Abstract

As megacorps control more and more of our data on the Internet, the demand for a more decentralized Internet arises. An incentive for a decentralized website is a social networking site. There are already several decentralized social networks, but none of these networks use the less complicated, browser built-in HTML5 technologies. In this thesis the HTML5 technologies, WebRTC, Web sockets, Local storage and Web workers, are discussed in detail. Followed by an implementation combining these technologies into a decentralized social networking website. This implementation is tested by measuring the performance of a single user, the performance of a full-mesh network and the performance of a full-mesh network spread over multiple locations to simulate real latency. The results and implementation show that, although the website is not yet market-ready, it is relatively easy to create a decentralized social networking site with nothing but browser technologies. This could open the door for web developers to create a range of decentralized websites, which in turn, could contribute to the decentralization of the Internet as a whole.

Github repository - https://github.com/aijkoopmans/decentralized
Demo - http://decentral.herokuapp.com/