

Sherex: Decentralized Exchange (DEX) Code Audit

February 9th, 2025

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Audit results

Code:

<https://github.com/venus0311/sherex-platforom/tree/28a6fdb20e784c531444ba6c29aa89742bfe852a>

masterchef-v3

sherex-v3-contracts/projects/masterchef-v3/contracts/interfaces/IFarmBooster.sol ✓
sherex-v3-contracts/projects/masterchef-v3/contracts/interfaces/ILMPool.sol ✓
sherex-v3-contracts/projects/masterchef-v3/contracts/interfaces/ILMPoolDeployer.sol ✓
sherex-v3-contracts/projects/masterchef-v3/contracts/interfaces/IMasterChefV2.sol ✓
sherex-v3-contracts/projects/masterchef-v3/contracts/interfaces/IMasterChefV3.sol ✓
sherex-v3-contracts/projects/masterchef-v3/contracts/interfaces/INonfungiblePositionManager.sol ✓
sherex-v3-contracts/projects/masterchef-v3/contracts/interfaces/INonfungiblePositionManagerStruct.sol ✓
sherex-v3-contracts/projects/masterchef-v3/contracts/interfaces/IPancakeV3Pool.sol ✓
sherex-v3-contracts/projects/masterchef-v3/contracts/interfaces/IReceiver.sol ✓
sherex-v3-contracts/projects/masterchef-v3/contracts/interfaces/IWETH.sol ✓

sherex-v3-contracts/projects/masterchef-v3/contracts/keeper/MasterChefV3KeeperV1.sol ✓
sherex-v3-contracts/projects/masterchef-v3/contracts/keeper/MasterChefV3KeeperV2.sol ✓

sherex-v3-contracts/projects/masterchef-v3/contracts/libraries/SafeCast.sol ✓

sherex-v3-contracts/projects/masterchef-v3/contracts/receiver/MasterChefV3Receiver.sol ✓
sherex-v3-contracts/projects/masterchef-v3/contracts/receiver/MasterChefV3ReceiverV2.sol ✓

sherex-v3-contracts/projects/masterchef-v3/contracts/utils/Multicall.sol ✓

sherex-v3-contracts/projects/masterchef-v3/contracts/Enumerable.sol ✓

sherex-v3-contracts/projects/masterchef-v3/contracts/MasterChefV3.sol ✓

router

sherex-v3-contracts/projects/router/contracts/base/ApproveAndCall.sol ✓
sherex-v3-contracts/projects/router/contracts/base/ImmutableState.sol ✓
sherex-v3-contracts/projects/router/contracts/base/MulticallExtended.sol ✓
sherex-v3-contracts/projects/router/contracts/base/OracleSlippage.sol ✓
sherex-v3-contracts/projects/router/contracts/base/PeripheryPaymentsExtended.sol ✓
sherex-v3-contracts/projects/router/contracts/base/PeripheryPaymentsWithFeeExtended.sol ✓
sherex-v3-contracts/projects/router/contracts/base/PeripheryValidationExtended.sol ✓

sherex-v3-contracts/projects/router/contracts/interfaces/IApproveAndCall.sol ✓

sherex-v3-contracts/projects/router/contracts/interfaces/IImmutableState.sol ✓
sherex-v3-contracts/projects/router/contracts/interfaces/IMixedRouteQuoterV1.sol ✓
sherex-v3-contracts/projects/router/contracts/interfaces/IMulticallExtended.sol ✓
sherex-v3-contracts/projects/router/contracts/interfaces/IOracleSlippage.sol ✓
sherex-v3-contracts/projects/router/contracts/interfaces/IPeripheryPaymentsExtended.sol ✓
sherex-v3-contracts/projects/router/contracts/interfaces/IPeripheryPaymentsWithFeeExtended.sol ✓
sherex-v3-contracts/projects/router/contracts/interfaces/IQuoter.sol ✓
sherex-v3-contracts/projects/router/contracts/interfaces/IQuoterV2.sol ✓
sherex-v3-contracts/projects/router/contracts/interfaces/ISmartRouter.sol ✓
sherex-v3-contracts/projects/router/contracts/interfaces/IStableSwap.sol ✓
sherex-v3-contracts/projects/router/contracts/interfaces/IStableSwapFactory.sol ✓
sherex-v3-contracts/projects/router/contracts/interfaces/IStableSwapInfo.sol ✓
sherex-v3-contracts/projects/router/contracts/interfaces/IStableSwapRouter.sol ✓
sherex-v3-contracts/projects/router/contracts/interfaces/ITokenValidator.sol ✓
sherex-v3-contracts/projects/router/contracts/interfaces/IV2SwapRouter.sol ✓
sherex-v3-contracts/projects/router/contracts/interfaces/IV3SwapRouter.sol ✓
sherex-v3-contracts/projects/router/contracts/interfaces/IWETH.sol ✓

sherex-v3-contracts/projects/router/contracts/lens/MixedRouteQuoterV1.sol ✓
sherex-v3-contracts/projects/router/contracts/lens/Quoter.sol ✓
sherex-v3-contracts/projects/router/contracts/lens/QuoterV2.sol ✓
sherex-v3-contracts/projects/router/contracts/lens/TokenValidator.sol ✓

sherex-v3-contracts/projects/router/contracts/libraries/Constants.sol ✓
sherex-v3-contracts/projects/router/contracts/libraries/PoolTicksCounter.sol ✓
sherex-v3-contracts/projects/router/contracts/libraries/SmartRouterHelper.sol ✓

sherex-v3-contracts/projects/router/contracts/SmartRouter.sol ✓
sherex-v3-contracts/projects/router/contracts/StableSwapRouter.sol ✓
sherex-v3-contracts/projects/router/contracts/V2SwapRouter.sol ✓
sherex-v3-contracts/projects/router/contracts/V3SwapRouter.sol ✓

v3-core

sherex-v3-contracts/projects/v3-core/contracts/interfaces/callback/IPancakeV3FlashCallback.sol ✓
sherex-v3-contracts/projects/v3-core/contracts/interfaces/callback/IPancakeV3MintCallback.sol ✓
sherex-v3-contracts/projects/v3-core/contracts/interfaces/callback/IPancakeV3SwapCallback.sol ✓

sherex-v3-contracts/projects/v3-core/contracts/interfaces/pool/IPancakeV3PoolActions.sol ✓
sherex-v3-contracts/projects/v3-core/contracts/interfaces/pool/IPancakeV3PoolDerivedState.sol ✓
sherex-v3-contracts/projects/v3-core/contracts/interfaces/pool/IPancakeV3PoolEvents.sol ✓
sherex-v3-contracts/projects/v3-core/contracts/interfaces/pool/IPancakeV3PoolImmutables.sol ✓
sherex-v3-contracts/projects/v3-core/contracts/interfaces/pool/IPancakeV3PoolOwnerActions.sol ✓
sherex-v3-contracts/projects/v3-core/contracts/interfaces/pool/IPancakeV3PoolState.sol ✓

sherex-v3-contracts/projects/v3-core/contracts/interfaces/IERC20Minimal.sol ✓
sherex-v3-contracts/projects/v3-core/contracts/interfaces/IPancakeV3Factory.sol ✓
sherex-v3-contracts/projects/v3-core/contracts/interfaces/IPancakeV3Pool.sol ✓
sherex-v3-contracts/projects/v3-core/contracts/interfaces/IPancakeV3PoolDeployer.sol ✓

sherex-v3-contracts/projects/v3-core/contracts/libraries/BitMath.sol ✓
sherex-v3-contracts/projects/v3-core/contracts/libraries/FixedPoint128.sol ✓
sherex-v3-contracts/projects/v3-core/contracts/libraries/FixedPoint96.sol ✓
sherex-v3-contracts/projects/v3-core/contracts/libraries/FullMath.sol ✓
sherex-v3-contracts/projects/v3-core/contracts/libraries/LiquidityMath.sol ✓
sherex-v3-contracts/projects/v3-core/contracts/libraries/LowGasSafeMath.sol ✓
sherex-v3-contracts/projects/v3-core/contracts/libraries/Oracle.sol ✓
sherex-v3-contracts/projects/v3-core/contracts/libraries/Position.sol ✓
sherex-v3-contracts/projects/v3-core/contracts/libraries/SafeCast.sol ✓
sherex-v3-contracts/projects/v3-core/contracts/libraries/SqrtPriceMath.sol ✓
sherex-v3-contracts/projects/v3-core/contracts/libraries/SwapMath.sol ✓
sherex-v3-contracts/projects/v3-core/contracts/libraries/Tick.sol ✓
sherex-v3-contracts/projects/v3-core/contracts/libraries/TickBitmap.sol ✓
sherex-v3-contracts/projects/v3-core/contracts/libraries/TickMath.sol ✓
sherex-v3-contracts/projects/v3-core/contracts/libraries/TransferHelper.sol ✓
sherex-v3-contracts/projects/v3-core/contracts/libraries/UnsafeMath.sol ✓

sherex-v3-contracts/projects/v3-core/contracts/PancakeV3Factory.sol ✓
sherex-v3-contracts/projects/v3-core/contracts/PancakeV3Pool.sol ✓
sherex-v3-contracts/projects/v3-core/contracts/PancakeV3PoolDeployer.sol ✓

v3-lm-pool

sherex-v3-contracts/projects/v3-lm-pool/contracts/interfaces/IMasterChefV3.sol ✓
sherex-v3-contracts/projects/v3-lm-pool/contracts/interfaces/IPancakeV3LmPool.sol ✓
sherex-v3-contracts/projects/v3-lm-pool/contracts/interfaces/IPancakeV3LmPoolDeveloper.sol ✓

sherex-v3-contracts/projects/v3-lm-pool/contracts/libraries/LmTick.sol ✓

sherex-v3-contracts/projects/v3-lm-pool/contracts/PancakeV3LmPool.sol ✓
sherex-v3-contracts/projects/v3-lm-pool/contracts/PancakeV3LmPoolDeployer.sol ✓

v3-periphery

sherex-v3-contracts/projects/v3-periphery/contracts/base/BlockTimestamp.sol ✓
sherex-v3-contracts/projects/v3-periphery/contracts/base/ERC721Permit.sol ✓
sherex-v3-contracts/projects/v3-periphery/contracts/base/LiquidityManagement.sol ✓
sherex-v3-contracts/projects/v3-periphery/contracts/base/Multicall.sol ✓
sherex-v3-contracts/projects/v3-periphery/contracts/base/PeripheryImmutableState.sol ✓
sherex-v3-contracts/projects/v3-periphery/contracts/base/PeripheryPayments.sol ✓

sherex-v3-contracts/projects/v3-periphery/contracts/base/PeripheryPaymentsWithFee.sol ✓

sherex-v3-contracts/projects/v3-periphery/contracts/base/PeripheryValidation.sol ✓

sherex-v3-contracts/projects/v3-periphery/contracts/base/PoolInitializer.sol ✓

sherex-v3-contracts/projects/v3-periphery/contracts/base/SelfPermit.sol ✓

sherex-v3-contracts/projects/v3-periphery/contracts/interfaces/external/IERC1271.sol ✓

sherex-v3-contracts/projects/v3-periphery/contracts/interfaces/external/IERC20PermitAllowed.sol ✓

sherex-v3-contracts/projects/v3-periphery/contracts/interfaces/external/IWETH9.sol ✓

sherex-v3-contracts/projects/v3-periphery/contracts/interfaces/IERC20Metadata.sol ✓

sherex-v3-contracts/projects/v3-periphery/contracts/interfaces/IERC721Permit.sol ✓

sherex-v3-contracts/projects/v3-periphery/contracts/interfaces/IMulticall.sol ✓

sherex-v3-contracts/projects/v3-periphery/contracts/interfaces/INonfungiblePositionManager.sol ✓

sherex-v3-contracts/projects/v3-periphery/contracts/interfaces/INonfungibleTokenPositionDescriptor.sol ✓

sherex-v3-contracts/projects/v3-periphery/contracts/interfaces/IPeripheryImmutableState.sol ✓

sherex-v3-contracts/projects/v3-periphery/contracts/interfaces/IPeripheryPayments.sol ✓

sherex-v3-contracts/projects/v3-periphery/contracts/interfaces/IPeripheryPaymentsWithFee.sol ✓

sherex-v3-contracts/projects/v3-periphery/contracts/interfaces/IPoolInitializer.sol ✓

sherex-v3-contracts/projects/v3-periphery/contracts/interfaces/IQuoter.sol ✓

sherex-v3-contracts/projects/v3-periphery/contracts/interfaces/IQuoterV2.sol ✓

sherex-v3-contracts/projects/v3-periphery/contracts/interfaces/ISelfPermit.sol ✓

sherex-v3-contracts/projects/v3-periphery/contracts/interfaces/ISwapRouter.sol ✓

sherex-v3-contracts/projects/v3-periphery/contracts/interfaces/ITickLens.sol ✓

sherex-v3-contracts/projects/v3-periphery/contracts/interfaces/IV3Migrator.sol ✓

sherex-v3-contracts/projects/v3-periphery/contracts/lens ✓

– These contracts are not designed to be called on-chain. They simplify fetching on-chain data from off-chain.

sherex-v3-contracts/projects/v3-periphery/contracts/libraries/BytesLib.sol ✓

sherex-v3-contracts/projects/v3-periphery/contracts/libraries/CallbackValidation.sol ✓

sherex-v3-contracts/projects/v3-periphery/contracts/libraries/ChainId.sol ✓

sherex-v3-contracts/projects/v3-periphery/contracts/libraries/HexStrings.sol ✓

sherex-v3-contracts/projects/v3-periphery/contracts/libraries/LiquidityAmounts.sol ✓

sherex-v3-contracts/projects/v3-periphery/contracts/libraries/NFTDescriptor.sol ✓

sherex-v3-contracts/projects/v3-periphery/contracts/libraries/NFTSVG.sol ✓

sherex-v3-contracts/projects/v3-periphery/contracts/libraries/OracleLibrary.sol ✓

sherex-v3-contracts/projects/v3-periphery/contracts/libraries/Path.sol ✓

sherex-v3-contracts/projects/v3-periphery/contracts/libraries/PoolAddress.sol ✓

sherex-v3-contracts/projects/v3-periphery/contracts/libraries/PoolTicksCounter.sol ✓

sherex-v3-contracts/projects/v3-periphery/contracts/libraries/PositionKey.sol ✓

sherex-v3-contracts/projects/v3-periphery/contracts/libraries/PositionValue.sol ✓

sherex-v3-contracts/projects/v3-periphery/contracts/libraries/SqrtPriceMathPartial.sol ✓

sherex-v3-contracts/projects/v3-periphery/contracts/libraries/TokenRatioSortOrder.sol ✓

sherex-v3-contracts/projects/v3-periphery/contracts/libraries/TransferHelper.sol ✓

sherex-v3-contracts/projects/v3-periphery/contracts/NFTDescriptorEx.sol ✓
sherex-v3-contracts/projects/v3-periphery/contracts/NonfungiblePositionManager.sol ✓
sherex-v3-contracts/projects/v3-periphery/contracts/NonfungibleTokenPositionDescriptor.sol ✓
sherex-v3-contracts/projects/v3-periphery/contracts/NonfungibleTokenPositionDescriptorOffChain.sol ✓
sherex-v3-contracts/projects/v3-periphery/contracts/NonfungibleTokenPositionDescriptorOffChainV2.sol ✓
sherex-v3-contracts/projects/v3-periphery/contracts/SwapRouter.sol ✓
sherex-v3-contracts/projects/v3-periphery/contracts/V3Migrator.sol ✓

General notes

A lot of contracts use `pragma solidity ^0.8.10`; consider using a fixed pragma instead of a floating one.

Disclaimer

This audit report has been prepared by Coinsult's experts at the request of the client. It presents the results of both static analysis and manual code review. The purpose of the audit is to assess whether the functions operate as intended and to identify any potential security issues within the smart contract. The information contained in this report is intended solely to help understand the risks associated with the smart contract and to provide guidance for the development team on how the contract might be improved by addressing identified issues.

Important Notice

This audit is based on a PancakeSwap fork with some adjustments. It is assumed that the original PancakeSwap code is secure and has been well established over time. Accordingly, the focus of this audit is exclusively on the changes and adjustments made to the PancakeSwap code. The audit does not re-evaluate the security or functionality of the underlying PancakeSwap implementation.

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