Modern Education Society's Wadia College of Engineering Pune-01

Department of Computer Engineering

Name of Student:	**Class:**
Semester/Year:	**Roll No:**
Date of Performance:	**Date of Submission:**
Examined By:	**Assignment No: 3**

Laboratory Practice – III (Blockchain Technology)

ASSIGNMENT NO: 03

AIM:

Write a smart contract on a test network, for Bank account of a customer for following operations:

- Deposit money
- Withdraw Money
- Show balance

OBJECTIVES: To help students understand the basic concepts of smart contracts and how to perform operations on Metamask wallet using solidity language. Smart contracts are written in Solidity language. Solidity is statically typed, supports inheritance, libraries and complex user-defined types among other features.

THEORY:

Smart Contract:-

A Smart 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. When deploying contracts, use the latest released version of Solidity. Apart from exceptional cases, only the latest version receives security fixes. Furthermore, breaking changes as well as new features are introduced regularly. All identifiers (contract names, function names and variable names) are restricted to the ASCII character set.

Transactions :-

A blockchain is a globally shared, transactional database. This means that everyone can read entries in the database just by participating in the network. If you want to change something in the database, you have to create a so-called transaction which has to be accepted by all others. The word transaction implies that the change you want to make (assume you want to change two values at the same time) is either not done at all or completely applied. Furthermore, while your transaction is being applied to the database, no other transaction can alter it.

The Ethereum Virtual Machine:

The Ethereum Virtual Machine or EVM is the runtime environment for smart contracts in Ethereum. It is not only sandboxed but actually completely isolated, which means that code running inside the EVM has no access to network, file system or other processes. Smart contracts even have limited access to other smart contracts.

CONCLUSION:

Student understands working of smart contract in ether environment.

QUESTIONS:

1. Enlist different ways to write, compile, and deploy smart contract
2. What is ERC20 standard? Explain in detail.
3. What is test net? How it works? List different test nets.