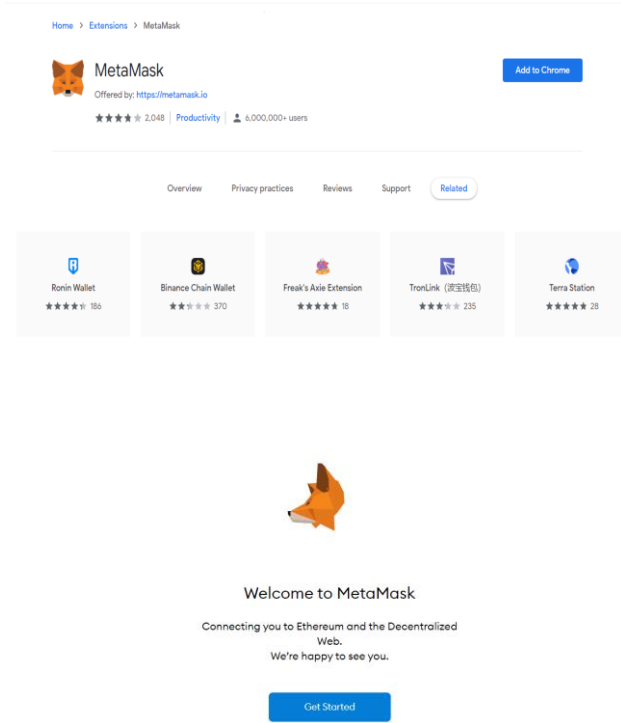



Charotar University of Science & Technology (CHARUSAT)
Devang Patel Institute of Advance Technology & Research (DEPSTAR)
Blockchain Technology (CE471)
Practical Solution


Semester: 7th

Academic Year: 2021-22

Sr No	Aim
1.	<p>Install a Bitcoin/Ethereum wallet. Generate and secure your private key. Perform following tasks:</p> <ol style="list-style-type: none"> Create Account/Import Account Add ether into account Perform transaction to different account <p>Solution:</p> <ol style="list-style-type: none"> Create Account/Import Account  <p>The screenshot shows the Chrome Web Store page for the MetaMask extension. It includes the MetaMask logo, a 2.048-star rating, and a 'Productivity' badge. Below the main extension card, there are five related extensions: Ronin Wallet, Binance Chain Wallet, Freak's Axie Extension, TronLink, and Terra Station. At the bottom of the screenshot is the 'Welcome to MetaMask' setup screen, which says 'Connecting you to Ethereum and the Decentralized Web. We're happy to see you.' and has a 'Get Started' button.</p>

 METAMASK


New to MetaMask?



No, I already have a Secret Recovery Phrase

Import your existing wallet using a Secret Recovery Phrase


Import wallet



Yes, let's get set up!

This will create a new wallet and Secret Recovery Phrase

Create a Wallet

 METAMASK

[< Back](#)


Create Password

New password (min 8 chars)

Confirm password

☒ I have read and agree to the [Terms of Use](#)

Create


 METAMASK

[< Back](#)

Secret Backup Phrase

Your secret backup phrase makes it easy to back up and restore your account.

WARNING: Never disclose your backup phrase. Anyone with this phrase can take your Ether forever.



CLICK HERE TO REVEAL SECRET WORDS

[Remind me later](#) [Next](#)


Tips:


Store this phrase in a password manager like 1Password.

Write this phrase on a piece of paper and store in a secure location. If you want even more security, write it down on multiple pieces of paper and store each in 2 - 3 different locations.

Memorize this phrase.

[Download this Secret Backup Phrase and keep it stored safely on an external encrypted hard drive or storage medium.](#)

 METAMASK



Congratulations

You passed the test - keep your Secret Recovery Phrase safe, it's your responsibility!


Tips on storing it safely

- Save a backup in multiple places.
- Never share the phrase with anyone.
- Be careful of phishing! MetaMask will never spontaneously ask for your Secret Recovery Phrase.
- If you need to back up your Secret Recovery Phrase again, you can find it in Settings -> Security.
- If you ever have questions or see something fishy, contact our support [here](#).

*MetaMask cannot recover your Secret Recovery Phrase. [Learn more](#).






All Done


b. Add ether into account




Kashyap Shah | Wear 🧢 @kashyapshah09 · 1m

Requesting faucet funds into
0xb0B6174063217a78EA96A7D446f511A45A7d3f3D on the [#Goerli](#)
[#Ethereum](#) test network via [faucet.goerli.mudit.blog](#)




 **Goerli Authenticated Faucet**


Give me Ether ▼





0xb0b6174063217a78ea96a7d446f511a45a7d3f3d

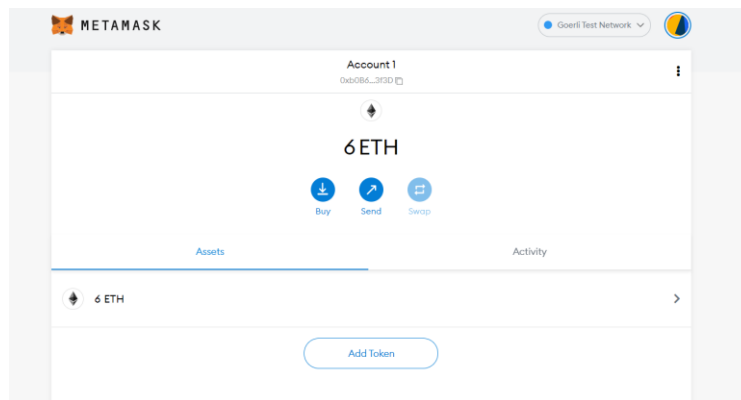
funded

 4 peers

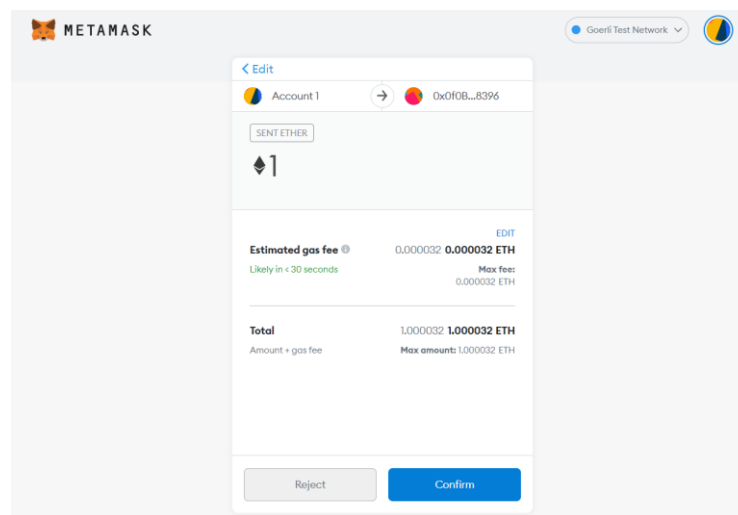
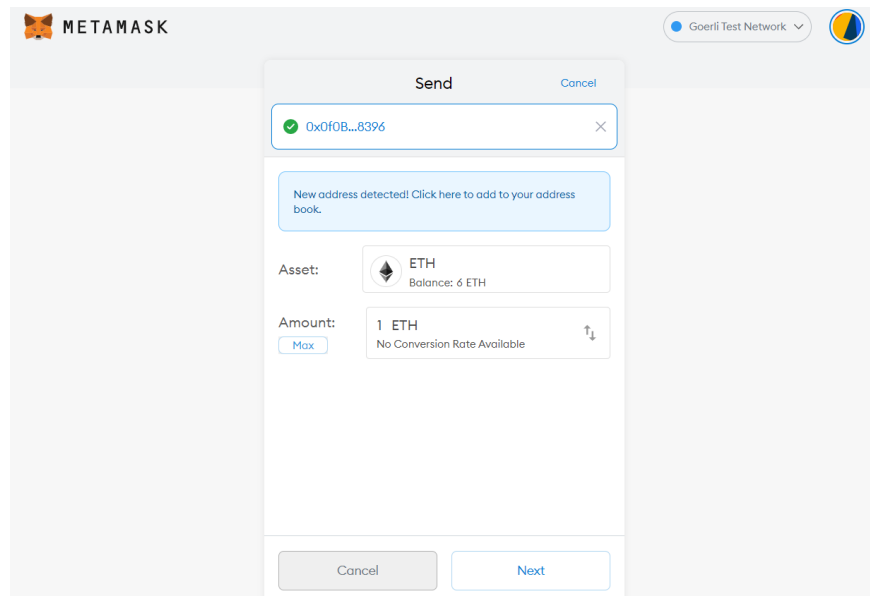
 5422377 blocks

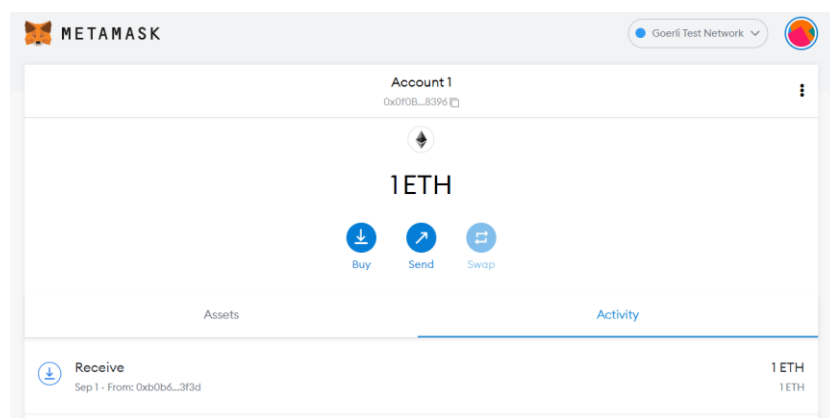
 895918 Ethers

 341771 funded



c. Perform transaction to different account





2. Write a simple Smart Contract, compile, deploy it using Metamask Ropsten Test Network

- Setting a Greeting —we should be able to set a greeting
- Displaying the Greeting —we should be able to retrieve the greeting and display it.

Solution:

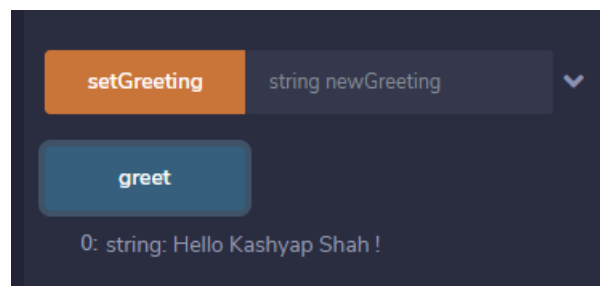
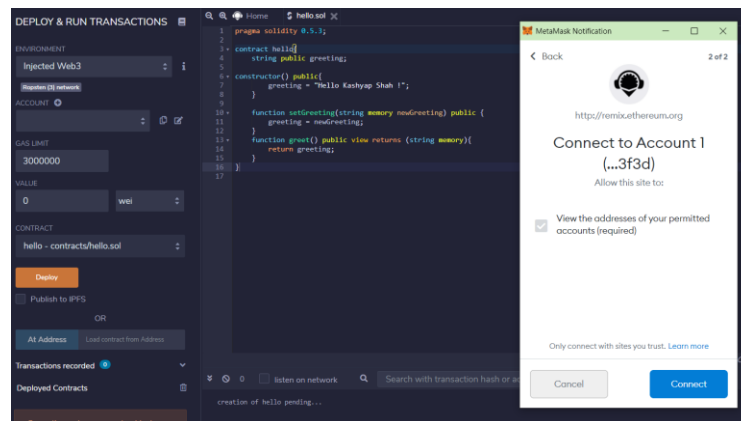
```
pragma solidity 0.5.3;
```

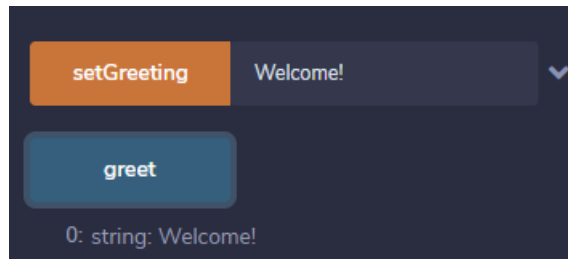
```
contract TestContract{
    string private greeting;
```

```
    constructor() public{
        greeting = "Hello Kashyap Shah!";
    }
```

```
    function setGreeting(string memory newGreeting) public {
        greeting = newGreeting;
    }
```

```
    function greet() public view returns (string memory){
        return greeting;
    }
}
```





CONCLUSION: In this practical, I have learnt about solidity programming , about functions and testing .

3. Write a smart contract of Election with following tasks:
- Cast vote against two candidates
 - Vote should be cast only once.
 - No voter can vote any third candidate.

Solution:

```
pragma solidity 0.4.23;
```

```
contract Election {
```

```
    struct Candidate{
        uint id;
        string name;
        uint votecount;
    }
```

```
    mapping(address => bool) public voters;
    mapping(uint => Candidate) public candidates;
```

```
    uint public candidatesCount;
```

```
    event votedEvent (
        uint indexed_candidateId
    );
    constructor () public
    {
        addCandidates("BJP");
        addCandidates("Congress");
    }
```

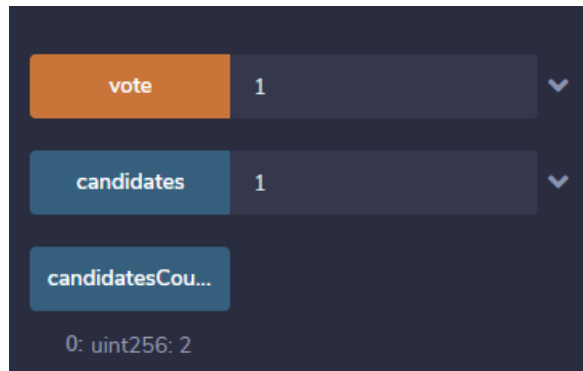
```
    function addCandidates(string _name) private {
        candidatesCount++;
        candidates[candidatesCount] = Candidate(candidatesCount, _name , 0);
    }
```

```
    function vote(uint _candidateId) public {
        require(!voters[msg.sender]);
        require(_candidateId > 0 && _candidateId <= candidatesCount);

        voters[msg.sender] = true;

        candidates[_candidateId].votecount++;

        emit votedEvent(_candidateId);
    }
}
```

Conclusion: We learned about Smart Contract of Election.