Solution of Exercise Sheet 3

Exercise 1   (Cloud Services)

1. In which category of cloud services is human creativity offered for low cost or donated from volunteers?

   Humans as a Service (HuaaS).

2. Why is the term *Cloud Operating System* misleading?

   For using a Cloud operating system, a computer with a browser and therefore with an operating system too is required. The native operating system is not replaced. Only the applications and user data are outsourced.

3. In which category of cloud services can customers run virtual server instances and even realize virtual data centers?

   Infrastructure as a Service (IaaS).

4. What is a PaaS, and what can customers do with it?

   The provider runs one or more scalable runtime environment(s). The customers run their own web applications inside the infrastructure of the service provider.

5. What do customers need to use software services?

   Only a browser.

6. What is the main difference between Public and Private Cloud services?
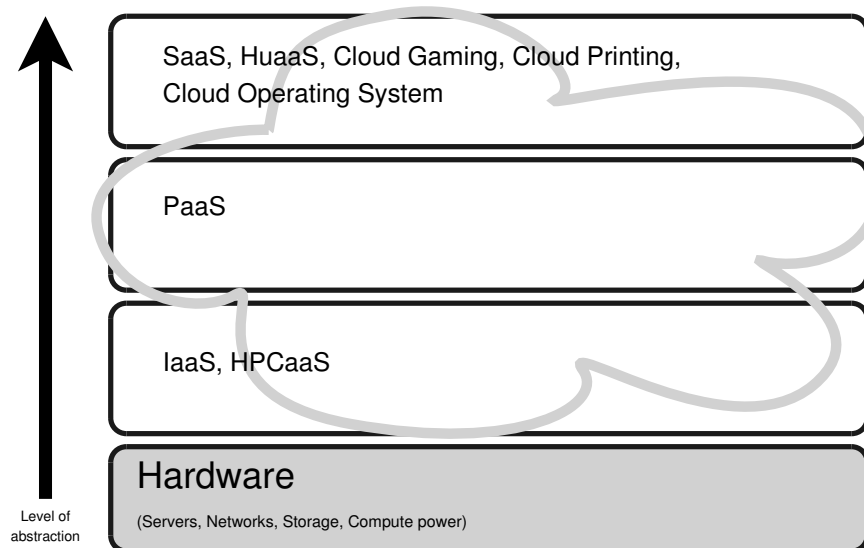
   In a Public Cloud, customer and provider belong to different organizations.

   In a Private Cloud, customer and provider belong to the same organization.

7. What is a Hybrid Cloud?

   Public and Private Cloud services are used together.

Exercise 2   (Service Categories and Offerings)

1. Assign these categories of cloud services to the layers in the figure

   - PaaS
   - Cloud Gaming
   - Cloud Printing
   - IaaS
   - HPCaaS
   - HuaaS
   - Cloud Operating System
   - SaaS

2. Assign these cloud service offerings to the layers in the figure

   - Google App Engine $\implies$ *PaaS*
   - Google Cloud Print $\implies$ *Cloud Printing = SaaS*
   - Amazon Elastic Compute Cloud $\implies$ *IaaS*
   - Amazon Mechanical Turk $\implies$ *HuaaS = SaaS*
   - eyeOS $\implies$ *Cloud Operating System = SaaS*
   - EC2 Cluster Compute Instances $\implies$ *HPCaaS = IaaS*
   - Google Apps $\implies$ *SaaS*
   - OnLive $\implies$ *Cloud Gaming = SaaS*
   - Amazon Simple Storage Service $\implies$ *IaaS*
   - Windows Azure $\implies$ *PaaS* and *IaaS*
   - Microsoft Office 365 $\implies$ *SaaS*
   - AWS Elastic Beanstalk $\implies$ *PaaS*