# Decentralized Exchange

PolyFinTech 100 API Hackathon 2022

# Context

- Decentralized Finance (DeFi) using digital currencies is one of the fastest growing use cases of Distributed Ledger Technology (DLT). Decentralized exchanges (DEXs) form the core of the DeFi ecosystem by allowing peer-to-peer trading of digital assets without the need for intermediaries

- Automated market makers (AMMs) are a type of DEX protocol that rely on liquidity pools based on smart contracts rather than a traditional market of buyers and sellers. Instead of using an order book like a traditional exchange, assets are priced according to a pricing algorithm

- AMMs rely on Liquidity Providers (LPs) to add funds to the Liquidity Pools that users can trade against. In return for providing liquidity to the protocol, LPs earn fees from the trades that happen in their pool

- Over the last few years, several popular DEXs such as Uniswap, Balancer, Curve etc. have emerged in the industry that use different pricing models to optimize the performance of their AMM protocols

# Problem Statement

**Identify areas of improvements and optimizations for better efficiency, performance and risk management of public AMM protocols**

Despite their emergence in recent years, there are several shortcomings and challenges in existing AMM models. Some examples include:

- LPs that lock their liquidity in AMMs may incur an impermanent loss of their funds. This happens when the AMM pricing algorithm creates a divergence between the price of an asset within a liquidity pool and the price of that asset outside of the pool
- Typically in trading pools, the majority of assets often sit unused, as they're not needed unless there are unusually large trades. This may lead to high capital inefficiency as only a small percentage of assets may actually be used to facilitate trades
- In most AMMs, LPs are required to deposit multiple assets in equal ratio to be able to participate in market making, thus exposing themselves to additional risks

Participants should evaluate various aspects of public AMM protocols and propose enhancements / new models that could help attract more LPs to stake their assets in liquidity pools.