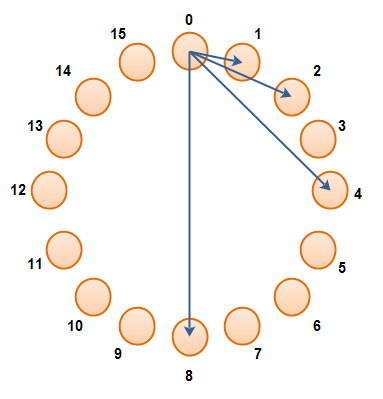
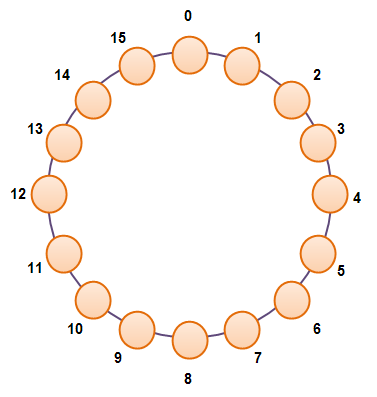
A peer in a P2P network needs to be able to communicate with the other peers in the network. In order to do so, it must first be able to find the other peers in the network. To find the other peers in the network, each peer has a routing table. The routing table contains references to a number of peers in the network.

In a P2P network with millions of peers, each peer cannot hold a complete table of all other peers in the network. Such a table would take up a lot of resources on each peer, and would also be almost impossible to keep up to date, as peers join and leave the network.

In order to get the peers in the P2P network to communicate correctly, we therefore have to solve two problems:

1. Peer Identification (GUID)
2. Peers create a GUID themselves – create a smart algorithm
3. Peers are assigned a GUID when they join an existing network – one peer already in the network generate a GUID.
4. Peer Location



|  |  |  |
| --- | --- | --- |
| Cell Index | Referenced GUID | GUID Distance |
| 0 | 1 | 1  (20) |
| 1 | 2 | 2  (21) |
| 2 | 4 | 4  (22) |
| 3 | 8 | 8  (23) |