

LENDF.ME Interfaces

Notice:

This document describes how to integrate lendf.me into your project, the following contents include three chapters: *Functions*, *Return Codes* and *Contracts Deployed*. Please touch me by email to hello@lendf.me for help if you have any question.

Functions:

Function Name	Inputs	Outputs	Remarks
getCollateralMarketsLength() return(uint)	no	uint num_asset: number of asset supported;	Get the number of supported assets.
collateralMarkets(uint) return(address)	uint index: index of array;	address asset: price of asset;	Get the address of supported asset.
assetPrices(address) return(uint)	address asset: address of asset	uint asset_price: price of asset;	Get price of supported asset priced by WETH with 18 decimals.
supply(address, uint) returns (uint)	address asset: address of asset; uint amount: amount to supply;	uint error: 0 for success, not 0 for error code;	Supply asset.
withdraw(address, uint) returns (uint)	address asset: address of asset; uint requestedAmount: amount to withdraw (-1 代表全部提取);	uint error: 0 for success, not 0 for error code;	Withdraw asset.
borrow(address, uint)	address asset: address of asset;	uint error: 0 for success, not 0 for error code;	Borrow asset.

returns (uint)	uint amount: amount to borrow;		
repayBorrow(address, uint) returns (uint)	address asset: address of asset; uint amount: amount to repay (-1 代表全部归还);	uint error: 0 for success, not 0 for error code;	Repay asset.
calculateAccountValues(address) returns (uint, uint, uint)	address account: address of account;	uint error: 0 for success, not 0 for error code; uint total_supplies: total balance of supplied asset; uint total_borrows: total balance of borrowed asset;	Get total supplied balance and total borrowed balance of user account priced by WETH with 36 decimal.
getSupplyBalance(address, address) returns (uint)	address account: address of account; address asset: address of asset;	uint amount: amount of asset;	Get supplied balance of asset of user account.
getBorrowBalance(address, address) returns (uint)	address account: address of account; address asset: address of asset;	uint amount: amount of asset;	Get borrowed balance of asset of user account.
markets(address) returns (bool, uint, address, uint, uint, uint, uint, uint, uint)	address asset: address of asset;	bool isSupported: if asset is activated in current market; uint blockNumber: current block number of Ethereum; address interestRateModel: interest mode	Get market data of asset.

		<p>address of asset;</p> <p>uint totalSupply: total amount of asset supplied;</p> <p>uint supplyRateMantissa: supply interest rate in one block cycle.</p> <p>uint supplyIndex: index of supply interest;</p> <p>uint totalBorrows: total amount of asset borrowed;</p> <p>uint borrowRateMantissa: borrowinterest rate in one block cycle.</p> <p>uint borrowIndex: index of borrow interest;</p>	
<p>collateralRatio()</p> <p>return (uint)</p>	No	<p>uint col_ratio: minimal collateral ratio borrower should maintain;</p>	Get minimal collateral ratio of market.
<p>originationFee()</p> <p>return (uint)</p>	No	<p>uint origination_fee: origination fee;</p>	Get origination fee ratio.
<p>getAccountLiquidity(address)</p> <p>returns (int)</p>	<p>address account: address of account;</p>	<p>int amount: status of borrowing asset;</p>	Get account liquidation status. If return value is positive, the account could not be liquidated, otherwise the return value

			is the amount to be liquidated, priced by WETH with 18 decimals.
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Liquidator Interfaces:

Function Name	Inputs	Outputs	Remarks
liquidateBorrow(address targetAccount, address as setBorrow, address assetCollateral, uint requested AmountClose) returns (uint)	address targetAccount: target account to be liquidating; address assetBorrow: borrowed asset to be liquidating; address assetCollateral: asset act as collateral to be liquidating; uint requestedAmountClose: amount to be liquidating;	 uint error: 0 for success, not 0 for error code;	 清算账户的负资产;

Error Codes

Error code	Remarks
<i>NO_ERROR</i>	
<i>OPAQUE_ERROR</i>	
<i>UNAUTHORIZED</i>	
<i>INTEGER_OVERFLOW</i>	
<i>INTEGER_UNDERFLOW</i>	
<i>DIVISION_BY_ZERO</i>	
<i>BAD_INPUT</i>	
<i>TOKEN_INSUFFICIENT_ALLOWANCE</i>	
<i>TOKEN_INSUFFICIENT_BALANCE</i>	
<i>TOKEN_TRANSFER_FAILED</i>	
<i>MARKET_NOT_SUPPORTED</i>	
<i>SUPPLY_RATE_CALCULATION_FAILED</i>	
<i>BORROW_RATE_CALCULATION_FAILED</i>	
<i>TOKEN_INSUFFICIENT_CASH</i>	
<i>TOKEN_TRANSFER_OUT_FAILED</i>	
<i>INSUFFICIENT_LIQUIDITY</i>	
<i>INSUFFICIENT_BALANCE</i>	
<i>INVALID_COLLATERAL_RATIO</i>	
<i>MISSING_ASSET_PRICE</i>	
<i>EQUITY_INSUFFICIENT_BALANCE</i>	

<i>INVALID_CLOSE_AMOUNT_REQUESTED</i>	
<i>ASSET_NOT_PRICED</i>	
<i>INVALID_LIQUIDATION_DISCOUNT</i>	
<i>INVALID_COMBINED_RISK_PARAMETERS</i>	
<i>ZERO_ORACLE_ADDRESS</i>	
<i>CONTRACT_PAUSED</i>	

Failure Codes

Failure code	Remarks
<i>ACCEPT_ADMIN_PENDING_ADMIN_CHECK</i>	
<i>BORROW_ACCOUNT_LIQUIDITY_CALCULATION_FAILED</i>	
<i>BORROW_ACCOUNT_SHORTFALL_PRESENT</i>	
<i>BORROW_ACCUMULATED_BALANCE_CALCULATION_FAILED</i>	
<i>BORROW_AMOUNT_LIQUIDITY_SHORTFALL</i>	
<i>BORROW_AMOUNT_VALUE_CALCULATION_FAILED</i>	
<i>BORROW_CONTRACT_PAUSED</i>	
<i>BORROW_MARKET_NOT_SUPPORTED</i>	
<i>BORROW_NEW_BORROW_INDEX_CALCULATION_FAILED</i>	
<i>BORROW_NEW_BORROW_RATE_CALCULATION_FAILED</i>	
<i>BORROW_NEW_SUPPLY_INDEX_CALCULATION_FAILED</i>	
<i>BORROW_NEW_SUPPLY_RATE_CALCULATION_FAILED</i>	
<i>BORROW_NEW_TOTAL_BALANCE_CALCULATION_FAILED</i>	
<i>BORROW_NEW_TOTAL_BORROW_CALCULATION_FAILED</i>	

BORROW_NEW_TOTAL_CASH_CALCULATION_FAILED	
BORROW_ORIGINATION_FEE_CALCULATION_FAILED	
BORROW_TRANSFER_OUT_FAILED	
EQUITY_WITHDRAWAL_AMOUNT_VALIDATION	
EQUITY_WITHDRAWAL_CALCULATE_EQUITY	
EQUITY_WITHDRAWAL_MODEL_OWNER_CHECK	
EQUITY_WITHDRAWAL_TRANSFER_OUT_FAILED	
LIQUIDATE_ACCUMULATED_BORROW_BALANCE_CALCULATION_FAILED	
LIQUIDATE_ACCUMULATED_SUPPLY_BALANCE_CALCULATION_FAILED_BORROWER_COLLATERAL_ASSET	
LIQUIDATE_ACCUMULATED_SUPPLY_BALANCE_CALCULATION_FAILED_LIQUIDATOR_COLLATERAL_ASSET	
LIQUIDATE_AMOUNT_SEIZE_CALCULATION_FAILED	
LIQUIDATE_BORROW_DENOMINATED_COLLATERAL_CALCULATION_FAILED	
LIQUIDATE_CLOSE_AMOUNT_TOO_HIGH	
LIQUIDATE_CONTRACT_PAUSED	
LIQUIDATE_DISCOUNTED_REPAY_TO_EVEN_AMOUNT_CALCULATION_FAILED	
LIQUIDATE_NEW_BORROW_INDEX_CALCULATION_FAILED_BORROWED_ASSET	
LIQUIDATE_NEW_BORROW_INDEX_CALCULATION_FAILED_COLLATERAL_ASSET	
LIQUIDATE_NEW_BORROW_RATE_CALCULATION_FAILED_BORROWED_ASSET	
LIQUIDATE_NEW_SUPPLY_INDEX_CALCULATION_FAILED_BORROWED_ASSET	
LIQUIDATE_NEW_SUPPLY_INDEX_CALCULATION_FAILED_COLLATERAL_ASSET	
LIQUIDATE_NEW_SUPPLY_RATE_CALCULATION_FAILED_BORROWED_ASSET	
LIQUIDATE_NEW_TOTAL_BORROW_CALCULATION_FAILED_BORROWED_ASSET	
LIQUIDATE_NEW_TOTAL_CASH_CALCULATION_FAILED_BORROWED_ASSET	
LIQUIDATE_NEW_TOTAL_SUPPLY_BALANCE_CALCULATION_FAILED_BORROWER_COLLATERAL_ASSET	
LIQUIDATE_NEW_TOTAL_SUPPLY_BALANCE_CALCULATION_FAILED_LIQUIDATOR_COLLATERAL_ASSET	

LIQUIDATE_FETCH_ASSET_PRICE_FAILED	
LIQUIDATE_TRANSFER_IN_FAILED	
LIQUIDATE_TRANSFER_IN_NOT_POSSIBLE	
REPAY_BORROW_ACCUMULATED_BALANCE_CALCULATION_FAILED	
REPAY_BORROW_CONTRACT_PAUSED	
REPAY_BORROW_NEW_BORROW_INDEX_CALCULATION_FAILED	
REPAY_BORROW_NEW_BORROW_RATE_CALCULATION_FAILED	
REPAY_BORROW_NEW_SUPPLY_INDEX_CALCULATION_FAILED	
REPAY_BORROW_NEW_SUPPLY_RATE_CALCULATION_FAILED	
REPAY_BORROW_NEW_TOTAL_BALANCE_CALCULATION_FAILED	
REPAY_BORROW_NEW_TOTAL_BORROW_CALCULATION_FAILED	
REPAY_BORROW_NEW_TOTAL_CASH_CALCULATION_FAILED	
REPAY_BORROW_TRANSFER_IN_FAILED	
REPAY_BORROW_TRANSFER_IN_NOT_POSSIBLE	
SET_ASSET_PRICE_CHECK_ORACLE	
SET_MARKET_INTEREST_RATE_MODEL_OWNER_CHECK	
SET_ORACLE_OWNER_CHECK	
SET_ORIGINATION_FEE_OWNER_CHECK	
SET_PAUSED_OWNER_CHECK	
SET_PENDING_ADMIN_OWNER_CHECK	
SET_RISK_PARAMETERS_OWNER_CHECK	
SET_RISK_PARAMETERS_VALIDATION	
SUPPLY_ACCUMULATED_BALANCE_CALCULATION_FAILED	
SUPPLY_CONTRACT_PAUSED	
SUPPLY_MARKET_NOT_SUPPORTED	

<i>SUPPLY_NEW_BORROW_INDEX_CALCULATION_FAILED</i>	
<i>SUPPLY_NEW_BORROW_RATE_CALCULATION_FAILED</i>	
<i>SUPPLY_NEW_SUPPLY_INDEX_CALCULATION_FAILED</i>	
<i>SUPPLY_NEW_SUPPLY_RATE_CALCULATION_FAILED</i>	
<i>SUPPLY_NEW_TOTAL_BALANCE_CALCULATION_FAILED</i>	
<i>SUPPLY_NEW_TOTAL_CASH_CALCULATION_FAILED</i>	
<i>SUPPLY_NEW_TOTAL_SUPPLY_CALCULATION_FAILED</i>	
<i>SUPPLY_TRANSFER_IN_FAILED</i>	
<i>SUPPLY_TRANSFER_IN_NOT_POSSIBLE</i>	
<i>SUPPORT_MARKET_FETCH_PRICE_FAILED</i>	
<i>SUPPORT_MARKET_OWNER_CHECK</i>	
<i>SUPPORT_MARKET_PRICE_CHECK</i>	
<i>SUSPEND_MARKET_OWNER_CHECK</i>	
<i>WITHDRAW_ACCOUNT_LIQUIDITY_CALCULATION_FAILED</i>	
<i>WITHDRAW_ACCOUNT_SHORTFALL_PRESENT</i>	
<i>WITHDRAW_ACCUMULATED_BALANCE_CALCULATION_FAILED</i>	
<i>WITHDRAW_AMOUNT_LIQUIDITY_SHORTFALL</i>	
<i>WITHDRAW_AMOUNT_VALUE_CALCULATION_FAILED</i>	
<i>WITHDRAW_CAPACITY_CALCULATION_FAILED</i>	
<i>WITHDRAW_CONTRACT_PAUSED</i>	
<i>WITHDRAW_NEW_BORROW_INDEX_CALCULATION_FAILED</i>	
<i>WITHDRAW_NEW_BORROW_RATE_CALCULATION_FAILED</i>	
<i>WITHDRAW_NEW_SUPPLY_INDEX_CALCULATION_FAILED</i>	
<i>WITHDRAW_NEW_SUPPLY_RATE_CALCULATION_FAILED</i>	
<i>WITHDRAW_NEW_TOTAL_BALANCE_CALCULATION_FAILED</i>	

<i>WITHDRAW_NEW_TOTAL_SUPPLY_CALCULATION_FAILED</i>	
<i>WITHDRAW_TRANSFER_OUT_FAILED</i>	
<i>WITHDRAW_TRANSFER_OUT_NOT_POSSIBLE</i>	

Mainnet Contract Addresses:

Contract Name	Address
MoneyMarket	0x0eEe3E3828A45f7601D5F54bF49bB01d1A9dF5ea
Liquidator	0x45b1953611da41f841def7dceff318f83409739d
USDx	0xeb269732ab75a6fd61ea60b06fe994cd32a83549
USDx Interest Model	0x4c117243fd37e147229125570ca7dbcebccd2aa9
WETH	0xc02aaa39b223fe8d0a0e5c4f27ead9083c756cc2
WETH Interest Model	0x5ad006645b395fb6df87092dd75dcc5025388d78
Medianizer (MakerDao)	0x729D19f657BD0614b4985Cf1D82531c67569197B

Rinkeby Contract Addresses:

Contract Name	Address
MoneyMarket	0x5759F246E6b66B654c61Fec7427dc69E693E98fA
Liquidator	0xa737c16bC8312FD6f6998f4307488D3b942a77EE
USDx	0xaf21bb8ae7b7a5eec37964e478583cd486fd12e2

USDx Interest Model	0x75dA61eC1C18B562360E8639DAB02e67D0E8Aa70
WETH	0xC8b1a5ef2e19937dd6c0f804DF2e3efE9F093B1e
WETH Interest Model	0x09f3fb5630F916EcF848A3c292e8910f92Aab4d2