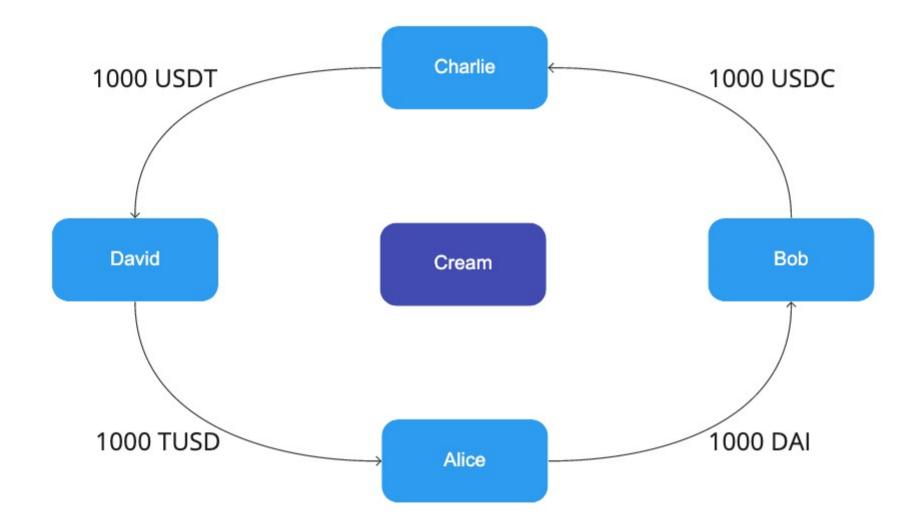
## **Hard-Withdraw with Locked Collateral**

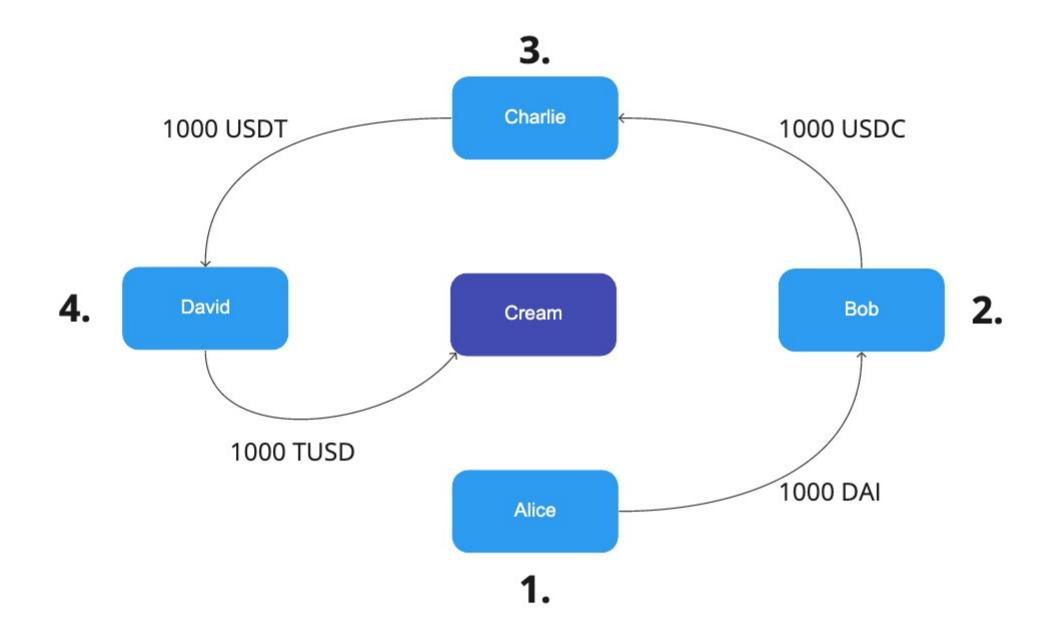
DISCLAIMER: In practice, such scenario happens in extreme market conditions and collateral factors of 1. We present it here to explain why some details of the code is implemented as it is.

A. Let's consider the most extreme scenario where Alice, Bob, Charlie and David are matched in P2P with collateral factors of 100%:

- Alice supplies 1000 DAI and Bob borrows them
- · Bob supplies 1000 USDC and Charlie borrows them
- · Charlie supplies 1000 USDT and David Borrow them
- · David supplies 1000 TUSD and Alice borrows them



- В.
- 1. Repays & triggers withdraw: hard-withdraw => unmatchBorrowers(DAI).
- 2. Charlie can't be unmatched by borrowing on Cream, as the collateral is matched (cf Liquidation Invariant):triggers \_unmatchTheSupplier(Bob) => unmatchBorrowers(USDC).
- 3. Charlie can't be unmatched by borrowing on Cream, as the collateral is matched (cf Liquidation Invariant): triggers \_unmatchTheSupplier(Charlie) => unmatchBorrowers(USDT).
- 4. Charlie can be unmatched by borrowing on Cream, as his collateral is on Cream: triggers borrow(USDT).



C. Now that we reached the tale of the chain (in the worse case, Alice's repayment itself). We successively borrrow and supply to Cream and finally Alice can withdraw.

