



Experiment No: 01

GitHub URL: https://github.com/sakshi101202/13_BT/blob/main/13_BT_EXP1.pdf

Snapshot:

The screenshot shows a GitHub repository page for the file `13_BT / 13_BT_EXP1.pdf`. The file is 478 KB and was added via upload. The document content is as follows:

Vidyavardhini's College of Engineering and Technology
Department of Artificial Intelligence & Data Science

Experiment No. 1

Aim:

Creating a Merkle Tree root hash Tree.

Theory:

Merkle Tree is a special type of data structure which is completely built using Cryptographic Hash function. Before going deep into the Merkle Tree, let's have a glance at a hash function. The hash function is a function which converts the input data into a fixed length data regardless of the length of input data. The output of the hash function is called 'hash value', 'hashcode' or 'hash' in short. A hash function generates a completely unique hash with a fixed length for each



Experiment No. 02

GitHub URL: https://github.com/sakshi101202/13_BT/blob/main/13_BT_EXP2.pdf

Snapshot:

The screenshot shows a web browser displaying a GitHub repository page. The address bar shows the URL: github.com/sakshi101202/13_BT/blob/main/13_BT_EXP2.pdf. The page title is "13_BT / 13_BT_EXP2.pdf". The file size is 771 KB. The file is a PDF document. The content of the PDF is visible, showing the Vidyavardhini's College of Engineering and Technology logo and the title "Experiment No. 2". The aim and theory of the experiment are also displayed.

Aim:

Creating and deploying Smart Contract using Solidity and Remix IDE.

Theory:

- Smart contract is a computer program or a transaction protocol which is intended to automatically execute, control or document legally relevant events and actions according to the terms of a contract or an agreement.
- Remix IDE (Integrated Development Environment) is a web application that can be used to write, debug, and deploy Ethereum Smart Contracts.



Vidyavardhini's College of Engineering & Technology

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Experiment No: 03

GitHub URL: https://github.com/sakshi101202/13_BT/blob/main/13_BT_EXP3.pdf

Snapshot:

The screenshot shows a GitHub repository page for the file `13_BT / 13_BT_EXP3.pdf`. The file is 1010 KB and was uploaded 3 minutes ago. The PDF content is displayed, showing the header of Vidyavardhini's College of Engineering and Technology, Department of Artificial Intelligence & Data Science, and Experiment No. 3. The PDF text includes an aim, theory, and a list of bullet points.

Aim:

Creating Transactions using Solidity and Remix IDE

Theory:

- Consider a smart contract for basic banking operations. This contract includes all of the functionalities and capabilities that Solidity presents. Also, it demonstrates about how to send ETH between any account and the contract developed (from an account to a contractor from a contract to an account) and how to restrict the people who can use the relevant function of the smart contract.
- Create a client object to keep the client's information, which will join the contract by using the struct of the contract. To keep the client's ID, address, and balance for the contract. The contract will have a function to add a new client to the contract.



Experiment No: 04

GitHub URL: https://github.com/sakshi101202/13_BT/blob/main/13_BT_EXP4.pdf

Snapshot:

The screenshot shows a GitHub repository page for the user 'sakshi101202'. The file '13_BT / 13_BT_EXP4.pdf' is selected, showing its metadata (689 KB) and a note about GitHub Copilot. The PDF content is displayed, featuring the Vidyavardhini's College of Engineering and Technology logo and the title 'Experiment No. 4'. The content includes an aim, theory, and a step-by-step guide for creating a MetaMask wallet.

Aim:

Creating a MetaMask wallet and performing the transactions to add Ethersand Tokens.

Theory:

Step 1: Create a wallet at meta-mask

- Install MetaMask in Chrome browser and enable it. After installation, click on its icon on the top right of the browser page. It will open in a new tab of the browser. Click on "Create Wallet" and click "I agree" to proceed further. Now you are agreeing to the terms and conditions. Create a password and then it will send you a secret backup phrase used for backing up and restoring the account.
- It should not be disclosed or shared with anyone, as this phrase can steal your Ethers. Ensure that you are in the "Main Ethereum Network." If you find a checkmark next to "Main Ethereum Network", you



Experiment No: 05

Github Url: https://github.com/sakshi101202/13_BT/blob/main/13_BT_EXP5.pdf

Snapshot:

The screenshot shows a web browser displaying a GitHub repository page. The address bar shows the URL: github.com/sakshi101202/13_BT/blob/main/13_BT_EXP5.pdf. The page title is "13_BT / 13_BT_EXP5.pdf". The repository owner is "sakshi101202". The file size is "1.18 MB". The page content includes the Vidyavardhini's College of Engineering and Technology logo and name, followed by the department name "Department of Artificial Intelligence & Data Science". The main content of the PDF is visible, showing the title "Experiment No. 5", the aim "Performing a transaction using Geth", the theory "Ethereum Node", and the types of nodes "1. Mining Node".

Vidyavardhini's College of Engineering and Technology
Department of Artificial Intelligence & Data Science

Experiment No. 5

Aim:
Performing a transaction using Geth

Theory:
Ethereum Node:
An Ethereum node is a computer that is running the software client. The blockchain network is made up of nodes, which are the only method to access it. Nodes communicate with one another in order to validate transactions and record data about the status of the blockchain.

Types of Node:
1. Mining Node : Nodes that belong to miners. These nodes are responsible for writing



Experiment No: 06

GitHub URL: https://github.com/sakshi101202/13_BT/blob/main/13_BT_EXP6.pdf

Snapshot:

The screenshot shows a web browser displaying a GitHub repository page. The address bar shows the URL: github.com/sakshi101202/13_BT/blob/main/13_BT_EXP6.pdf. The page title is "13_BT / 13_BT_EXP6.pdf". The file size is 833 KB. The page content includes the Vidyavardhini's College of Engineering and Technology logo and name, followed by the department name: Department of Artificial Intelligence & Data Science. The main heading is "Experiment No. 6". Below this, the "Aim:" section states: "To execute a solidity contract on Ganache". The "Theory:" section explains that Ganache is used for setting up a personal Ethereum Blockchain for testing Solidity contracts. It mentions that Ganache provides more features than Remix and that users must first download and install the Blockchain on their local machine. The text then says "Installing and setup Ganache" and "You may download Ganache from the following URL -" followed by the URL: <https://truffleframework.com/ganache>. At the bottom, there is a preview of the Truffle Suite website.



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Experiment No: 08

GitHub URL: https://github.com/sakshi101202/13_BT/blob/main/13_BT_EXP8.pdf

Snapshot:

The screenshot shows a GitHub repository page for a user named sakshi101202. The repository is named 13_BT and the selected file is 13_BT_EXP8.pdf. The file is 579 KB and was uploaded 8 minutes ago. The page content includes the Vidyavardhini's College of Engineering and Technology logo and name, followed by the Department of Artificial Intelligence & Data Science. The main content area displays the title 'Experiment No. 8' and the aim 'Case Study on Other Blockchain platforms'. The theory section discusses Ripple, an open-payment network for digital currency, and its role in reducing friction in international payments.

Aim:

Case Study on Other Blockchain platforms

Theory:

Ripple: Ripple is an open-payment network for digital currency. It is also a holding company. Ripple is a privately held cash flow positive company that aims to create and enable a global network of financial institutions and banks to use ripple software, to lower cost of international payments. It is also cost-efficient and real-time enabled. Ripple calls this global network using ripple software products. The Ripple (XRP) ledger is an open-source product created by ripple. It was created to reduce major points of friction in international payments.



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