Fraud Detection in Banking Using Blockchain

1.Defining the Use Case

We decided to focus on:

- Safe money transfers between bank accounts.
- Smart contracts check all the rules before approving transfers.
- Any suspicious transfer will be stopped and reported.
- All transactions are recorded safely and cannot be changed later.

2.Blockchain Platform Choice

We looked at two main blockchain types:

- **Hyperledger Fabric:** A private blockchain for companies, great for keeping transactions secret.
- **Ethereum:** A public blockchain that is easy to use but less private.

We chose **Hyperledger Fabric** because banks need privacy and control.

3.Program Code

This project is built using different pieces of code that work together to stop fraud in bank transactions:

- **Smart Contracts:**
  Small programs on the blockchain that check if a transaction is safe before allowing it. They make sure the money transfer follows all the rules.
- **Backend Code:**
  Programs written in Python or JavaScript that talk to the blockchain, handle user requests, and check for any suspicious activity.
- **Monitoring Tools:**
  Extra code that watches transactions for anything unusual and sends alerts if something looks wrong.
- **Testing Scripts:**
  These scripts try both normal and fake transactions to make sure the system works well.

4.Documentation

We have written clear instructions and guides, including:

- How to set up and run the system.
- Diagrams showing how the system works.
- Details about the smart contracts and how they check transactions.

- How to test the system with real and fake transfers.
- Guides for users and developers.

5.Project Status

So far, we have:

- Learned about how fraud happens in banking and picked secure money transfers to focus on.
- Researched blockchain platforms like Hyperledger Fabric and Ethereum to find the best fit.
- Designed the system and started building smart contracts and backend code.

  Next, we will improve the system and test it more.

6.Challenges Faced

We faced some problems like:

- Choosing the right problem to solve without making it too big or too small.
- Picking a blockchain platform that is secure and private but also easy to use.
- Making sure the system works fast without losing security.
- Connecting the blockchain with old banking systems.