NC STATE UNIVERSITY

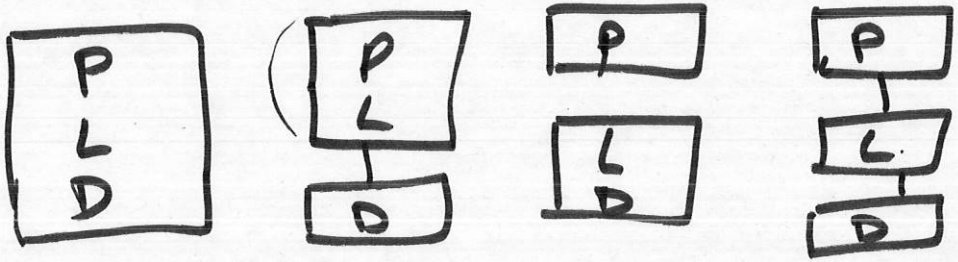
ENGINEERING ONLINE

Lecture Notes

Course Number: CSC 513

Instructor: Dr. Singh

Lecture Number: 7



PROS AND CONS

ONE

TWO

... 10^6

... 10^3

THREE

10^2

THREE

+ MODULARITY : SWAPPABLE COMPONENTS

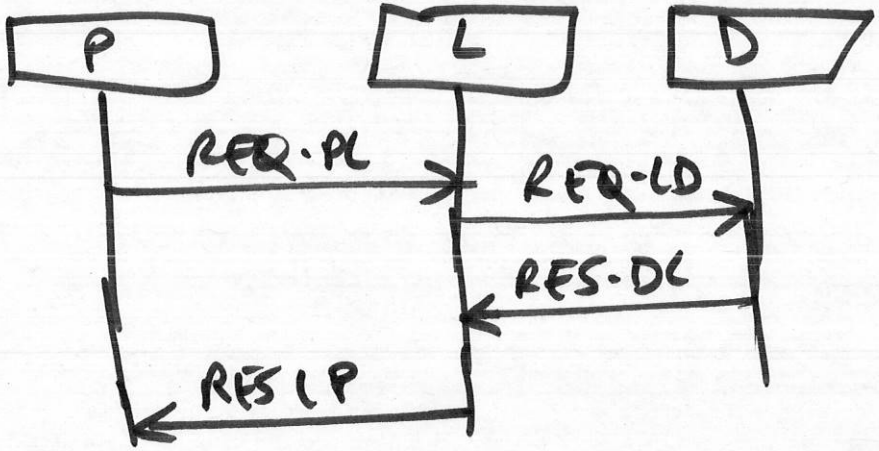
+ MAINTAINABILITY

+ SECURITY
  - REDUCES UNNECESSARY ACCESS
  - FINER GRAINED POLICIES
  - TYPICAL PHYSICAL IMPLEMENTATION ← IS PROFESSIONALLY ADMINISTERED
  - FACILITATES IDENTITY MGT

+ SCALING (THROUGHPUT)

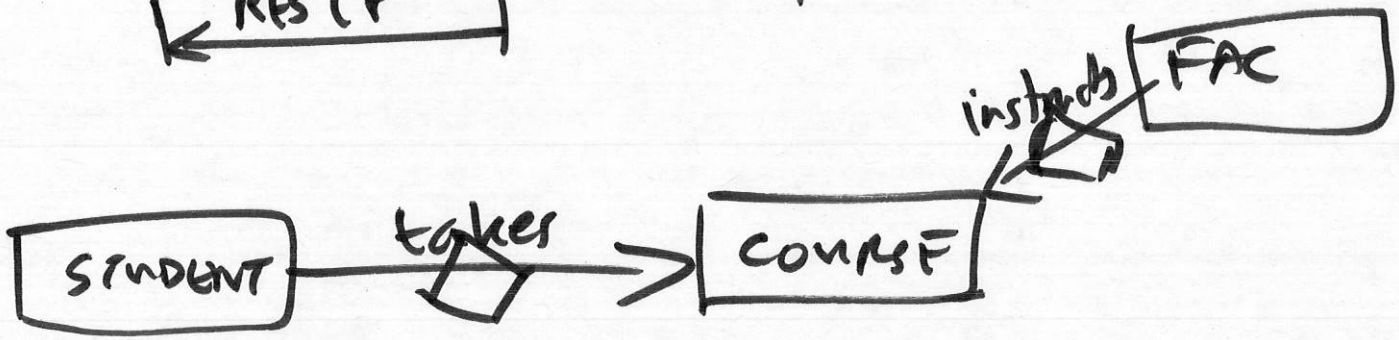
- PERFORMANCE OVERHEAD

- ADDITIONAL DESIGN EFFORT



REQ IS PROCESSED

$\geq O(nm)$ choices



MODULES OF OUR DATA MODEL

WHAT DO WE NEED FROM THESE PROTOCOLS?

P↔L
- ↓ REQUEST : WHAT, ON WHAT
- ↑ RESPONSE : RESULT DATA

L↔D

REQ : QUERY OR UPDATE

RES : RESULT DATA

HTTP

IMPLEMENTATIONS
- ↳ RELIABLE

FIREWALL
- ↳ NETWORK

P↔L EXAMPLES : SOAP (WEB SERVICES)
HTTP + ENCODING SCHEME (e.g. XML)
n CHOICES ATTRIBUTE-VALUE PAIRS
...

L↔D EXAMPLES : JDBC (SQL ; RESULT SET)
ODBC
m CHOKES

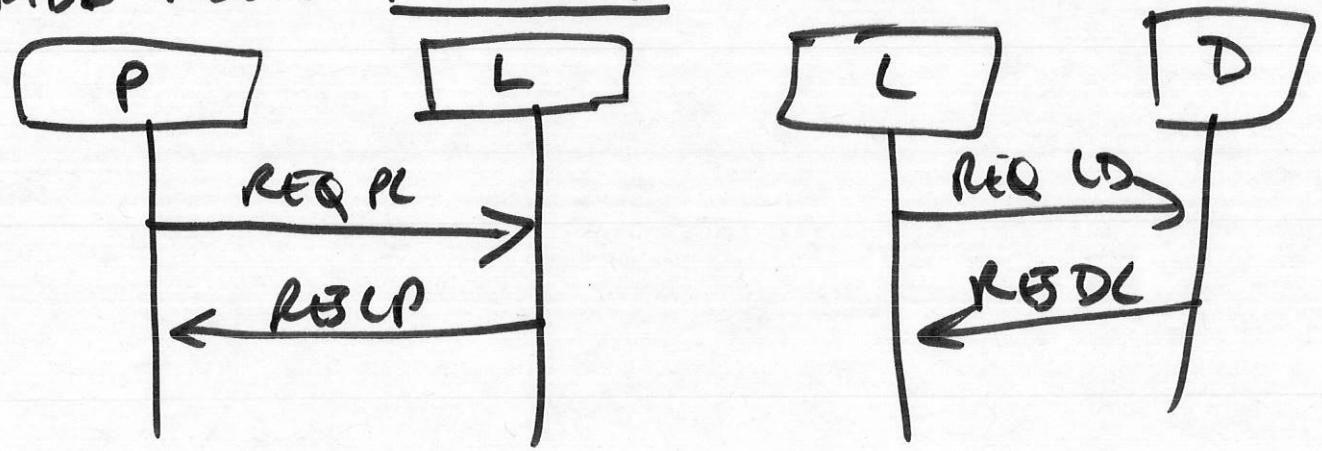
$O(n+m)$

CONTROL STRUCTURES

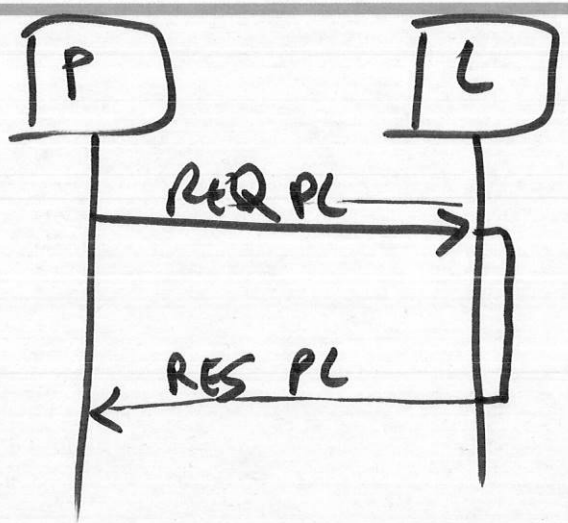
REQUEST
FOLLOWED BY
RESPONSE

UML
SEQUENCE DIAGRAMS [MESSAGE SEQUENCE CHART MSC]

DESCRIBE ABOVE PROTOCOLS IN UML SD



MODULARIZED

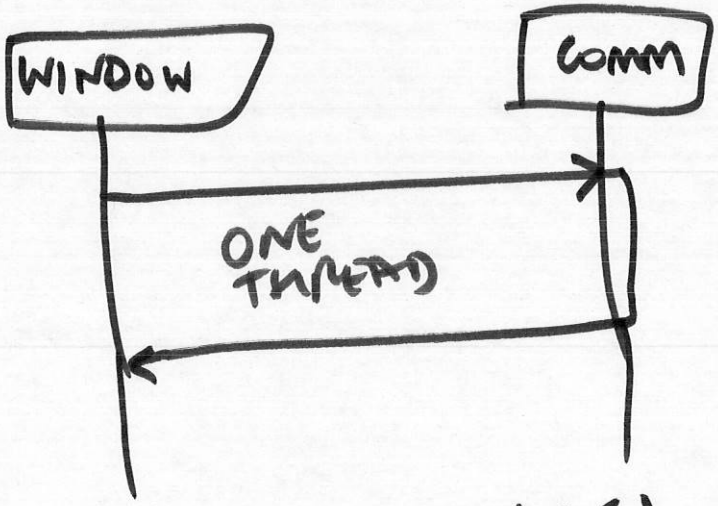


OPEN: CONNECTORS ✓
COMPONENTS
DISAPPEAR

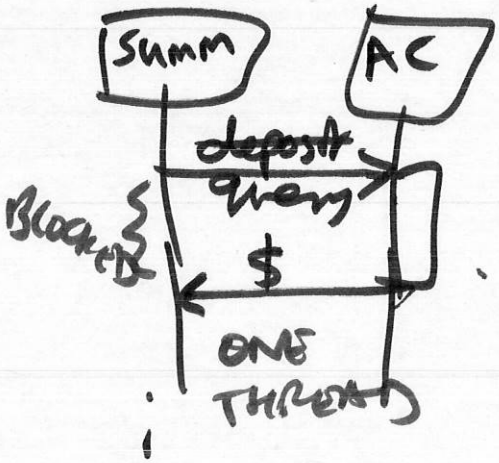
← LEADS TO EMPHASIZING
INTERNAL DETAILS
(OF PROCESSING)

BROWSER
WINDOW

EVENT HANDLER
COMM



BANK
ACCOUNT




```
; a = new AC()
; a.query()
:
```