value ' /ip4/127.0.0.1/tcp/30333/p2p/1/1203KooKCTQutxonZDqrkqSg61UM9F3lSNxSdytSLXf53TdfFhu' for '--bootnodes <ADDR>...': failed to parse: unexpected end of file

For more information, try '--help'.
Usernames: Josef-TULPAR-T7-V20-4: /home/josef/Masa0st0/rust_fina/substrate-node-template /target/release/node-template --base-path /tmp/node02 --chain ./customSpecRaw.json --port 30334 --rpc-port 9934 --telemetry-url 'wss://telemetry.polkadot.io/submit/0' --validator --name MyNode02 --bootnodes /ip4/127.0.0.1/tcp/30333/p2p/1203KooKCTQutxonZDqrkqSg61UM9F3lSNxSdytSLXf53TdfFhu --password-interactive
Keystore password:
2023-09-05 18:40:29 Substrate Node
2023-09-05 18:40:29 version 4.0.0-dev-41ad46c9d7
2023-09-05 18:40:29 by Substrate DevHub <https://github.com/substrate-developer-hub>, 2017-2023
2023-09-05 18:40:29 Chain specification: My Local Custom Testnet
2023-09-05 18:40:29 Node name: MyNode02
2023-09-05 18:40:29 Role: AUTHORITY
2023-09-05 18:40:29 Database: RocksDb at /tmp/node02/chains/local_testnet/db/full
2023-09-05 18:40:29 Using default protocol ID "sup" because none is configured in the chain specs
2023-09-05 18:40:29 Local node identity is: 1203KooKCTQutxonZDqrkqSg61UM9F3lSNxSdytSLXf53TdfFhu
2023-09-05 18:40:29 CPU architecture: x86_64
2023-09-05 18:40:29 Target environment: gnu
2023-09-05 18:40:29 CPU: 11th Gen Intel(R) Core(TM) i7-11800H @ 2.30GHz
2023-09-05 18:40:29 CPU cores: 8
2023-09-05 18:40:29 Memory: 15724MB
2023-09-05 18:40:29 Kernel: 6.2.0-32-generic
2023-09-05 18:40:29 Linux distribution: Ubuntu 22.04.3 LTS
2023-09-05 18:40:29 Virtual machine: no
2023-09-05 18:40:29 Highest known block at #0
2023-09-05 18:40:29 Running JSON-RPC server: addr=127.0.0.1:9934, allowed origins=["http://localhost:*", "http://127.0.0.1:*", "https://localhost:*", "https://127.0.0.1:*", "https://polkadot.js.org"]
2023-09-05 18:40:29 discovered: 1203KooKCTQutxonZDqrkqSg61UM9F3lSNxSdytSLXf53TdfFhu /ip4/192.168.1.40/tcp/30333
2023-09-05 18:40:34 Idle (1 peers), best: #0 (0x0052-24e6), finalized #0 (0x0052-24e6), ↓ 1.2kIB/s ↑ 1.3kIB/s
2023-09-05 18:40:34 Idle (1 peers), best: #0 (0x0052-24e6), finalized #0 (0x0052-24e6), ↓ 0.5kIB/s ↑ 0.5kIB/s
2023-09-05 18:40:44 Idle (1 peers), best: #0 (0x0052-24e6), finalized #0 (0x0052-24e6), ↓ 0.5kIB/s ↑ 0.5kIB/s
2023-09-05 18:40:49 Idle (1 peers), best: #0 (0x0052-24e6), finalized #0 (0x0052-24e6), ↓ 0.5kIB/s ↑ 0.5kIB/s
2023-09-05 18:40:49 Error while dialing /dns/telemetry.polkadot.io/tcp/443/x-parity-wss/%2Fsubmit%2F: Custom { kind: Other, error: Timeout }
2023-09-05 18:40:54 Idle (1 peers), best: #0 (0x0052-24e6), finalized #0 (0x0052-24e6), ↓ 0.5kIB/s ↑ 0.5kIB/s
2023-09-05 18:40:54 Idle (1 peers), best: #0 (0x0052-24e6), finalized #0 (0x0052-24e6), ↓ 0.5kIB/s ↑ 0.5kIB/s
2023-09-05 18:40:54 Idle (1 peers), best: #0 (0x0052-24e6), finalized #0 (0x0052-24e6), ↓ 0.5kIB/s ↑ 0.5kIB/s

```

The last screenshot is from 8th assignment of the project, which involves smart contracts.

```

Josef@josef-TULPAR-T7-V20-4: ~
josef@josef-TULPAR-T7-V20-4:~$ substrate-contracts-node --log info,runtime:contracts=debug 2>&1
2023-09-05 19:53:07.008 INFO main sc_cli:runner: Substrate Contracts Node
2023-09-05 19:53:07.008 INFO main sc_cli:runner: version 0.31.0-c8863fe08b7
2023-09-05 19:53:07.008 INFO main sc_cli:runner: Chain specification: Development
2023-09-05 19:53:07.008 INFO main sc_cli:runner: Node name: obolsant-spoon-8863
2023-09-05 19:53:07.008 INFO main sc_cli:runner: Role: AUTHORITY
2023-09-05 19:53:07.008 INFO main sc_cli:runner: Database: ParityDb at /tmp/substrate18k70t/chains/d/sdev/paritydb/full
2023-09-05 19:53:07.366 INFO main sc_service:client:client: Initializing Genesis block/state (state: 0x089a-410d, header-hash: 0x152d-60f6)
2023-09-05 19:53:07.367 INFO main sub-libp2p: Local node identity is: 1203KooKCTQutxonZDqrkqSg61UM9F3lSNxSdytSLXf53TdfFhu
2023-09-05 19:53:07.692 INFO main sc_sysinfo: Operating system: linux
2023-09-05 19:53:07.692 INFO main sc_sysinfo: CPU architecture: x86_64
2023-09-05 19:53:07.692 INFO main sc_sysinfo: Target environment: gnu
2023-09-05 19:53:07.692 INFO main sc_sysinfo: CPU: 11th Gen Intel(R) Core(TM) i7-11800H @ 2.30GHz
2023-09-05 19:53:07.692 INFO main sc_sysinfo: CPU cores: 8
2023-09-05 19:53:07.692 INFO main sc_sysinfo: Memory: 15724MB
2023-09-05 19:53:07.692 INFO main sc_sysinfo: Kernel: 6.2.0-32-generic
2023-09-05 19:53:07.692 INFO main sc_sysinfo: Linux distribution: Ubuntu 22.04.3 LTS
2023-09-05 19:53:07.692 INFO main sc_sysinfo: Virtual machine: no
2023-09-05 19:53:07.692 INFO main sc_service:builder: Highest known block at #0
2023-09-05 19:53:07.692 INFO main sc_rpc_server: Running JSON-RPC server: addr=127.0.0.1:9944, allowed origins=["*"]
2023-09-05 19:53:07.692 INFO tokio-runtime-worker substrate_prometheus_endpoint: Prometheus exporter started at 127.0.0.1:9615
2023-09-05 19:53:12.692 INFO tokio-runtime-worker substrate: Idle (0 peers), best: #0 (0x152d-60f6), finalized #0 (0x152d-60f6), ↓ 0 ↑ 0
2023-09-05 19:53:17.694 INFO tokio-runtime-worker substrate: Idle (0 peers), best: #0 (0x152d-60f6), finalized #0 (0x152d-60f6), ↓ 0 ↑ 0
2023-09-05 19:53:17.696 INFO tokio-runtime-worker jsonrpsee_server:server: Accepting new connection 1/100
2023-09-05 19:53:17.697 INFO tokio-runtime-worker jsonrpsee_server:server: Accepting new connection 2/100
2023-09-05 19:53:22.694 INFO tokio-runtime-worker substrate: Idle (0 peers), best: #0 (0x152d-60f6), finalized #0 (0x152d-60f6), ↓ 0 ↑ 0
2023-09-05 19:53:27.694 INFO tokio-runtime-worker substrate: Idle (0 peers), best: #0 (0x152d-60f6), finalized #0 (0x152d-60f6), ↓ 0 ↑ 0

dispatch_info: DispatchInfo { weight: Weight { ref_time: 3602408904, proof_size: 9095 }, class: Normal, pays_fee: Yes }

josef@josef-TULPAR-T7-V20-4:~/Masa0st0/rust_fina/smart_Contracts/Flipper$ cargo contract call --contract $INSTANTIATED_CONTRACT_ADDRESS --message get --suri //Alice --dry-run
error: The argument '--contract <contract>' requires a value but none was supplied

For more information try '--help'
josef@josef-TULPAR-T7-V20-4:~/Masa0st0/rust_fina/smart_Contracts/Flipper$ cargo contract call --contract 5GH2FgaQqlvmMae7rcKuB2z9Up4XbF6o3jHdFCwGyD4b65B --message get --suri //Alice --dry-run
Result Success!
Reverted false
Data Tuple(Tuple { ident: Some("Ok"), values: [Bool(false)] })
josef@josef-TULPAR-T7-V20-4:~/Masa0st0/rust_fina/smart_Contracts/Flipper$ cargo contract call --contract 5GH2FgaQqlvmMae7rcKuB2z9Up4XbF6o3jHdFCwGyD4b65B --message flip --suri //Alice --dry-run
Success! Gas required estimated at Weight(ref_time: 820353896, proof_size: 29459)
Confirm transaction details: (skip with --skip-confirm)
Message flip
Args
Gas limit Weight(ref_time: 820353896, proof_size: 29459)
Submit? (Y/n): y
Events
Event Balances → Withdraw
who: 5GRwvaEF5zXb26Fz9rcqDpDWS57CtERHpnHhXCPNoHGKutQY
amount: 124.414154UNIT
Event Contracts → Called
caller: Signed(5GRwvaEF5zXb26Fz9rcqDpDWS57CtERHpnHhXCPNoHGKutQY)
contract: 5GH2FgaQqlvmMae7rcKuB2z9Up4XbF6o3jHdFCwGyD4b65B
Event TransactionPayment → TransactionFeePaid
who: 5GRwvaEF5zXb26Fz9rcqDpDWS57CtERHpnHhXCPNoHGKutQY
actual_fee: 124.414154UNIT
tip: 0UNIT
Event System → ExtrinsicSuccess
dispatch_info: DispatchInfo { weight: Weight { ref_time: 1762010896, proof_size: 19881 }, class: Normal, pays_fee: Yes }
josef@josef-TULPAR-T7-V20-4:~/Masa0st0/rust_fina/smart_Contracts/Flipper$

```