**Overview:** Synthetix is a decentralized exchange (DEX) that enables trading of various assets in a decentralized manner using blockchain technology (Ethereum). It does so by creating synthetic versions of the actual assets, which is pegged in terms of price, and is backed by Synthetix's token (SNX) as collateral. The Synthetix protocol is built on top of the Ethereum protocol

**What is a synthetic?**

* Think of it as an avatar of a real thing
* For example, Mark Sanchez is a real asset. But the Mark Sanchez avatar in Madden 2011 is the synthetic of the real Mark Sanchez. The synthetic has stats the mirror that of the real thing
* Likewise, the synthetic here is a virtual representation of the actual asset. The synthetic shares the real time price of the asset

**What synthetics can Synthetix make?**

* Anything. But right now, it allows minting of synthetic stocks, commodities, and cryptos

**How does it work?**

* Each synthetic asset is backed by a Synthetix token in an **overcollateralized**manner
  + 750% C-Ratio
* Keeps the trading decentralized by using a system of minting and burning synthetic assets
  + Instead of exchanging the synthetic asset with a central entity, synthetic assets are minted via mintr and burned whenever a user wants to exit the synthetic position for real world value
  + Real USD -> Buy SNX tokens -> Collateralize SNX tokens (750%) to mint synthetic asset -> trade synthetic assets for w.e reason -> cash out by burning synthetic assets and retrieving SNX token -> Sell SNX tokens for real USD...or something
  + The prices of the assets are ported to Synthetix via price oracles. The hope is to use ChainLink to use decentralized oracle.
* When a synthetic asset is created, it can be thought of as "global debt creation"
  + Apparently, this is standard...MakerDAO has this thing too
  + Here is an example with Alice and Bob
  + Alice locks up $750 USD to create 1 sBTC and Bob locks up $750 USD to create 1 sEth (*The numbers are going to be unrealistic...*)
  + This means that $1500 (750\*2) worth of global debt is created
  + Also, both Alice and Bob contributed to 50% of the global debt
  + If the value of the Alice's 1 sBTC goes up (say by $500) and the value of the sEth reamins the same, then she makes a profit and will need to collateralize less USD to maintain C-Ratio
  + At the same time, Bob now needs to contribute more the his collateralized ammount
  + Basically, the global debt increases from $1500 to $2000 (the original $1500 + the $500 increase)
  + And since Alice and Bob both account for 50% of the global debt, they are responsible for covering $1000 each
  + Alice covers by default since the value of her synthetic asset increased
  + Bob however now needs to come up with more collateral in order to cover the $1000 he now owes (50% \* $2000 instead of 50% \* $1500)
  + Review litepaper and global debt video for better explanation

**Unique things about Synthetix**

* No liqudiation mechanism...yet
  + This is why there is currently a huge C-ratio requirement
* Unlike MakerDAO and other DEX's, Synthetix create not only synthetic assets for long position, but also inverse synthetic assets for short position.
  + Opens doors for more complete "DEFI experience"
* Not complete product yet, but is on track

Sources:

* <https://www.youtube.com/watch?v=5vVb02obDDo> (Great Overview)
* <https://docs.synthetix.io/litepaper> (Paper)
* <https://www.youtube.com/watch?v=vl4WRFo3hjg> (Synthetix and Global Debt)