Online Auctions Using SmartContracts

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MOTIVATION

- Transparency Issues
  - Traditional auctions lack transparency
- Security Concerns
  - Vulnerable to fraud and disputes
- Automated Trust
  - Blockchain ensures secure, automated transactions

TECHNOLOGIES

Step 1

- Seller creates auction.
- Each auction is controlled by an Auction Manager (Smart Contract), and has its own contract.
- Starting bid and bid increment are denominated in ETH.

Step 2

- Bidders place bids using their Ethereum wallet addresses.
- Bids of the bidders are securely locked in the smart contract until the auction ends.

Step 3

- Seller requests end of the auction. Auction Manager ends the auction.
- No more bids can be placed.
- Bidders (except Winner) can withdraw their bid (gas fees applied).

Step 4

- Seller ships the item to the Winner. Shipment status changed.

Step 5

- Winner confirms receipt.
- Smart contract releases ETH to the seller's Ethereum wallet.

Figure 1: Bidding Process

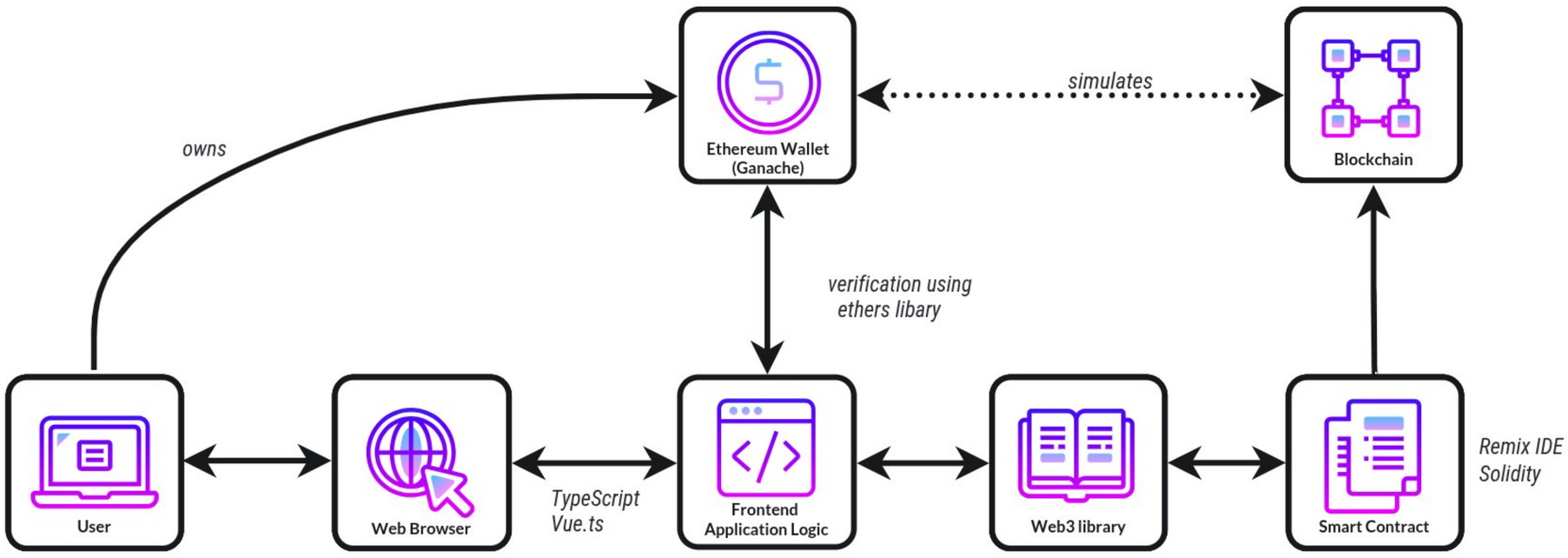

Figure 2: System Architecture

RESULTS

- Interactive Web Application
  - Interactive Vue.js auction platform
- Real-Time Bidding
  - Instant bidding and withdrawal with Ethereum wallets
- Auction Management
  - Sellers create and end auctions securely
- Blockchain Integration
  - Transparent, secure Ethereum integration via smart contracts