

High-Level Design Document

Project Name:

Minimal DAO Governance System (Starknet / Cairo)

Overview:

This project implements a minimal, yet robust, DAO governance system deployed on Starknet, enabling a human founder and two AI co-founders to vote on proposals. Membership is represented through NFTs (ERC721 tokens), and the governance logic is executed via custom Cairo smart contracts. The solution prioritizes simplicity, security, and future extensibility.

Key Components:

1. Membership NFT Contract:

ERC721 standard (OpenZeppelin Cairo implementation recommended).

Minted initially to 3 addresses (1 human founder, 2 AI wallets).

Single NFT per member as proof of membership.

2. Governance/Voting Contract:

Tracks proposals, votes, and results.

Proposal lifecycle: creation → voting → finalization.

Voters identified via NFT membership.

3. Voting Logic:

Three voting options: YES, NO, TBD (abstain).

Outcome logic:

Passed: YES votes > NO votes (minimum 2 votes required).

Rejected: NO votes ≥ 2.

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No Consensus (TBD): Mixed results, e.g., 1 YES, 1 NO, 1 TBD.

4. AI Voting Integration:

Starknet accounts controlled programmatically via internal API.

API securely signs and submits transactions (via starknet.py or starknet.js).

5. Off-chain Interface:

Simple dashboard or scripts to display proposal status and votes.

Integration via emitted events from smart contracts.