Project Autonomint

Front End - NextJS

Backend - NestJS, Swagger for API Integration

Database - PostgreSQL

Deployment - AWS (EC2 for backend and Amplify for Frontend, Kubernetes, SSL certificates from Route53 for Domain name, CICD Pipeline (AWS or Azure)

Domain: Go Daddy

Website Hosting - Hostinger

Blockchain - EVM

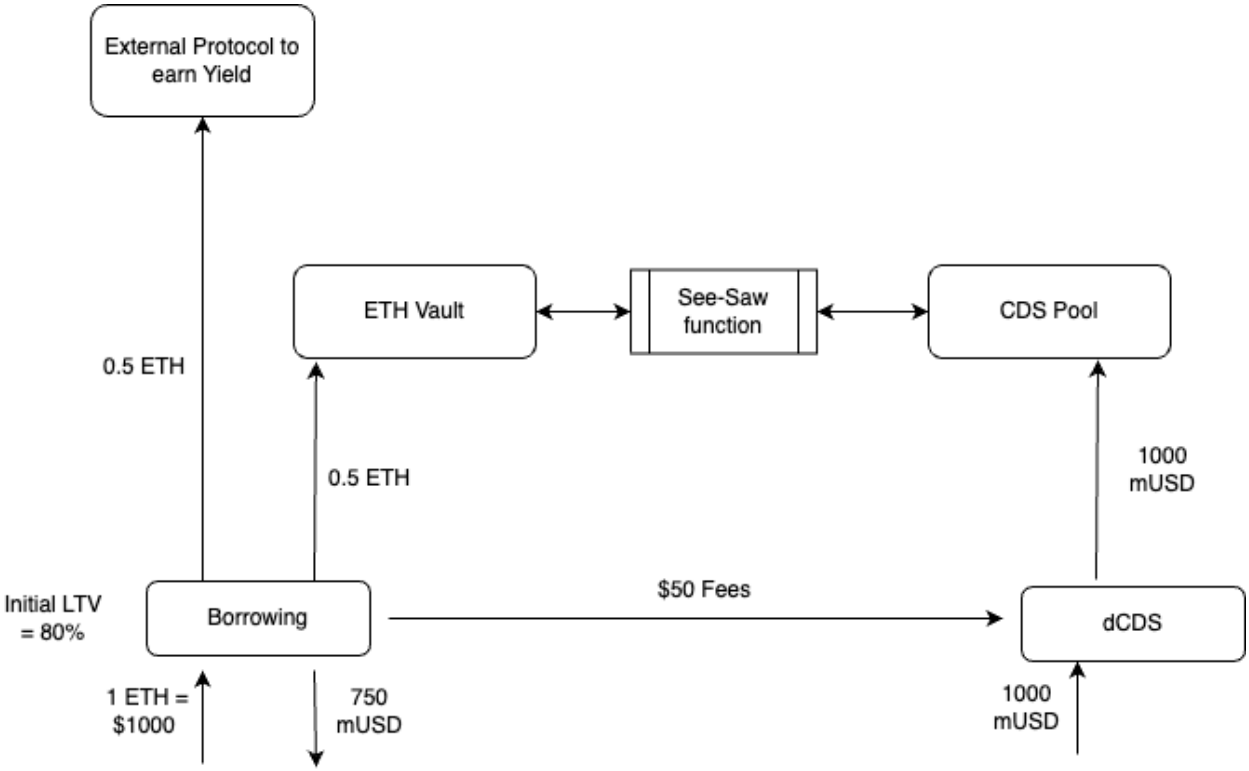
Smart Contract - Solidity

SC testing - Foundry

IDE Environment - Flexible

Autonomint

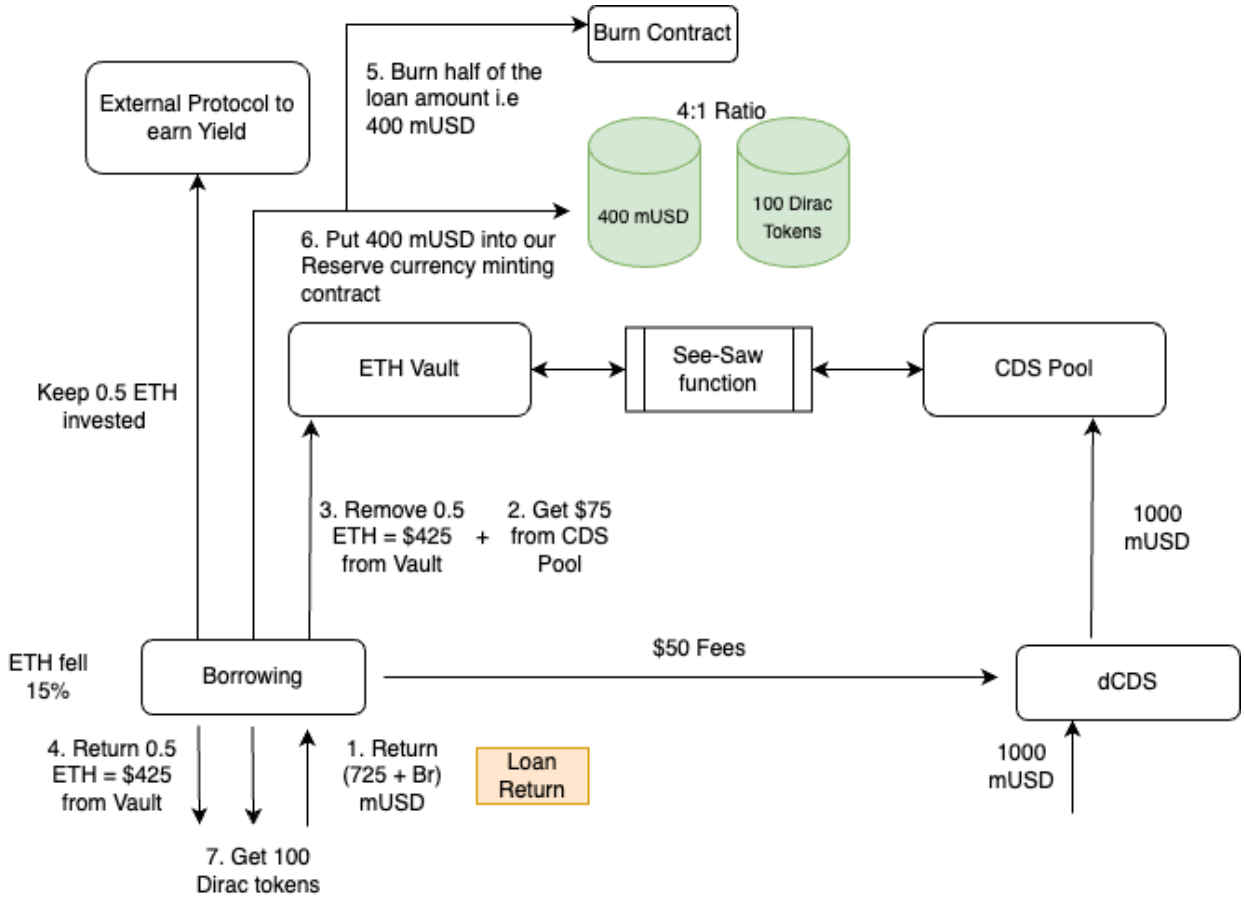
1. Borrowing Stage



Process

1. We will be keeping the LTV ratio at 80% initially
2. Assuming 1 ETH = $1000, the borrower will deposit 1 ETH and get $800 loan as mUSD
3. As per the option formula, fees will be deducted
4. Half of the ETH will be kept in ETH vault
5. Half of the ETH will be transferred to external protocol to earn yield
6. Borrowing Fees will be charged as per the borrowing rate on loan taken

2. Loan Returned by Borrower before <20% ETH price Fall



Process

1. Borrower will be charged borrowing rate as per the below formula

$$\text{Total Debt at time t, Br} = B*(1+APR/n)^{nt}$$

2. We will be checking the ETH collateral value of depositors at every minute

3. We will be checking if the LTV <=40% for the particular borrower whenever he returns the loan or deposit more collateral

4. If the LTV <=40% then we will calculate the amount less than 40%LTV to decide on the Dirac tokens to be minted

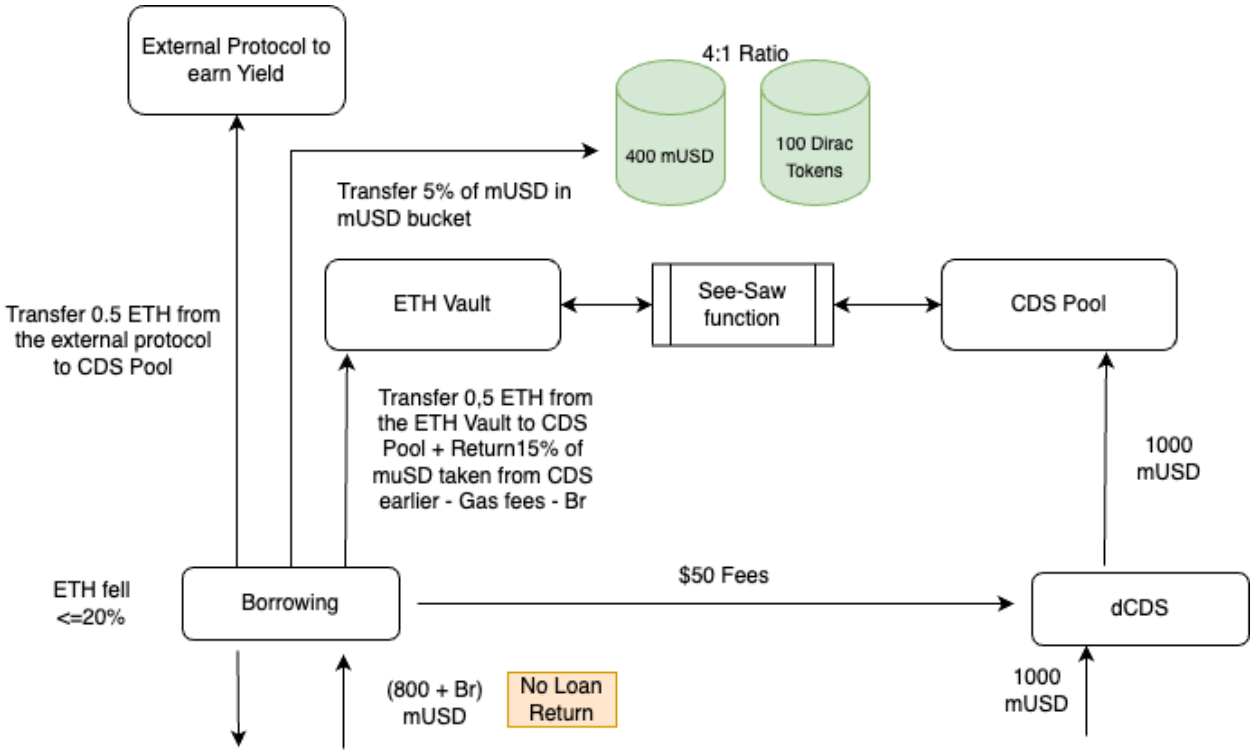
   Amount of Dirac tokens to be minted = (Amount at 40%LTV - Borrowed amount)/4

5. Borrower then will be given the corresponding Dirac tokens (Holding Dirac tokens is equivalent to ETH staking/lending as the yield earned on ETH staking/lending will be added to Dirac tokens holders but with the additional benefit that Dirac tokens price may itself be free-floating and can rise as per the demand)

6. The loaned amount returned will be calculated as per the below formula

   Total loaned amount to be returned = Total borrowed amount $*(1+APR/n)^{nt}$ - (ETH Collateral Deposit Price - ETH current price)

3. Liquidation Stage - ETH price fell by 20%



Process

1. As the ETH price fell by 20% of the deposited amount price or when LTV turns 100% then we have to start the Liquidation Process
2. At LTV = 100% now
   Total ETH value = $800
   Total amount through CDS Protection = 200 mUSD

   So, We have a total value of $1000 at this moment
3. Out of this amount, we will return the whole of ETH and $150 of SC i.e 150 muSD to the CDS Pool. This way we are able to protect 150mUSD of CDS value which otherwise would have went away for Borrower protection. But since borrower defaulted so now a portion of that amount will be returned back to CDS Pool
4. Since 0.5 ETH is in external protocol so getting back that amount will cost some fees. Suppose that fees is f. Also, we have the interest on borrowed amount i.e br which was not returned

   So, Total amount returned to CDS Pool = 1 ETH + 150 mUSD - Br -f
5. 50 mUSD will be sent to our (mUSD:Dirac) Pool which will help increase the total amount of mUSD in mUSD bucket and thus will help increase the value of Dirac.

   In this scenario, any of the dCDS holders can act as a Liquidation agent as per the amount deposited.

Options Flow

1.