

# Smart Contract Interaction Methods

Call vs Transaction: When to Use Each

## CALL (Read Operation)

- Purpose:** Read blockchain state
- Cost:** FREE (no gas)
- Speed:** Instant response
- State Change:** NO modifications
- Returns:** Data immediately
- Broadcast:** Local execution only
- Confirmation:** Not needed

### Function Types:

```
function getBalance() public view returns (uint)
```

#### Criterion

Gas Required?	No ✓
Blockchain Change?	No ✓
Wait Time?	Instant ✓

#### Call

## TRANSACTION (Write Operation)

- Purpose:** Modify blockchain state
- Cost:** COSTS GAS
- Speed:** ~12 seconds (Ethereum)
- State Change:** YES - permanent
- Returns:** Transaction hash
- Broadcast:** Network-wide
- Confirmation:** Required (blocks)

### Function Types:

```
function transfer(address to, uint amt) public
```

#### Transaction

Gas Required?	Yes (permanent)
Blockchain Change?	Yes (permanent)
Wait Time?	~12 seconds