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Komhar Challenge Sprint
(Oct 15 - Oct 31)

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1. Introduction

Komhar consulting is a startup engaged in consulting, development and integration of blockchain supported software solutions. This document is a part of its internship program for Winter Internship 2017.

The document has guidelines and links to content, literature and blogs. Komhar doesn't accept any liability on the content on the third party links used, these are placed in the document as a pure guidelines enable candidates find help for services like github, ethereum blockchain explorers and **testnet** wallets. All the documentation available in the public domain. The candidate is free and is encouraged to leverage alternative sources as well to get help or develop understanding of the platform for the challenge.

PLEASE ENSURE YOU ARE USING THE KOVAN TESTNET WALLETS AND TESTNET FUNDS WHICH DO NOT HAVE ANY MONETARY VALUE. KOMHAR DOES NOT ACCEPT LIABILITY IF YOU MISTAKENLY CONNECT TO ETHEREUM PRODUCTION NETWORK AND WORK WITH REAL ETHER MONEY.

The sprint will follow a well defined timeline.

2. System and Infrastructure

Komhar will have a recommended setup for the challenge and factor in the time as a task to build up that setup. The challenge needs a windows/linux system to be able to run. The choice of platform for Komhar is Ubuntu 16.04 on intel x86-64 or AMD 64 or higher.

3. User Story

The User story for the sprint challenge:

As a participant of the Komhar Winter Internship 2017, participant will create a local environment for development of smart contract and deploy simple smart contract on testnet (Kovan).

The outcome will be your kovan wallet address, kovan smart contract deployment address and a single (or more) transactions on the kovan network.

4. Needed SkillSet

As a part of this challenge, participant is required to have basic understanding of programming. Participant will be expected to learn solidity programming language from scratch and time bound tasks will be allocated in the sprint to achieve that.

Solidity

- This is a necessary skillset to develop smart contracts code for ethereum.
- Reference Document - https://solidity.readthedocs.io/en/develop/

5. GitHub Reporting and code checkin

It is mandatory for each candidate to have a github repo to enable them to report on the challenge progress. Basic ability to checkin code is discussed here:

https://help.github.com/articles/adding-a-file-to-a-repository-using-the-command-line/

Report format:

Komhar will be expecting the progress on the tasks every second day from the date of start of the story. The report will be three columnar:

Name	email	Current status	Next task

These will be maintained as a board under your project repository on same github account. How to create a project and columns is discussed here:

https://help.github.com/articles/about-project-boards/

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6. Tasks

Each task is estimated to need four hours, you can invest more time if needed. Please report on progress after every two days on the github board. The report can also say “no progress made yet”, but no reporting for four days will disqualify you.

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Sprint Start October 16, 2017 Finish October 31 2017. Each task is expected to be finished within two days, however the candidate can manage the time and tasks as they please to meet the overall deadline, ensuring the two day reporting rule is met.

Task	resources	Description	time	Outcome
Identify your github account. Create project board under your repo. Familiarize yourself with basics of the ethereum project.	http://Github.com http://Ethereum.org http://ethdocs.org/en/latest/ https://www.reddit.com/r/ethereum/ https://github.com/ethereum/wiki/wiki/White-Paper http://kovan.etherscan.io/	You should familiarize yourself with the terminology of ethereum community like “Dapps”, node, sync, blocks etc. read through all the resources as much as possible, some of them will need to be referred back when coding/	4 hours	Share github account and repo with Komhar after creating the project columns. Make a single update on the time spent anything remarkable found during the reading.
Create a local node environment and sync it with kovan testnet. The node could be geth or parity latest version.	https://github.com/ethereum/go-ethereum/wiki/geth https://github.com/ethereum/go-ethereum/wiki/Building-Ethereum	You should be able to have a fully synced node running on your personal system. The node block number on the console should match the one on kovan.etherscan.io/. The RPC port should be available on the node accepting traffic test it with localhost:8545 on the browser -	4 hours active work, and continuously connected machine	Synced node. RPC port enabled.

	https://github.com/paritytech/parity/wiki/Setup https://github.com/paritytech/parity/wiki/Getting-Synced https://ethereum.stackexchange.com/ https://www.youtube.com/watch?v=dTjstkfOT8E	it should show error -	for 15 hour with warp speed option	
Learn Solidity I	https://solidity.readthedocs.io/en/develop/	Read the documents and develop basic understanding of accounts, types, mapping, loops and control structures, functions and structs.	4 hours	Understanding of basics of solidity, under the defined heads
Learn Solidity II	https://solidity.readthedocs.io/en/develop/	Recoup the basic concepts, and peek into some advanced concepts like security, compilation, ABI spec	4 hours	Reinforce Understanding of basic concepts, and awareness of advanced concepts.
Remix compiler usage	http://remix.readthedocs.io/en/latest/	Understand the usage of the solidity remix compiler. Run a contract copied from the examples in the first two tasks through javascript VM.	4 hours	Usage of remix compiler in javaScript VM mode.
Create a wallet on kovan using myetherwallet, deploy the key on your geth or parity installation, get additional test ethers from a faucet and see the updated balance.	http://www.myetherwallet.com https://gitter.im/kovan-testnet/faucet https://ethereum.stackexchange.com/questions/465/how-to-import-a-plain-private-key-into-geth-or-mist https://ethereum.stackexchange.com/questions/19577/export-parity-private-key	You will need to create a wallet on the kovan network using myetherwallet service. Once created you will need to fund the wallet using a faucet. Once you see the funds added on http://kovan.etherscan.io/ Add the wallet into your geth or parity node to enable using it for your transactions.	4 hours	Share the newly created wallet address with Komhar over the reporting board

Connect your remix instance to localhost:8545 (your RPC port). Copy any smart contract from links into remix and deploy it on kovan from remix through your node. Execute one or more transactions on the contract which updates some data on the contract	https://ethereum.stackexchange.com/questions/20973/how-to-connect-remix-ide-to-geth-running-on-localhost https://github.com/fivedogit/solidity-baby-steps/tree/master/contracts	Create a local connect with remix browser using	4 hours	Share the contract code address and transaction ids on the github board with komhar. Checkin the solidity code into git repo.

7. Sprint Evaluation

Based on the reporting and extent of tasks completed komhar will select 4-5 candidates and finalize on 1 or 2 based on a telephonic discussion of 15 minutes.

Disclaimer: KOMHAR objective from this exercise is to spread education and awareness about upcoming technologies to students and aspirants learners. KOMHAR is investing its time and resources at no charge. Participation in this challenge is at will with no obligations. KOMHAR may offer few participants an internship / continued guidance and possibly an entry level work assignment based on performance, quality of work and engagement demonstrated by participants.