**Naming**

**Naming services**

* Store collections of <name, attribute>- pairs
* Collection is often subdivided into naming contexts
* Different use cases
  + Identification of an address or attribute for a name (DNS)
  + Identification of a machine for a service (RPC)
  + Identification of a machine for an object (RMI)
* Major operation is to resolve the name to a physical address
* Decouples logical and physical concepts

**DNS: The Domain Name System**

* Cornerstone of the Internet (like a phone book)
* Maps domain names to IP addresses
* Example: www.example.com to IP address of host serving this domain, e.g., 93.184.216.119
* A world-wide distributed database of name servers
* Used by clients (browser, email) to resolve names
* Developed to replace centralized resolution scheme

**Name server / DNS-Server**

* Enables the resolution of domain names
* One primary, multiple secondary name servers for redundancy
* Caches results for repeated requests
* Authoritative name server
  + Is responsible for a domain, each domain has at least one
  + Maintains a list of DNS records in a zone file
* Non-authoritative name server
  + Receives information about domains from other name servers
  + Forwards queries, answers with cached results

**Resolver: DNS-Client**

* A software module able to query a name server
* Interface between application and name server
* Can work **recursively** or **iteratively**