

1) What is Truffle?

Answer - Truffle Suite is a development environment, for testing framework and asset pipeline for Ethereum Blockchain, it used to develop DApps (Decentralized Applications).

Truffle is a one-stop solution for building DApps:

--> Compiling Contracts

--> Deploying Contracts

--> Injecting the contracts into a web app

--> Creating front-end for DApps and Testing.

Truffle has three components

Truffle: for compiling smart contract by code -- truffle compile, but first you need to set up npm on your computer, and then for install, `npm install -g truffle`

Ganache: it is a personal Ethereum Blockchain used to test smart contracts where you can deploy contracts and develop applications, run tests and perform other tasks without any cost.

Drizzle : it is a collection of libraries used to create easy and better front-end for Ethereum DApps.

2) What is Ganache?

Answer - :Ganache is a tool to set up your own local Ethereum Blockchain that you can use to deploy and test your smart contract or DApps before launching them on authentic Blockchain.

Ganache allows you to set up local Ethereum Blockchain to test your DApps in a safe environment.

Ganache enables developers to avoid paying unnecessary gas fees during the developing process.

Ganache helps you in setting up a personal Ethereum Blockchain used to test smart contracts where you can deploy contracts and develop applications, run tests and perform other tasks without any cost on a local network.

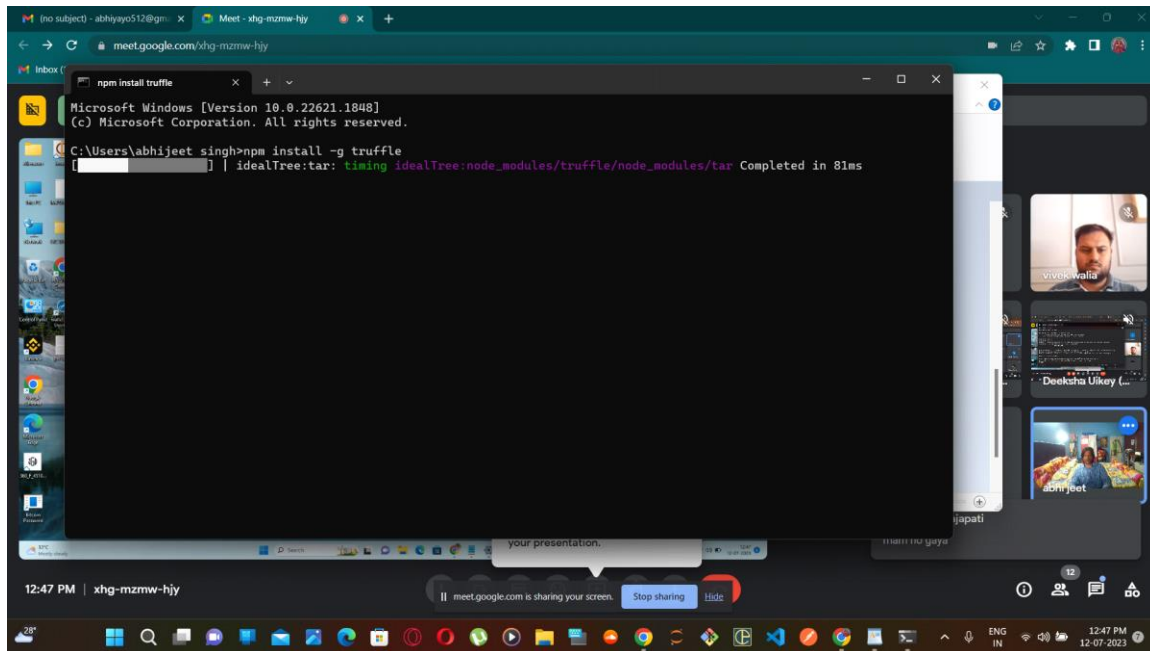
Ganache can help developers save both money and time.

3) Demonstrate the installation process of Truffle suite and display

the current version of Truffle installed in your computer.

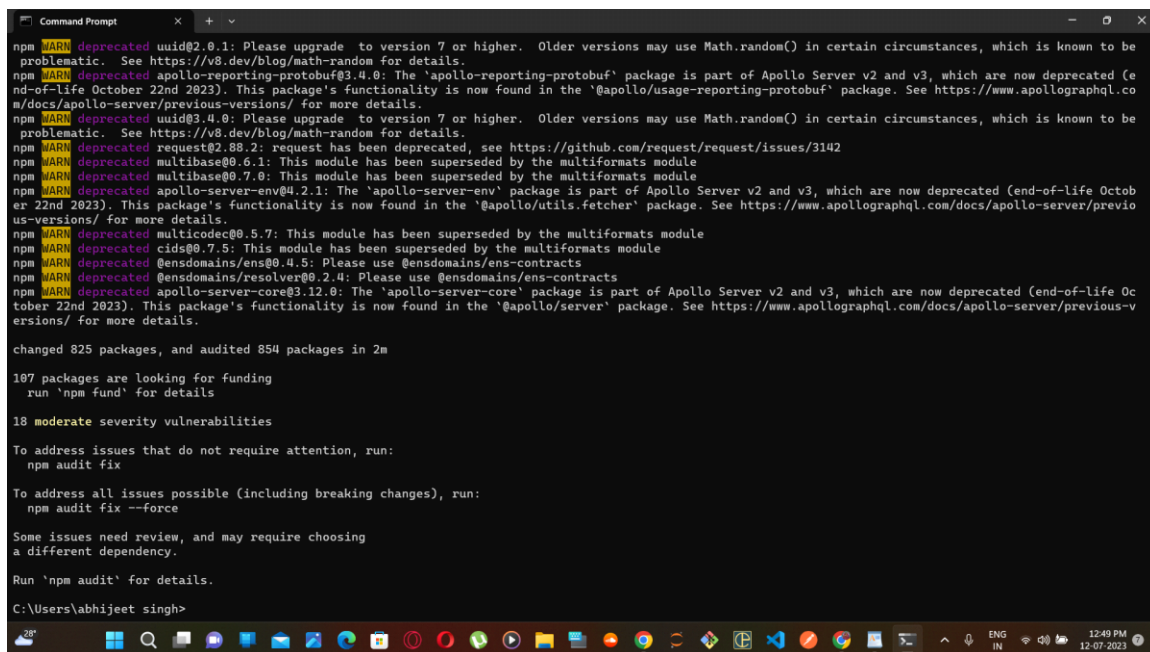
Answer - to install Truffle suite first we need to open command prompt.

next we run the command, `npm install -g truffle`



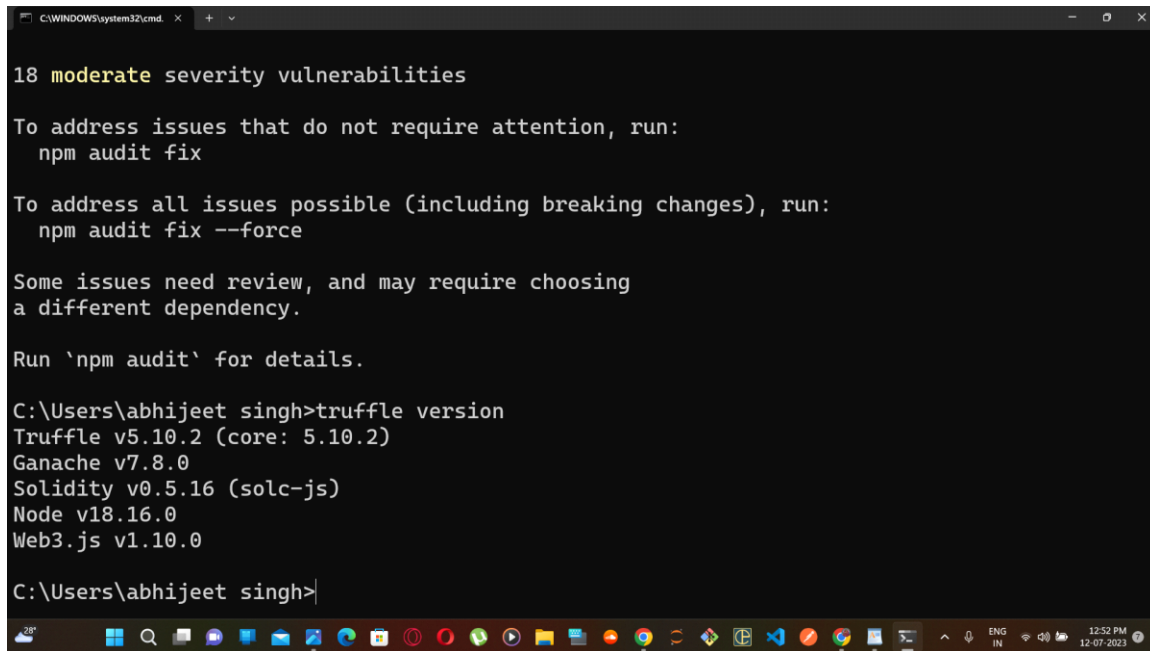
-g refers that we are installing that package globally .

before running the command we check the node is installed or not by running the command
node version.



To check whether Truffle Package is installed , we need to run command:

truffle version



```
C:\WINDOWS\system32\cmd. x + - x

18 moderate severity vulnerabilities

To address issues that do not require attention, run:
  npm audit fix

To address all issues possible (including breaking changes), run:
  npm audit fix --force

Some issues need review, and may require choosing
a different dependency.

Run 'npm audit' for details.

C:\Users\abhijeet singh>truffle version
Truffle v5.10.2 (core: 5.10.2)
Ganache v7.8.0
Solidity v0.5.16 (solc-js)
Node v18.16.0
Web3.js v1.10.0

C:\Users\abhijeet singh>
```

Successfully installed truffle package. v5.10.2

4) Demonstrate the process of unboxing metacoin project and
explore the project structure by explaining the items briefly.

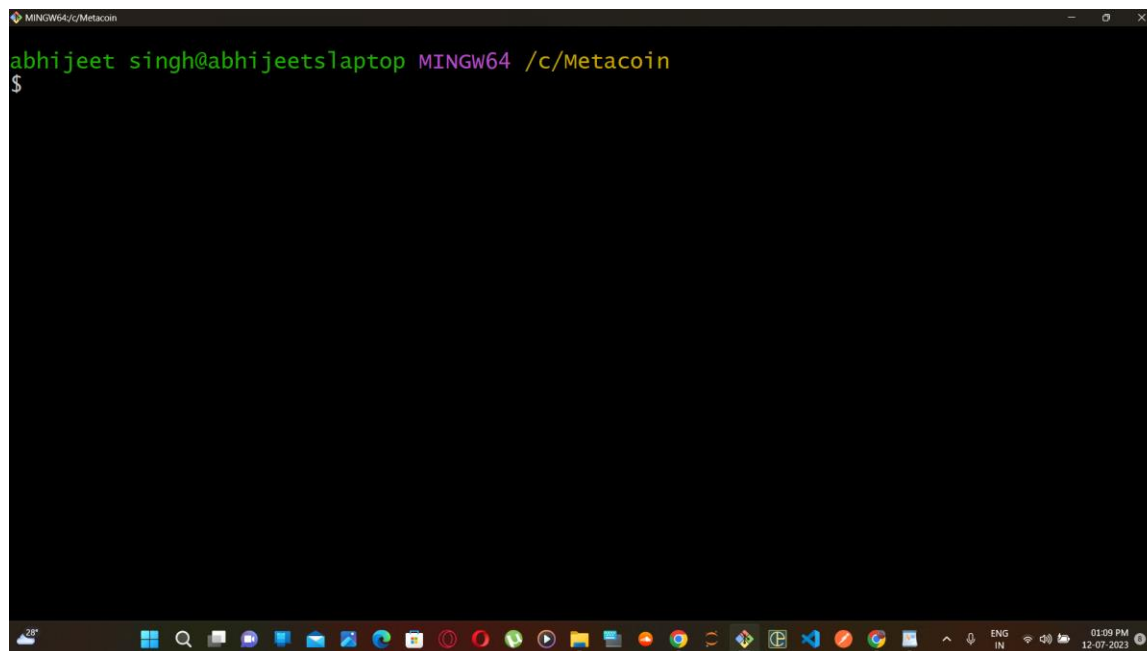
Answer - we can create a bare project template , but for making the example applications and project
we use Truffle boxes. We use Metacoin box, which creates a token that can be transferred between
accounts.

Step 1

Creating a new directory for your Truffle project :

mkdir Metacoin

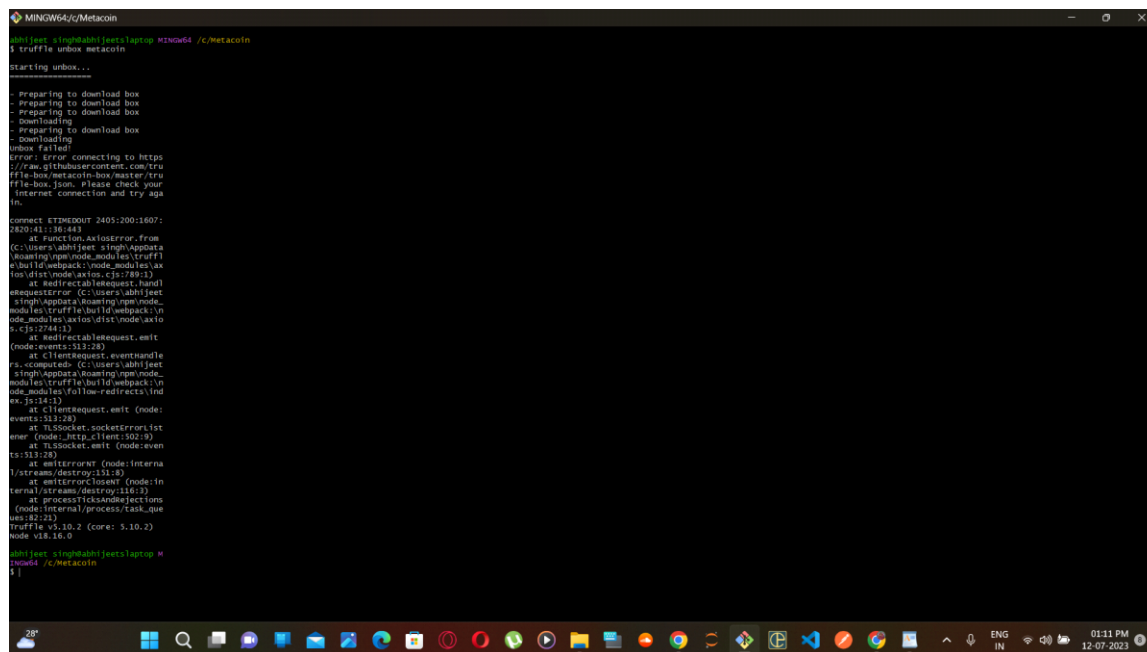
cd Metacoin



Step 2

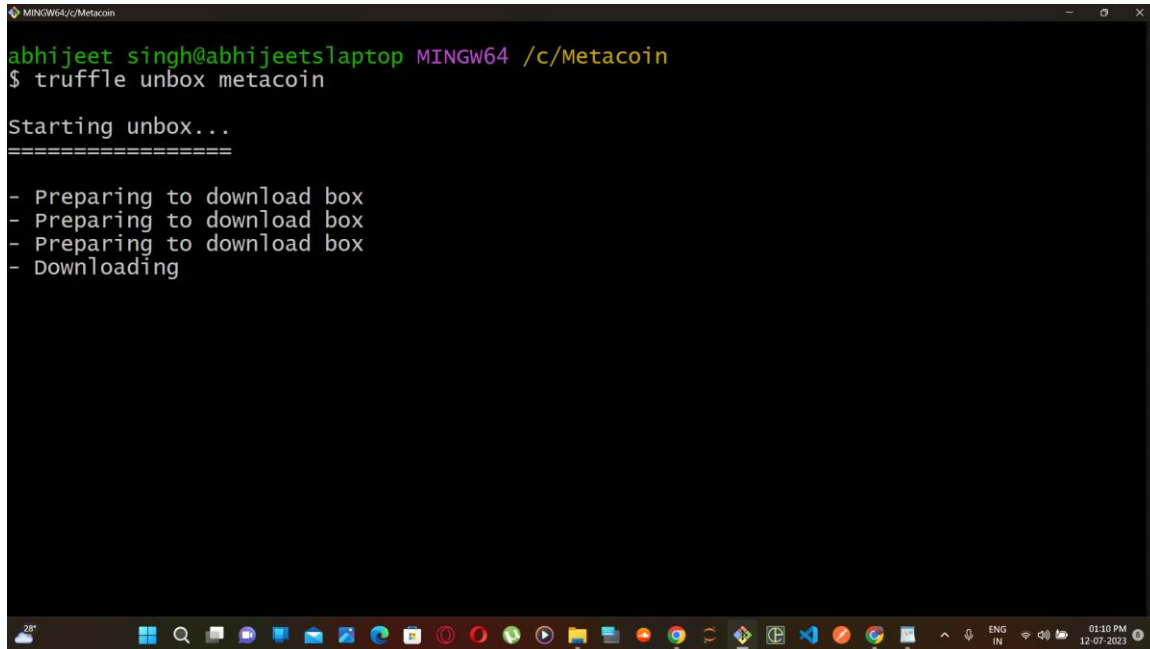
Download "Unbox" the Metacoin box by commands:

```
truffle unbox metacoin
```



with no smart contract included we need:

truffle init

A screenshot of a Windows terminal window titled 'MINGW64/Metacoins'. The prompt is 'abhiyeet singh@abhiyeetslaptop MINGW64 /c/Metacoins'. The command '\$ truffle unbox metacoins' has been entered. The output shows 'Starting unbox...' followed by a separator line '===='. Below this, there is a list of actions: '- Preparing to download box', '- Preparing to download box', '- Preparing to download box', and '- Downloading'. The terminal window has a taskbar at the bottom showing various application icons and the system clock indicating 01:10 PM on 12-07-2023.

```
abhiyeet singh@abhiyeetslaptop MINGW64 /c/Metacoins
$ truffle unbox metacoins

Starting unbox...
====

- Preparing to download box
- Preparing to download box
- Preparing to download box
- Downloading
```

Step 3

Once the operation of downloading the truffle project metacoins is finished, we will have a project structure with the following items:

Metacoins /

contracts/ --> It is a directory for solidity contracts.

migrations/ --> Directory for scriptable deployment files.

test/ --> Directory for test files for testing our application and contracts.

