# System Design

## Class Diagram

|  |
| --- |
| Block |
| * voteData |
| * timestamp |
| * hash |
| * previousHash |
| + calculateHash() |
|  |
| Blockchain |
| * chain: list |
| + addBlock() |
| + isChainValid() |
| + printChain() |
| ↑ (used by) |
| VotingApp |
| + main() |

## Data Flow Diagram

User types vote in the console

↓

VotingApp class reads the vote

↓

Blockchain classes uses addBlock method to add the block to the blockchain

* Blockchain.addBlock(vote)

↓

Block is created

* Vote, timestamp, hash, and prevHash

↓

Block is added to the list (blockchain)

↓

Optional feat.

* Blockchain.printChain() option in menu

## Component Descriptions

|  |  |  |
| --- | --- | --- |
| Class | Description | Concepts |
| Block | Stores one vote, timestamp, hash, and link to previous block | OOP, hashing, encapsulation |
| blockchain | Stores the list of blocks and provides chain logic | Data structures, validation |
| Votingapp | Runs the app and manages the user interaction | Handling input, control flow |