

## Exercise Sheet 1

### Exercise 1 (Different Technologies)

In the cloud computing course, several distributed computing technologies are discussed. The objectives of these technologies are similar but their implementation is different. For an understanding of these technologies, it is helpful to do some investigation.

- Virtualization
- Web Services
- Client-Server
- Distributed Computing
- Meta Computing
- Cluster Computing
- Grid Computing
- Peer-to-Peer
- Cloud Computing
- Ubiquitous Computing / Pervasive Computing

Investigate the meaning of these terms. Write for each one of these terms a few (3-4) sentences. The differences and interrelationships should be made clear. Be short and precise and do not write novels.

### Exercise 2 (Different Client-Server Scenarios)

Company X runs 10,000 computer workplaces.

- Scenario 1: Fat clients (PC)
  - Power consumption per desktop: 400 watts
  - Power consumption per screen: 100 watts
- Scenario 2: Thin clients
  - Power consumption per thin client: 30 watts
  - Power consumption per screen: 100 watts
  - Power consumption per server blade: 400 watts
  - Each server blade has enough resources to run 40 virtual desktops

What are the electricity costs per year for 24/7 operation when the electricity price is 0,24€/kWh?

### Exercise 3 (Types of Clients)

Four types of clients exist in the client-server model. Describe the four types. Focus the differences.