A Compilation of Guides and References for Smart Contract Tools for Ethereum

Compiled by: Yna Mari DC. Ojeda
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Smart Contract Tools for Ethereum

Solidity is a programming language native to Ethereum. A contract in the sense of Solidity is a collection of code (its functions) and data (its state) that resides at a specific address on the Ethereum blockchain.

The **Truffle Suite** is a collection of tools for smart contracts. It includes a development environment and framework, a personal blockchain for Ethereum, and a collection of front-end libraries.

Truffle is a development environment, testing framework and asset pipeline for blockchains using the Ethereum Virtual Machine. Using truffle, you can get built-in smart contract compilation, linking, deployment and binary management, automate contract testing, and get scriptable, extensible deployment and migrations framework among other things.

Ganache is a one click blockchain that you can quickly fire up as a personal Ethereum blockchain. It allows you to run tests, execute commands, inspect states and control how the chain operates.

Remix is a suit of tools to interact with the Ethereum blockchain in order to debug transactions. An online version of Remix IDE is also available.

MetaMask allows you to visit the distributed web on your browser. It allows you to run Ethereum dApps right in a browser without running a full Ethereum nodes.
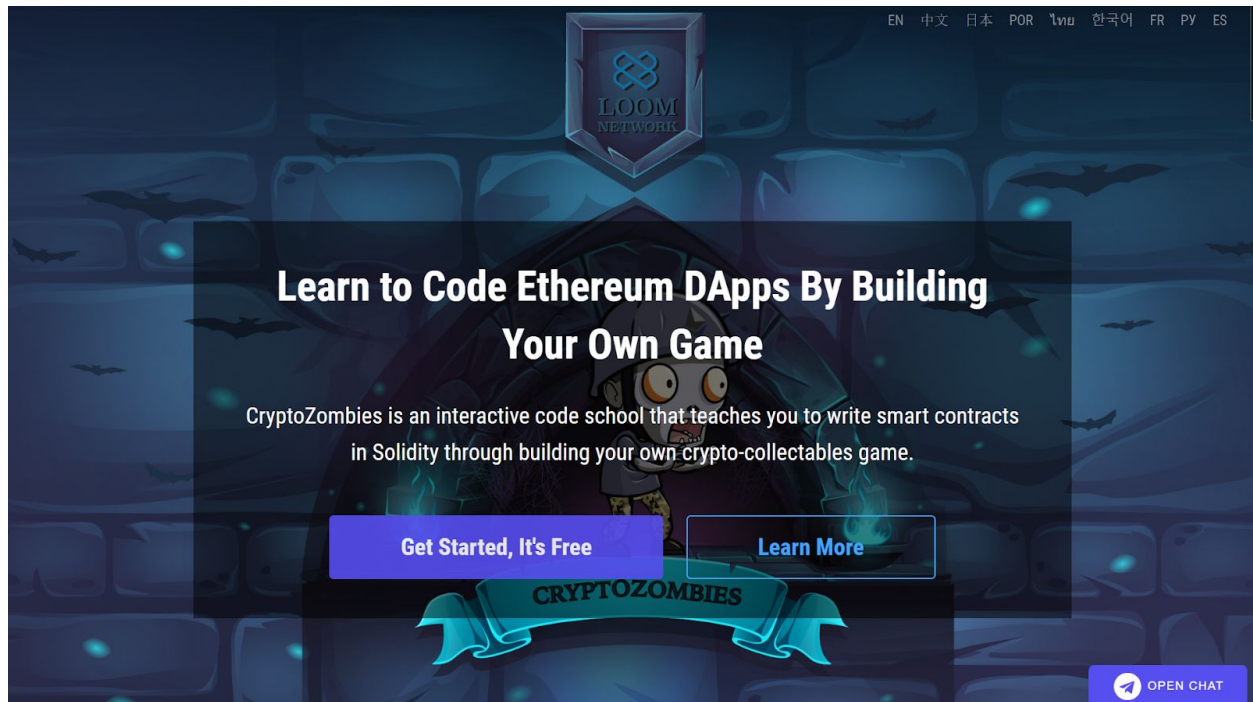
Installation

The following links are installation guides for smart contract tools:

Tools	Installation Guides
Solidity	https://solidity.readthedocs.io/en/latest/installing-solidity.html

Truffle Suite: Truffle	https://www.trufflesuite.com/docs/truffle/getting-started/installation
Truffle Suite: Ganache	https://www.trufflesuite.com/ganache
Truffle Suite: Drizzle	https://www.trufflesuite.com/docs/drizzle/quickstart
Remix IDE	(online IDE) https://remix.ethereum.org/
MetaMask	https://metamask.io/

Guides & References

Solidity

Documentation:

https://solidity.readthedocs.io/en/latest/solidity-by-example.html

CryptoZombies

A great place to start learning Solidity is https://cryptozombies.io/. It is a free interactive code school that teaches you to write smart contracts in Solidity by building crypto-collectable games. It's designed for beginners and starts off with absolute basics.

As of July 2019, it has six chapters on its Solidity Path: beginner to Intermediate Smart Contracts, and two chapters on the Hands-on Path: Make and Deploy a Custom Game Mode.

Truffle Suite & Remix

Tutorials on Official Site:

https://www.trufflesuite.com/tutorials

Ethereum Pet Shop. A great place to start with is Truffle's pet-shop tutorial. It covers setting up the development environment, creating truffle projects using truffle boxes, writing basic smart contracts, and compiling, migrating and testing said smart contracts. It also includes creating a user interface to interact with the smart contract and interacting with the dapp in a browser. *It also helps you set up MetaMask.*

DappUniversity

DappUniversity (https://www.youtube.com/channel/UCY0xL8V6NzzFcwzHCgB8orQ) is a good place to start to get your hands wet with Truffle, Ganache and Remix. There are a lot of playlists of tutorials, and a good place to start with is their Code Your Own Cryptocurrency on Ethereum. It has 16 videos all in all, and does a great job in giving a solid background on ERC-20 Tokens.

References

[1] Ethereum, "ethereum/remix," GitHub, 15-Jul-2019. [Online]. Available: https://github.com/ethereum/remix.

[2] "Introduction to Smart Contracts," Introduction to Smart Contracts - Solidity 0.5.11 documentation. [Online]. Available: https://solidity.readthedocs.io/en/latest/introduction-to-smart-contracts.html.

[3] Truffle Suite, "Drizzle," Truffle Suite. [Online]. Available: https://www.trufflesuite.com/drizzle

[4] Truffle Suite, "Ganache," Truffle Suite. [Online]. Available: https://www.trufflesuite.com/ganache

[5] Truffle Suite, "Truffle: Overview: Documentation," Truffle Suite. [Online]. Available: https://www.trufflesuite.com/docs/truffle/overview.