|  |  |  |
| --- | --- | --- |
| National ID | Vote status | Ballot ID |

Voter

    NOT\_REGISTERED = "not registered"

    REGISTERED\_NOT\_VOTED = "registered, but no ballot received"

    BALLOT\_COUNTED = "ballot counted"

    FRAUD\_COMMITTED = "fraud committed"

Ballot

|  |  |  |  |
| --- | --- | --- | --- |
| Ballot ID | Ballot status | Candidate ID | Vote |

    VOTER\_BALLOT\_MISMATCH = "the ballot doesn't belong to the voter specified"

    INVALID\_BALLOT = "the ballot given is invalid"

    FRAUD\_COMMITTED = "fraud committed: the voter has already voted"

    VOTER\_NOT\_REGISTERED = "voter not registered"

    BALLOT\_COUNTED = "ballot counted"

* issue\_ballot

#If the voter registered,Issues a new ballot to a given voter.

#If the voter isn't registered, should return None

* count\_ballot(ballot: Ballot, voter\_national\_id: str)

1. BallotStatus.FRAUD\_COMMITTED - If the voter has already voted

**There is some entry columns ballot id in voter table and Vote status is “BALLOT\_COUNTED”**

1. BallotStatus.VOTER\_BALLOT\_MISMATCH - The ballot does not belong to this voter

**There is no national id in vote table link to ballot id provided**

1. BallotStatus.INVALID\_BALLOT - The ballot has been invalidated, or does not exis

**There is no entry ballot id provided**

1. BallotStatus.BALLOT\_COUNTED - If the ballot submitted in this request was successfully counted

**There is national id in vote table link to ballot id provided and there is ballot id in ballot table.**

1. BallotStatus.VOTER\_NOT\_REGISTERED - If the voter is not registered

**There is no national Id provided in vote table**

* invalidate\_ballot(ballot\_number: str) -> bool:

:returns: If the ballot does not exist or has already been cast, will return Boolean FALSE.

Otherwise will return Boolean TRUE.

There is ballot id in ballot table or status in ballot is “BALLOT\_COUNTED”, false

Otherwise, set the status to “INVALID\_BALLOT” then return true.

* **verify\_ballot(voter\_national\_id: str, ballot\_number: str) -> bool:**

there is national id and ballot id in vote table. and

there is ballot id in ballot table and status is not invalid

* **get\_all\_ballot\_comments() -> Set[str]**
* **compute\_election\_winner() -> Candidate:**

**count ballot id which status is not invalid in ballot table**

* **get\_all\_fraudulent\_voters() -> Set[str]:**