Bicycling is witnessing a sudden renaissance as multiple factors converge, including warmer weather, e-bike technology and the easing of COVID-19 lockdowns. With public transport services reduced and people refraining from mass transit due to fear of contracting the coronavirus, current circumstances are boosting the sale and adoption of all kinds of bikes. In a study done by Swapfiets, a popular bike rental service, 42 percent of 741 new customers in the first quarter of 2020 reported that their decision to start using Swapfiets was influenced by the pandemic.

Introducing Skoots - The idea revolves around a decentralized network of bike owners and users. Anyone may join the network either as someone who owns a bike or someone who simply wants to use a bike. The bike owners, or *Skooters* will be able to allow other users, called *Skooties*, to use their bike for a predetermined fee. 'Skooties' (users) will be able to park the bike anywhere within a certain perimeter after usage. Thereby, essentially enabling ‘real’ bike sharing.

How it works:

1. **Network -** There will be two types of participants in the network, namely *'Skooters'* - those who own bikes and '*Skooties'* - those who use bikes.
   Skooters can join the network by attaching an IoT device to their bike. This device will be able to provide GPS tracking and an interface for Skooties to use the bike. It will also act as a lock when the bike is not being used. The device will be powered by a rechargeable battery and include an alarm which will go if the bike is tampered with. Skooters can also use other or even their own bikes.
   Skooties can join the network by simply signing up via a web-interface/app. They will then be able to unlock a bike using an app on their phone and the IoT device. They will pay using electronic payment systems such as Paypal or even Bitcoin. In return, they will receive points called ‘*skoins*', which will be added to their accounts. Skoins will act as the currency to be paid with when using a bike.

2. **Transactions -** Transactions will be made prior to starting the ride. The Skootie will transfer a certain amount of skoins to the Skooters account to be able to unlock the bike for a certain period. The transaction will be broadcasted to all nodes and pushed to the pending transactions data structure. The transaction will be signed by the Skootie and will have to be signed by the Skooter before it can be added to a block. Since the transaction will be stored by Skooter, it will be pointless to alter or remove the transaction from the pending transactions collection. The Skooter can simply sign the transaction and allocate a forging fee, which will make it ready for forgers to add into a block.

3. **Consensus -** Proof of Stake will be implemented as the consensus procedure. Both Skooters and Skooties will be able to forge blocks. Forgers will be rewarded by the Skooters/Recipients.

4. **Responsibility -** Before a skooter can join the network by buying the IoT device, their bike will be examined at the PoS. Other quality checks will be added later on.

5. **Privacy -** All data will be pseudonymous. Skooters will only know where their bike was unlocked, where it was parked and how long was it used. Similarly, Skooties will not know whose bike they are using. However, this raises the question of how the security of bikes will be ensured. One solution is that Skooties will have to share a picture after using a bike. (Other solutions are being discussed)

Conclusion - A robust system that enables bike sharing and ensures security and quality for users will prevent thousands of bikes rusting away because of lack of usage and being dumped into landfills. More users will lead to lower costs, which will lower the demand of new bikes as well as theft.