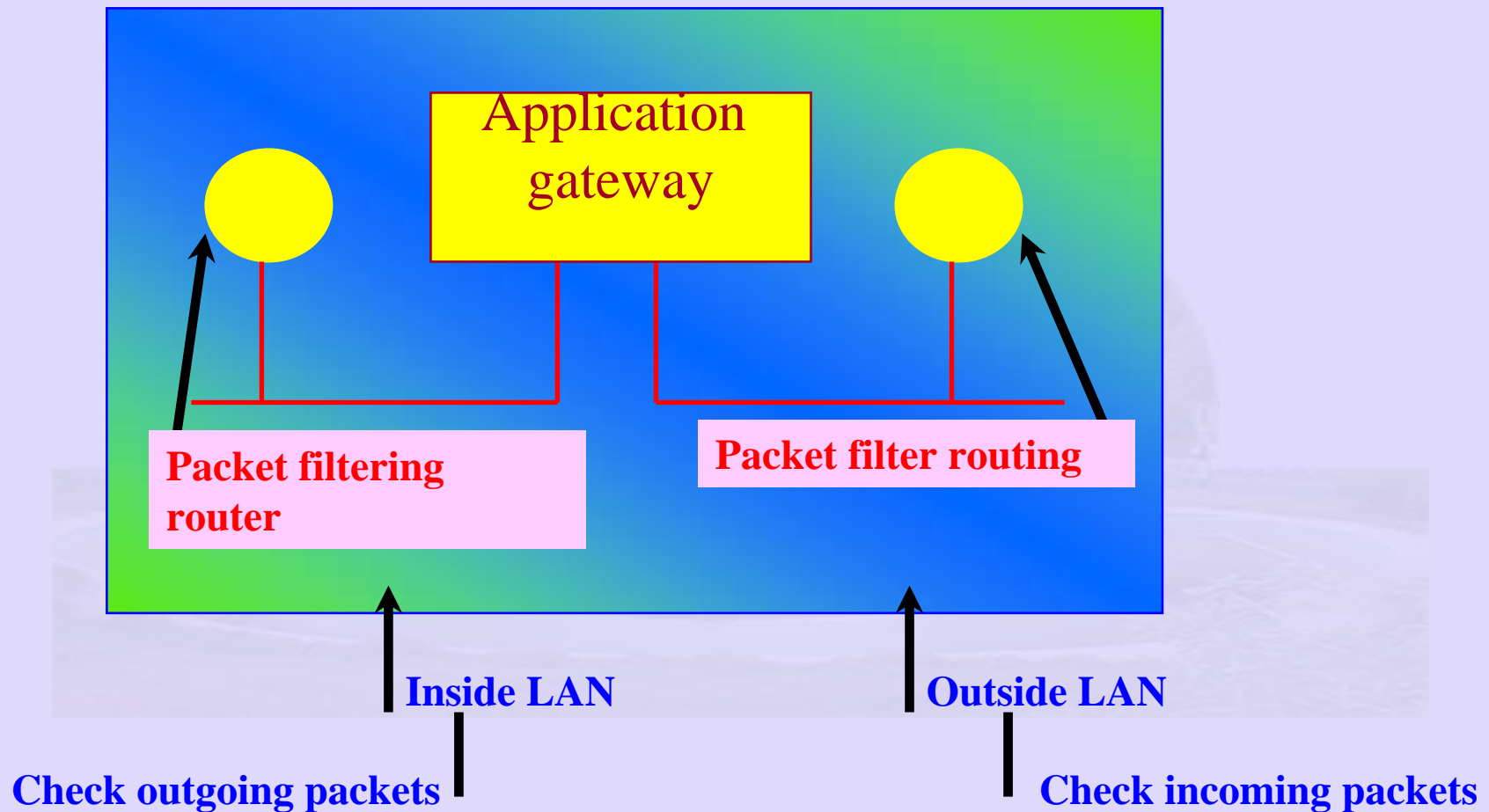


Firewalls

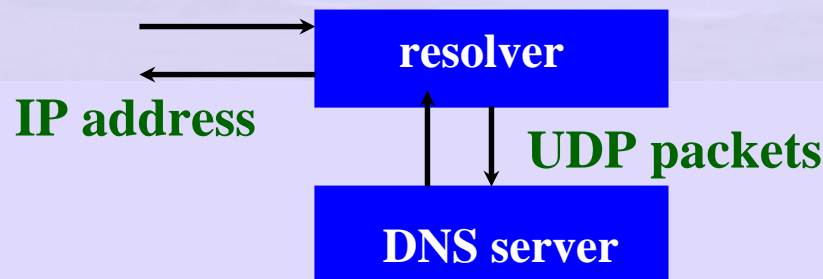


a can send to b only via application Gateway.

Example: e-mail can decide what to do

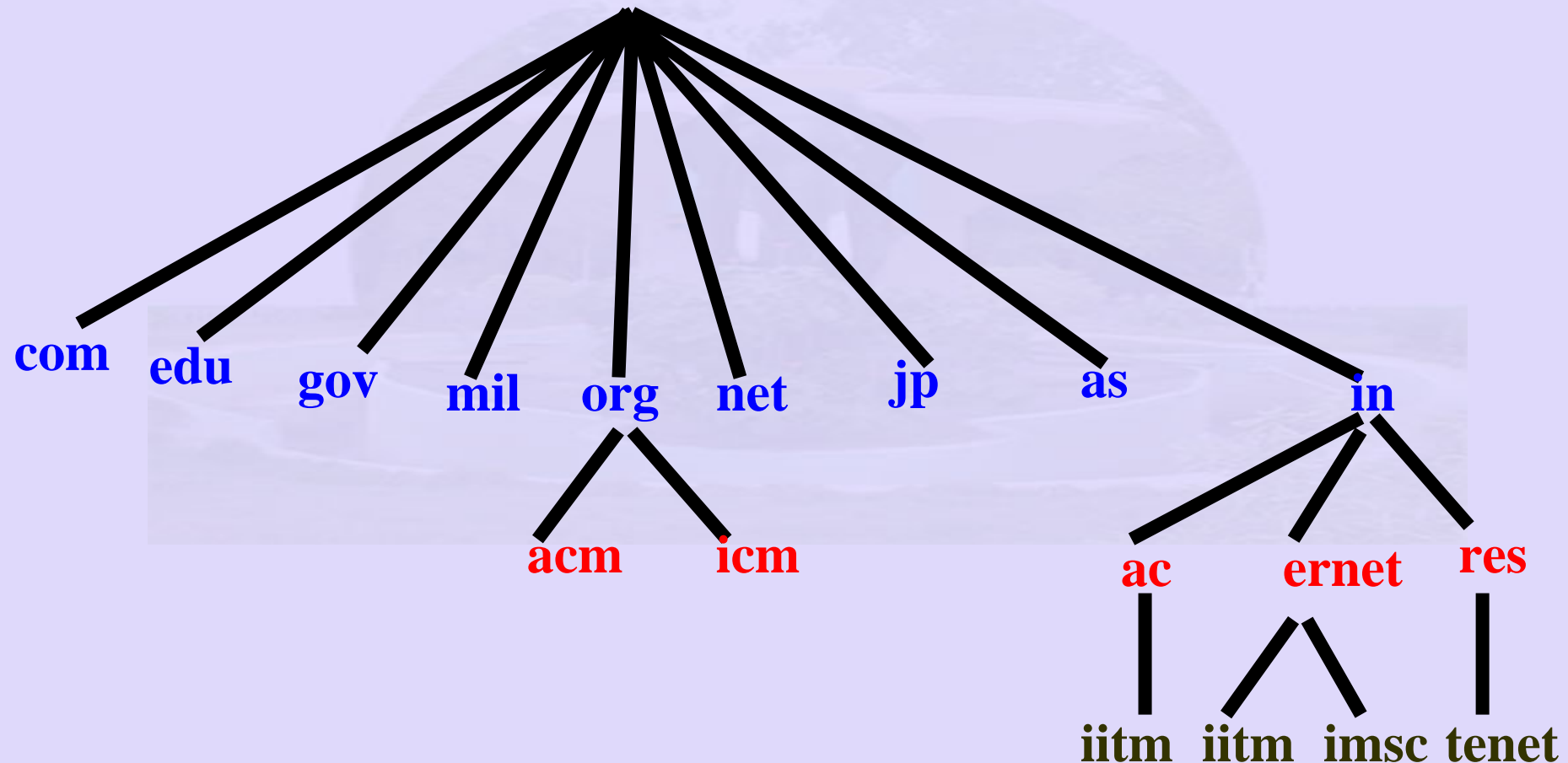
Domain Name Systems

- Originally hosts text fetched by all machines at night
 - Exploding Internet
 - Impractical
- Hierarchical domain based naming scheme
 - distributed **DBMS** for implementing the same
 - Map host names and e-mail destination to **IP addresses**



Now application makes TCP connections to the IP address

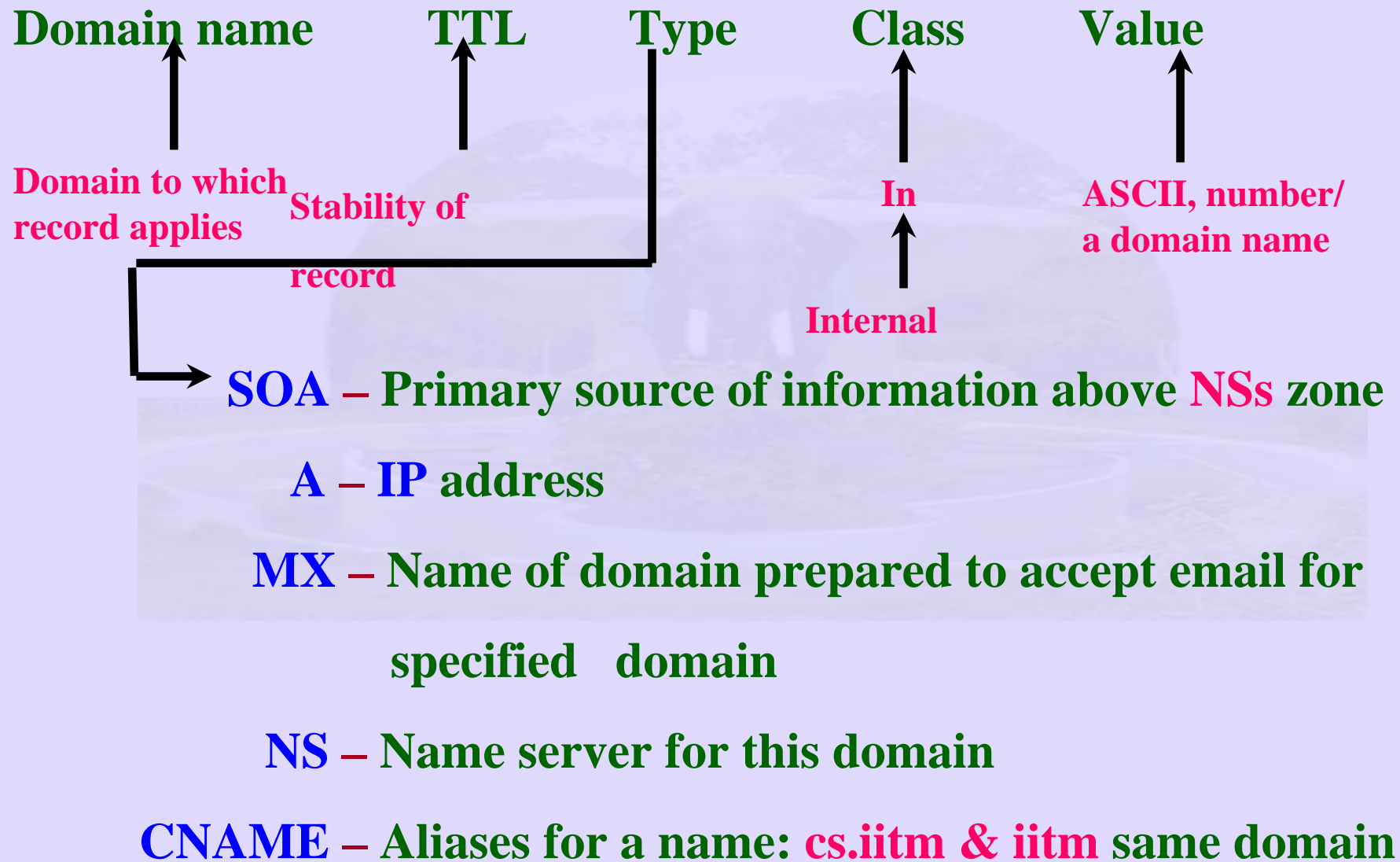
Domain Name System Hierarchy



Domain Name System (contd.)

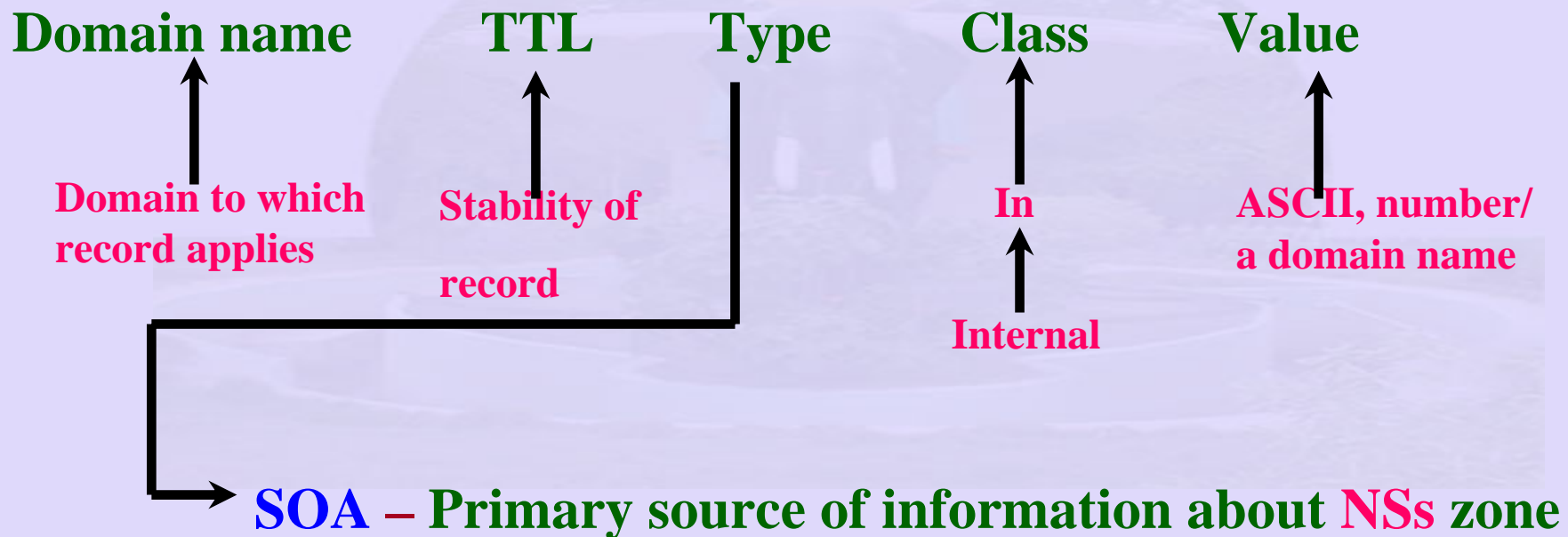
- Insertion into the tree
- **Example:** Insert peacock into **iitm.ac.in**
- **Permission from admin at iitm.ac.in**
- **Database in the form of resource records for each host/domain**
- **When a resolver gives a domain name to DNS,**
 - **It gets back resource records associated with that name**
 - **Domain name case insensitive**
- **Component can be upto 63 characters long**
- **hiphens allowed**
- *** # ? not allowed**

Resource record is a five type:



Domain Name System (contd.)

Resource record is a five type:



A – IP address

MX – Name of domain prepared to accept email for

specified domain

Domain Name System (contd.)

NS – Name server for this domain

CNAME – Aliases for a name: **cs.iitm & iitm** same domain

PTR – Alias for **IP** address

MINFO – **Pentium III, unix**

Mtech 2k.com 86400 IN MX peacock.iitm.ernet.in

Entry in the com dB

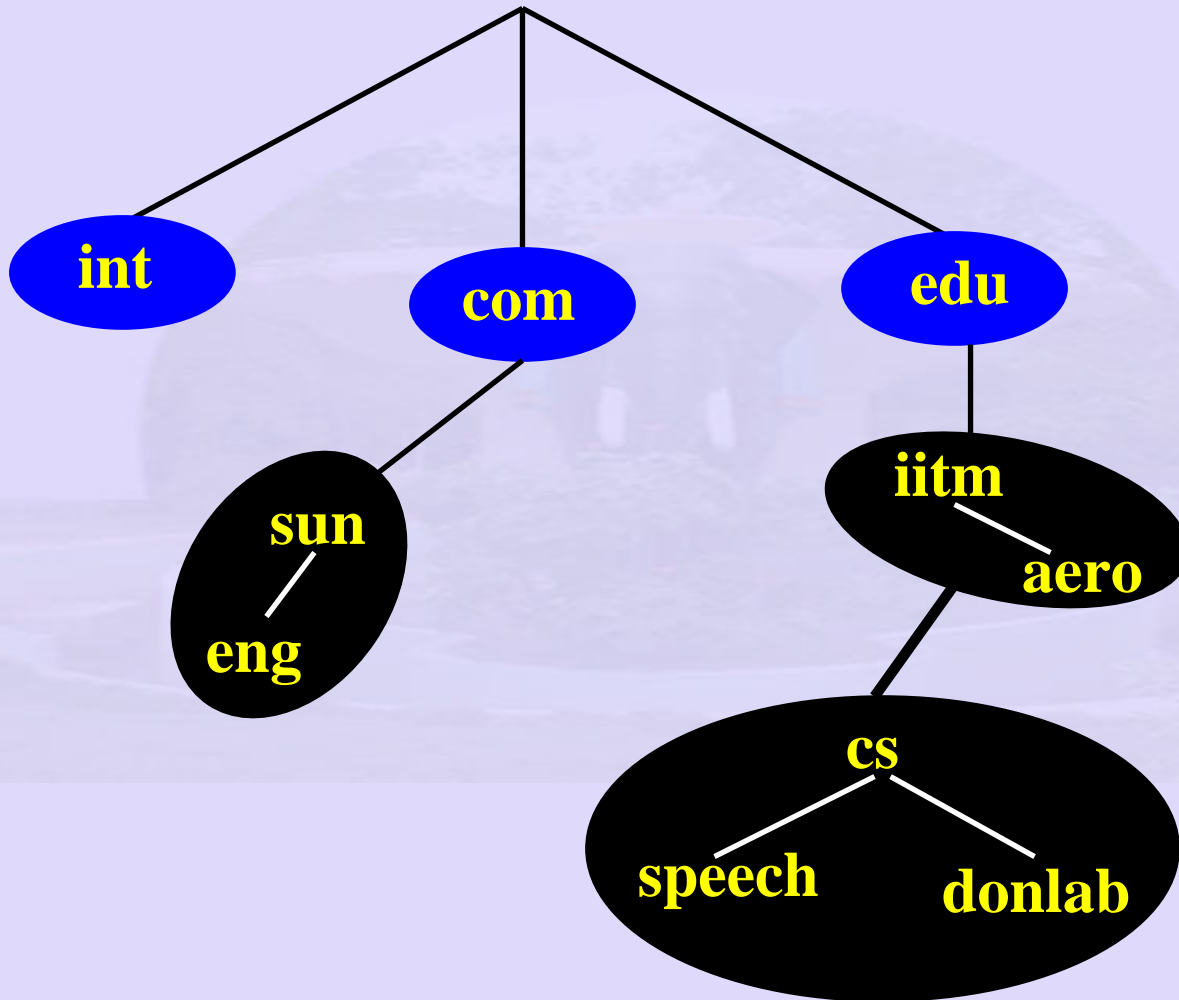
Arrangement with peacock to collect mail delivered to

Mteck2k.com

Send mail for Mtech2k.com to peacock.iitm.ernet.in

Dial up and collect mail

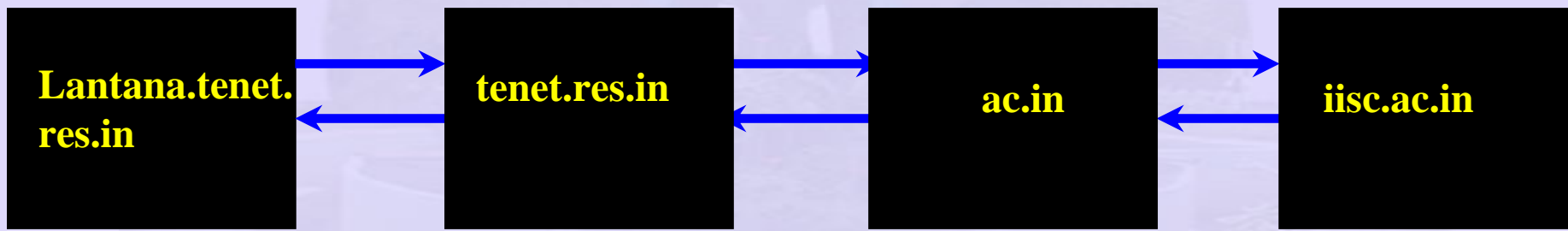
Domain Name System (contd)



Each zone contains some part of the tree and authoritative name server for that zone

Domain Name System (contd.)

To reach **hamsadwani.iisc.ac.in**



Recursive query

- Results obtained are cached for the future
- The reason why **TTL** field is used