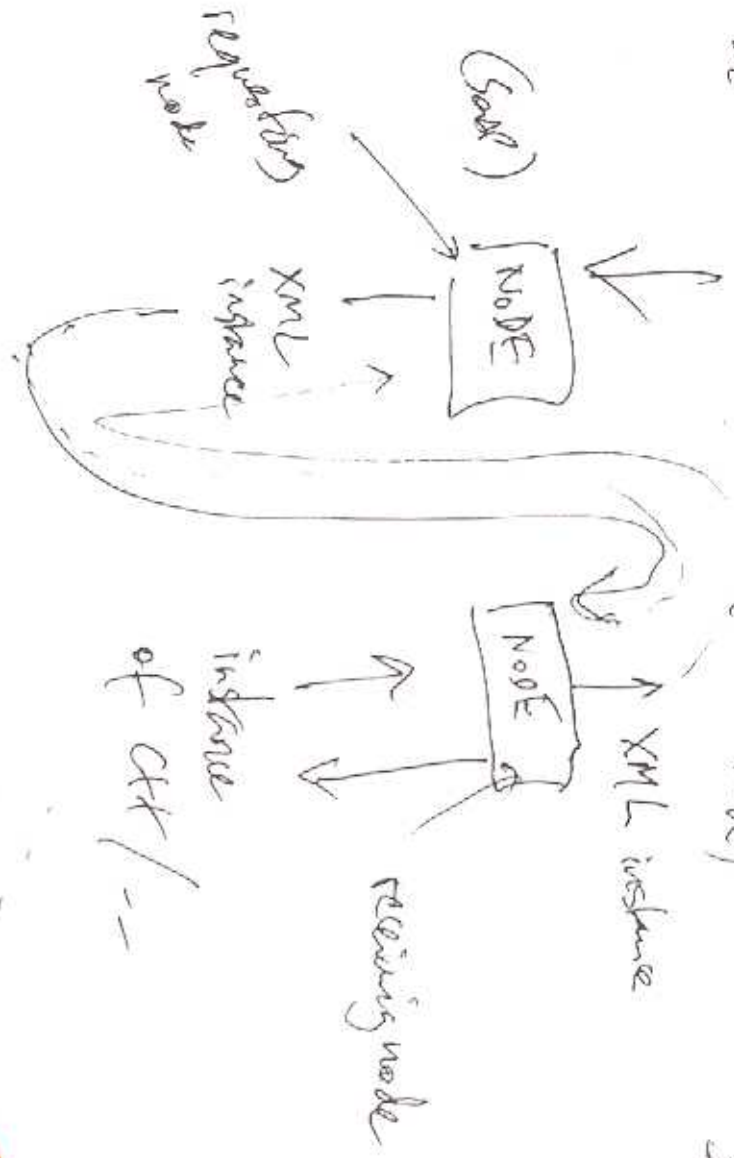


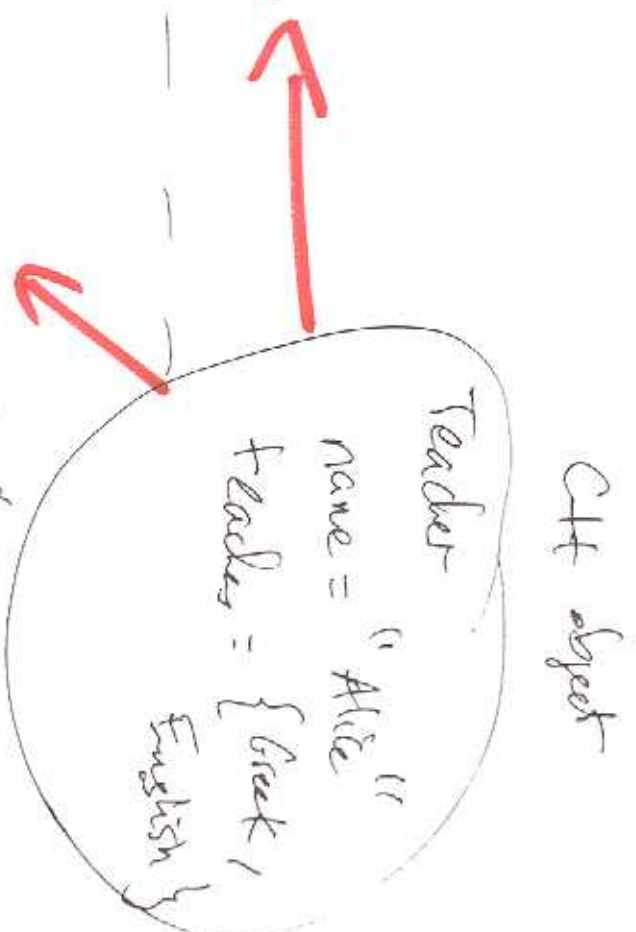
REQUIREMENTS ANALYSIS (MAPPING) RULES OF SOAP (Engine)



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CORBA vs SOAP

- CORBA ↑
- Supply SERVICES (Transaction, Event Service)
 - "Scalability"
 - Performance ("binary serialisation", optimised ORB, caching)
 - benefits of (distributed) object oriented (OO)
 - reusability, encapsulation.
 - "Simulate" SOAP by translating CORBA Requests into XML (instead of OR)

Cost \downarrow

- deep buyment (high cost)

- "interoperability"

- not-XML (based), therefore they ~~are~~ rely on dynamic port allocation.

- meta-information not available in requests (contrary to SOAP, where

Requests are self-describing using specific keywords like ~~the~~ "XSI:type")

In CORBA, meta-information is located in specific repository (Interface Repository)

SOAP



- Deployment
- Human readable (XML based)
- not bound to a specific transport protocol (http, ...)
- expendable (for various OS) using headers / actors

- Combine RPC & messaging

(method call)

↑ (e-commerce type of applications)



- not re-usable
- performance (because of the size of XML documents, and cost of serialisation)
- packs of service & de-serialisation

works

↓ reliability

CORBA vs. SOAP

◆ Cross-platform Support

CORBA	SOAP
<ol style="list-style-type: none">1. CORBA1.0 gave no implementation for ORBs, and then was difficult to work with firewalls.2. CORBA2.0 introduced the Inter-ORB Protocol (IIOP) which runs over TCP/IP.3. CORBA extends itself to include the Web	<p>Being based on Internet specifications, SOAP can plug into existing Web environments; thus it is supported on any computer platform.</p>

L10-6

CORBA vs. SOAP

◆ Transmission Data Format

CORBA	SOAP
<p>1. CORBA use binary encoding for data transmission.</p> <p>2. It assumes that both the sender and the receiver have full knowledge of the message context and does not encode any meta-information.</p> <p>3. This approach results in good performance, but makes it hard for intermediaries to process messages.</p>	<p>1. SOAP uses XML to encode messages, and is easy to process messages at every step of the invocation process.</p> <p>2. The ease of debugging SOAP messages leads to a quick convergence of the various SOAP implementations.</p>

CORBA vs. SOAP

◆ Interoperability

CORBA	SOAP
<p>1. CORBA 1.0 has problem with being unable to build a system of interoperable ORBs implemented by different vendors.</p> <p>2. CORBA 2.0 resolves the problem by defining a single wire-format to guarantee that two separately developed CORBA implementation work together.</p>	<p>Being based on HTTP protocol and XML format, interoperability is easy between different SOAP-enabled computer system.</p>

CORBA vs. SOAP

◆ Object Identity and Lifetime

CORBA	SOAP
<ol style="list-style-type: none">1. A particular instance of a CORBA object is identified by an object reference.2. CORBA is used for transparent communication between application objects.	<ol style="list-style-type: none">1. SOAP doesn't mandate any object identity other than an URL endpoint.2. Life time of SOAP objects on the server becomes an issue if the server is maintaining state.3. The server needs to timeout the object to reclaim its resource.

CORBA vs. SOAP

◆ Protocol Transports

CORBA	SOAP
<p>1. CORBA2 implementations use Internet Inter-ORB Protocol (IIOP), which is GIOP (General Inter-ORB Protocol) over the TCP/IP.</p> <p>2. An additional protocol, called the DCE GIOP (DCE Common Inter-ORB Protocol) is also supported by CORBA2.</p>	<p>1. HTTP is defined as the protocol for transmitting method calls.</p> <p>2. Other transports such as SMTP are not inconceivable, which requires the SOAP method calls to be unidirectional.</p>

CORBA vs. SOAP

◆ Easy to Use

CORBA	SOAP
Being based on a distribution of clients and servers makes CORBA complex when getting things started.	<ol style="list-style-type: none">1. HTTP and XML make for easy implementation and debugging .2. Test-based representation of information allows for easy deciphering of method calls and return results.

CORBA vs. SOAP

◆ Limitations

CORBA	SOAP
<p>The solution built on CORBA protocols is dependent on a single vendor's implementation. Thus, every node in the application environment need to run the same ORB product, decreasing the interoperability.</p>	<p>SOAP lacks some tools common for CORBA, such as transaction management, etc.</p>

CORBA vs. SOAP

◆ Conclusion

CORBA	SOAP
<ul style="list-style-type: none">➤ Used for remote procedure calls➤ Enable object-oriented programs to seek out and use objects on a remote server.	<ul style="list-style-type: none">➤ Used for messaging➤ Marshall data into XML format to be universally shared and transformed between server application software.