

## Peer-to-Peer Networking

### *Exercises for lecture P2P Security, Fairness and Trust*

#### **Task 1: Security and anonymity concepts in P2P systems**

Explain the following P2P networking related matters:

- Darknet
- Mix-net (Chaumian mix)
- Onion routing

#### **Task 2: Tarzan: a P2P anonymizing network layer**

Tarzan is a peer-to-peer anonymous IP network overlay. Because it provides IP service, Tarzan is general-purpose and transparent to applications. A good starting point to read (provided on the exercise page): Freedman and Morris. *Tarzan: a peer-to-peer anonymizing network layer*.<sup>1</sup>

Find out the following issues concerning Tarzan system:

- What types of anonymity problems it targets to solve?
- Explain the basic tunneling and packet forwarding method?
- How to discover peers in a secure and anonymous way?
- Cover-traffic technique?

#### **References:**

<sup>1</sup>Freedman, M. J. and Morris, R. 2002. Tarzan: a peer-to-peer anonymizing network layer. In Proceedings of the 9th ACM Conference on Computer and Communications Security (Washington, DC, USA, November 18 - 22, 2002). V. Atluri, Ed. CCS '02. ACM Press, New York, NY, 193-206. DOI= <http://doi.acm.org/10.1145/586110.586137>