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Lab – 2 BCDV4028

1)

```
function hasCode(address _contractAddress) public view returns (bool) {
    uint size;
    assembly {
        size := extcodesize(_contractAddress)
    }
    return size > 0;
}
```

3)

Atomic Swaps:

Advantages:

- Atomic swaps are trustless, which means that users do not need to rely on a centralized exchange or a third party to complete the transaction.
- Atomic swaps align with the principles of decentralization, as they do not rely on centralized intermediaries.
- The cryptographic nature of atomic swaps makes them secure against fraud and counterparty risk.

Disadvantage:

- Implementing atomic swaps can be technically complex,
- Liquidity can be limited for atomic swaps, especially for less popular tokens or smaller blockchains. Finding a counterparty for the swap may be challenging.
- Atomic swaps typically work best between blockchains that share similar cryptographic hash functions.

Cross-Chain Bridges:

Advantages:

- Cross-chain bridges can support a wider range of assets, including tokens that may not have native support for atomic swaps.
- Bridges can enable liquidity pools where users can swap assets across chains, potentially leading to better liquidity and more efficient trading.
- Bridges can be used to integrate various Blockchain ecosystems

Disadvantages:

- Many cross-chain bridges rely on trusted validators or custodians to operate. This introduces centralization risk, as users must trust these entities to maintain the peg between chains.
- Cross-chain bridges can be technically complex to develop and maintain.
- Governance of the bridge, including upgrades and changes, can be contentious and may require decentralized decision-making processes.