In a **blockchain-based voting system**, each **vote** is treated like a **block** in a **chain of blocks** (similar to Bitcoin or Ethereum). Here's what each part of the sentence means:

---

1. “Each vote is stored as an immutable block”

- ✅ **Block**: A unit of data that contains the vote.
- ✅ **Immutable**: Once added to the chain, the block **cannot be altered** without breaking the entire chain. This ensures **tamper-proof** records.

---

2. “Voter's identity (to preserve anonymity)”

- Although the system tracks **who voted**, it does **not store personal identity directly**.
- Instead, the voter’s ID is usually hashed:

python

CopyEdit

```
voter_hash = SHA256(voter_id)
```

- This way:
    - The system can prevent double voting (check the hash).
    - But no one can reverse the hash to identify the person.
    - 🔐 **Anonymity is preserved**.

---

3. “Timestamp”

- This records **exactly when** the vote was cast (e.g., "2025-07-24 10:03:45").
- It's important for:
    - Election auditing
    - Ordering votes
    - Detecting irregularities

---

4. “Hash of the previous block”

- Each block includes a reference to the **hash of the block before it**.
- This forms a **linked chain**:

scss

CopyEdit

```
Block 2 → Block 1 → Block 0 (Genesis)
```

- If anyone modifies a vote in an earlier block, **all subsequent hashes break**, and tampering is detected.

---

5. “Selected candidate”

- The block includes **which candidate** the user voted for.
- This field is stored clearly (e.g., "Candidate A").
- Paired with the timestamp and hashed voter ID.

---

6. “Its own cryptographic hash”

- The block computes a unique **SHA-256 hash** of all its contents:

python

CopyEdit

```
block_hash = SHA256(voter_hash + candidate + timestamp + prev_hash)
```

- This hash:
  - Acts as a **fingerprint** of the block.
  - Ensures **data integrity**—even a small change will produce a completely different hash.
  - Is used by the **next block** as its prev_hash.