Michigan Sorting Hat DAO

BAM Cohort Project

Fostering Community Among Students

What's the use?

Grow Crypto on Campus

Students can have a free and easy introduction to crypto

Foster Community

By leveraging the power of web3, we can create a robust online community

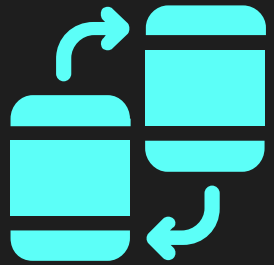
Facilitate Governance

Allow students to have a say on different decisions

How it works

Scan QR Code

Using mobile wallet, scan QR codes posted in dorms and mint an NFT



Trade NFTs

Students will have the ability to trade NFTs

Vote on proposals

The DAO will allow students to vote on intra and inter-dorm proposals

POAPs

The proof of attendance protocol (POAP) is an inexpensive way to record your attendance to an event by the issuance of an ERC721 token or NFT

xDAI sidechain

A sidechain is a separate blockchain that runs in parallel to the main (eth) chain and is connected by a 2-way bridge

The xDAI sidechain uses proof-of-stake and has its own native stablecoin, xDAI.

By using proof-of-stake as consensus, transactions are very cheap

POAP.xyz

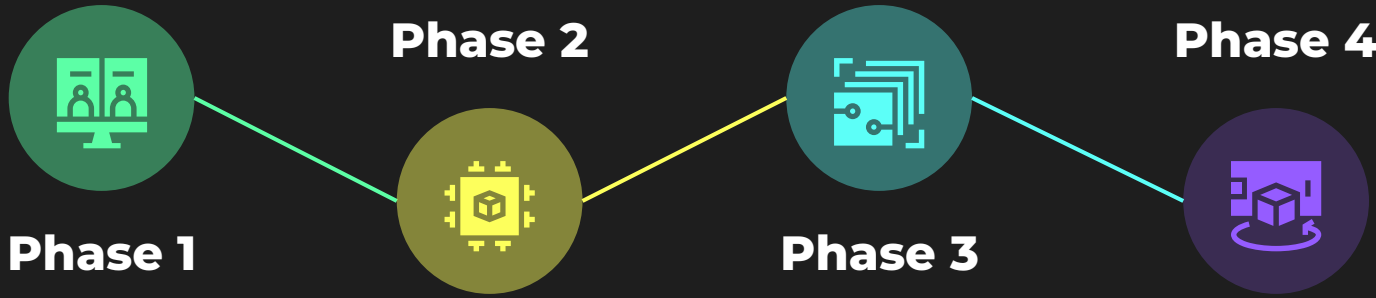
POAP.xyz is the home of the protocol

Here you can:

- Create your own POAP with no code experience
- Conduct raffles and polls for your POAP holders
- Browse other POAPs from different events

For our project, we wanted to replicate the POAP system specific to our own purposes.

How the POAP protocol works



Phase 1

Contract source code is deployed to the xDAI sidechain

Phase 2

Events are registered to the contract with unique EventIDs for each event and TokenIDs for each NFT

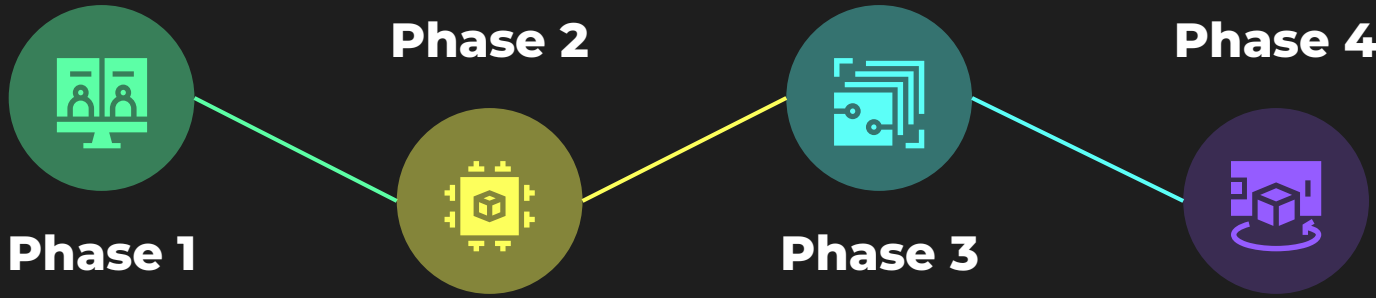
Phase 3

Users send Transactions for newly minted NFTs for their event

Phase 4

The transactions are handled on the xDAI chain and NFTs are send to the user

The Michigan Sorting Hat DAO



Phase 1

Contract source code is deployed to the xDAI sidechain

Phase 2

Each residence hall is registered with a unique ID and token

Phase 3

Students scan a QR code that sends a request for their halls Token

Phase 4

The transactions are handled on the xDAI chain and NFTs are send to the user

NFT Designs

East Quad

Wenley House
Room 1843

Claimed: 4/9/22 3:21 PM

West Quad

Michigan House
Room 284

Claimed: 4/9/22 3:21 PM

South Quad

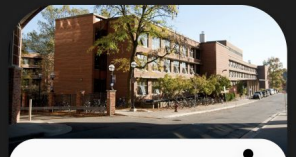
Crysler House
Room 1647

Claimed: 4/9/22 3:21 PM

Bursley

Bennet House
Room 1043

Claimed: 4/9/22 3:21 PM



Markley

Lowry House
Room 2770

Claimed: 4/9/22 3:21 PM

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Implementation

Solidity for the smart contracts and Javascript for front-end webapp

Implementation - Initialization of POAP

```
function initialize(string memory __name, string memory __symbol, string memory __baseURI, address[] memory admins)
public initializer
{
    ERC721.initialize();
    ERC721Enumerable.initialize();
    PoapRoles.initialize(msg.sender);
    PoapPausable.initialize();

    // Add the requested admins
    for (uint256 i = 0; i < admins.length; ++i) {
        _addAdmin(admins[i]);
    }

    _name = __name;
    _symbol = __symbol;
    _baseURI = __baseURI;
}
```

Implementation - Minting of NFTs

```
/**
 * @dev Function to mint tokens
 * @param eventId EventId for the new token
 * @param to The address that will receive the minted tokens.
 * @return A boolean that indicates if the operation was successful.
 */
function mintToken(uint256 eventId, address to)
public whenNotPaused returns (bool)
{
    lastId += 1;
    return _mintToken(eventId, lastId, to);
}
```

```
 * @dev Function to mint tokens
 * @param eventId EventId for the new token
 * @param tokenId The token id to mint.
 * @param to The address that will receive the minted tokens.
 * @return A boolean that indicates if the operation was successful.
 */
function _mintToken(uint256 eventId, uint256 tokenId, address to) internal returns (bool) {
    // TODO Verify that the token receiver ('to') do not have already a token for the event ('eventId')
    _mint(to, tokenId);
    _tokenEvent[tokenId] = eventId;
    emit EventToken(eventId, tokenId);
    return true;
}
```

Implementation - Trading of NFTs

```
function transferTo(address to, uint256 tokenId) public whenNotPaused {
    super.transferFrom(msg.sender, to, tokenId);

    emit NFTtransfer(msg.sender, to);
}
```

Michigan Dining DAO

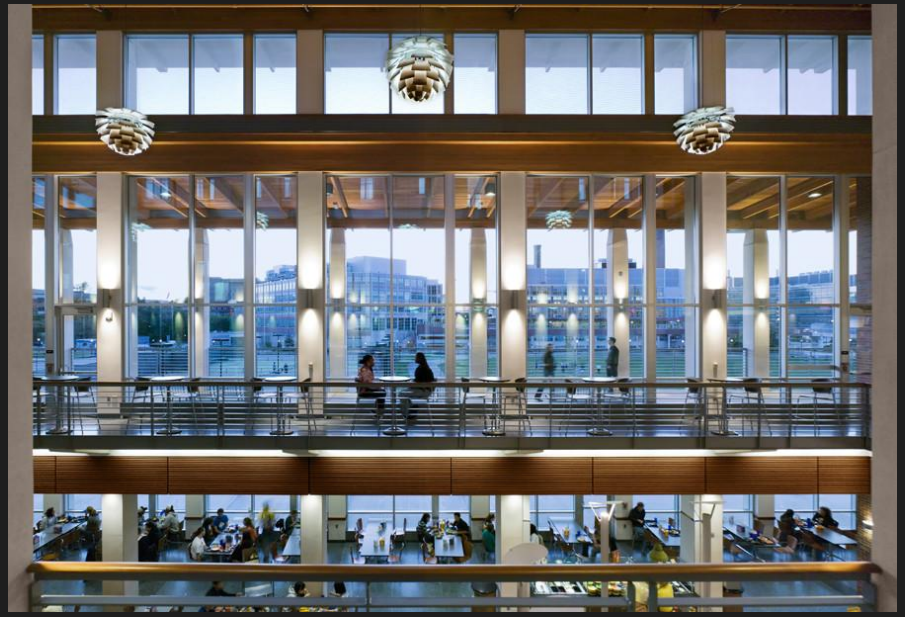
Key Objectives

For the University

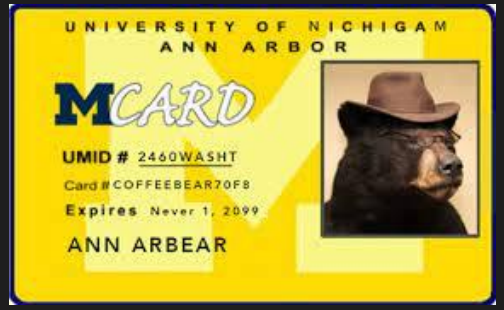
Encourage students, especially upperclassmen, to buy more dining hall meal plans

For the Students

Improve dining hall and make it more receptive to student concerns



Logistics



Every student gets one vote

Students can vote on proposals that aim to improve the dining hall

Blue bucks rewards

Students earn blue bucks for participating in Michigan Dining DAO proposals/votes

Healthy Habits

Dining Hall improves quality, and students spend less money on outside restaurants

Thank You!