Summary IOTA Alexander Wandrup

IOTA is a blockchain that uses the currency IOTA. IOTA is a blockchain that does not use mining to validate transactions. Therefore all IOTA's are created at network creation given to the investors of the network. IOTA incentives comes from being able to be part of the network by being a node. This in turn keeps the network feeless.

The tangle is the data structure behind IOTA. It is a directed graph that holds transactions. Each vertex in the graph represents a transaction. Every new transaction added appoves the last two vertexes in the graph and then adds a new edge to the graph.

Unapproved transactions are called tips, and every new transaction need to choose two tips to approve. A problem with this algorithm are what is called lazy tips. Those are tips that only approve old rather than the more recent transactions. We want to avoid approving these as that causes no new transactions to be approved. If we use a random approval algorithm for selecting new tips to approve lazy tips are just as likely to be approved as non lazy ones. Enforcing new tips to only approve new transaction does not work as there is no reliable way to tell when a transaction came in. Also only selecting recent transaction could cause centralization as it would allow transaction to choose who to approve. A way to solve this is to have a walker walk across the graph. When the walker are to chose the next transaction to walk to we can then look at the number of approvers the transaction has plus one and then choose that one to walk further. The problem with this is that it will only cause the same transactions to be approved every time causing to many unapproved tips. Therefore only a bias towards heavy transaction is needed instead. The more approvals a node has the more likely it is to be chosen by the walker. This Is also a solution to avoid double spending. Another way to IOTA prevents is by using