Getting started with Truffle - A development framework

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Dapps Frameworks

- Enhance productivity, automation, testing and other benefits

2 Frameworks

- Truffle
- Embark

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Truffle Framework

Available in NPM package

Installation

npm install -g truffle

Prerequisite

- Node Js 5.0+
- Window, Linux, MacOS

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Truffle CLI

Use Truffle CLI for common developer tasks like

- Creating project
- Solidity code compilation
- Unit testing (Mocha and Chai)
- Compilation & Migration

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Truffle Package Manager Support

Packages for reusable code.

NPM

- Default Package manager for Javascript Runtime Env. NodeJs

EthPM

- Package registry for Ethereum.
- Follows ERC 190 specification.
  - Standard for packaging distribution for Ethereum code.
- Installation : ***truffle install <package name>@<version>***
- Still evolving

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Developing Contract with Truffle framework

- Project Setup
  - Truffle Boxes
  - Folder Structure
- Iterative development of contracts
  - Using TDD approach
- Compilation and Migration
  - Understand config files
  - On TestRPC

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Project Setup : Truffle Boxes

- Pre-built projects/boilerplates(http://truffleframework.com/boxes/)

Use

- Create a directory
- Change the directory
- Run either of these commands to download
  - ***truffle unbox <box name>***
  - ***truffle init***

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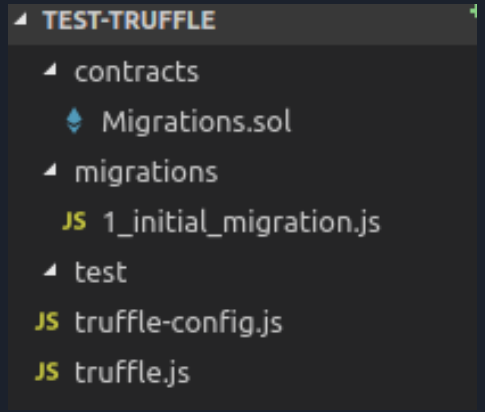
Project Setup : Folder Structure

- **Contracts**
- **Migrations**
- **Test**
- **Build**
- truffle-config.js
- truffle.js



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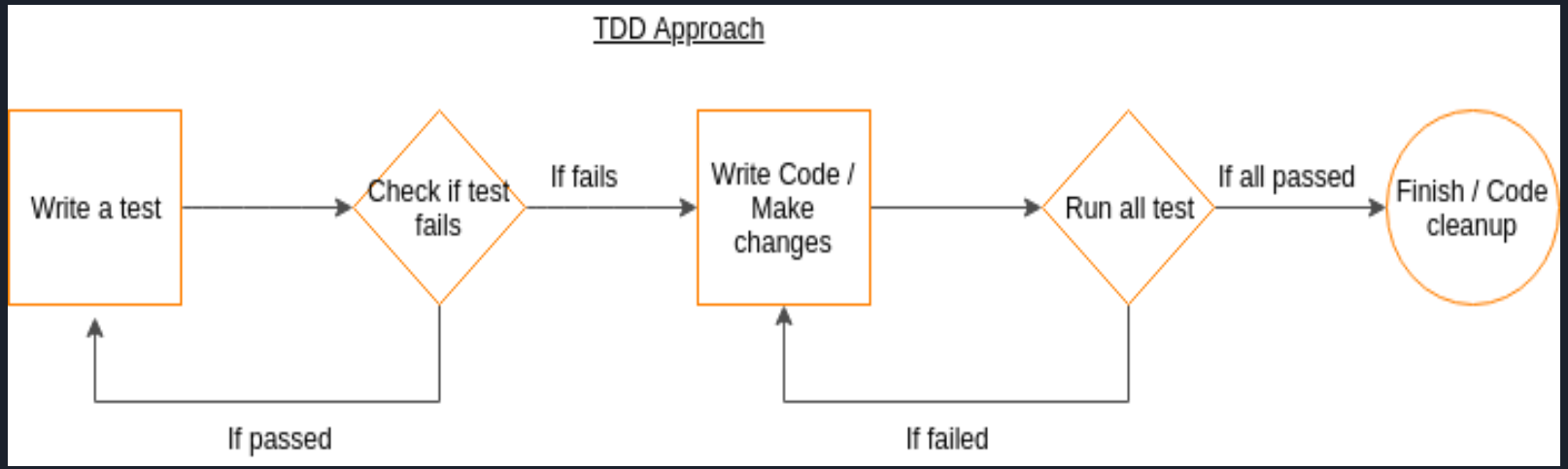
Test Driven Development

- Process of developing automated test before actual development.
- Also called Test First Development
- Refactoring code i.e changing/adding some amount of code to the existing code without affecting the behavior of the code.



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Introduction to Mocha & Chai

Mocha

- Javascript Testing framework, built on Node js
- Functions to write test cases:
  - ***describe(...)*** : Grouping of test case
  - ***it(...)*** : used for describing the test case
  - ***before(...)***, ***beforeEach(..)***, ***after(...)***, ***afterEach(...)***

Chai

- Assertion library
- Assertion styles : ***assert***, ***except***, ***should***

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Testing, Compilation and Migration

Test

> truffle test

Compile

> truffle compile

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Migration

Migration

> truffle migrate

Other options

- ***--network <name>***
- ***--f <number>***
- ***--reset***
- ***--verbose-rpc***
- ***--compile-all***

truffle migrate --network development --reset

Summary

- Initiate truffle box
- Add contracts files to the contracts folder
- Add the respective migration into the new migration file
- Add the test cases into test folder
- Update the configuration in truffle configs files

- Truffle init
- Truffle create contract <contract name>
- Truffle create migration <any name>
- Truffle compile
- Truffle test

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References

Truffle Framework

Embark Framework

EthPM - Ethereum Package Manager

Ethereum registry

Ethereum SC package specification : ERC 190

My blog on TDD

Mocha

Chai API

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