

3) Demonstrate the process of deploying smart contracts on Ganache using Truffle suite.

Ans. The process of deploying Smart contracts on Ganache using Truffle Suite are:

1. Install Truffle and Ganache using the commands on command window:
npm install -g truffle
npm install -g ganache-cli
2. Start Ganache:
Ganache-cli
3. Initialize a truffle project
Create a New Truffle Project: In your terminal, navigate to your desired directory and initialize a new Truffle project:
mkdir MyTruffleProject
cd MyTruffleProject
truffle init
4. Create a Solidity File: In the contracts directory, create a new file called SimpleStorage.sol:

```
// contracts/SimpleStorage.sol
pragma solidity ^0.8.0;

contract SimpleStorage {
    uint256 storedData;

    function set(uint256 x) public {
        storedData = x;
    }

    function get() public view returns (uint256) {
        return storedData;
    }
}
```

5. Configure Truffle to Connect to Ganache

Update truffle-config.js: Open the truffle-config.js file and configure it to connect to Ganache.
Add or update the development network configuration

6. Create a Migration Script: In the migrations directory, create a new migration script called 2_deploy_contracts.js:

```
// migrations/2_deploy_contracts.js
const SimpleStorage = artifacts.require("SimpleStorage");

module.exports = function(deployer) {
  deployer.deploy(SimpleStorage);
};
```

7. Deploy the Contract

Compile the Contract: Compile your Solidity contracts by running:

truffle compile

8. Deploy the Contract: Deploy your contract to the Ganache network by running:

truffle migrate --network development

9. Interact with the Deployed Contract

Open Truffle Console: To interact with your deployed contract, open the Truffle console:

truffle console --network development

10. Interact with the Contract: Once in the console, you can interact with your deployed contract.

// Get the deployed contract instance

let instance = await SimpleStorage.deployed();

// Set a value

await instance.set(42);

// Get the value

let value = await instance.get();

console.log(value.toString()); // Should print "42"

By following these steps, you should be able to write, compile, and deploy a Solidity smart contract to a local Ganache blockchain using Truffle, and interact with it via the Truffle console.