Q write an example of document styled SOAP body.

→ The SOAP Body element is the element in a SOAP message that contains the main part to be processed by either Client or web Service. while a Header element is optional. a Body element is mandatory. you must have a body element in a SOAP message.

Here is a example of SOAP Body element

```
<?XMl version = "1.0" ?>
<env: Envelope xmlns:env= "http://www.w3.org/
                                    2001/12/soap-envelope">
<env: Header>
</env: Header>
<env: Body>
</env: Body>
</env: Envelope>
```

A SOAP intermediary is both a SOAP receiver & a SOAP Sender.
The ultimate SOAP receiver is final destination of a SOAP message.

5] Give the use of SOAP must understand Attribute.
→ The mustunderstand attribute means that any node processing the SOAP message must understand the given header block. A "node" may not always be the final receiver of the SOAP message.
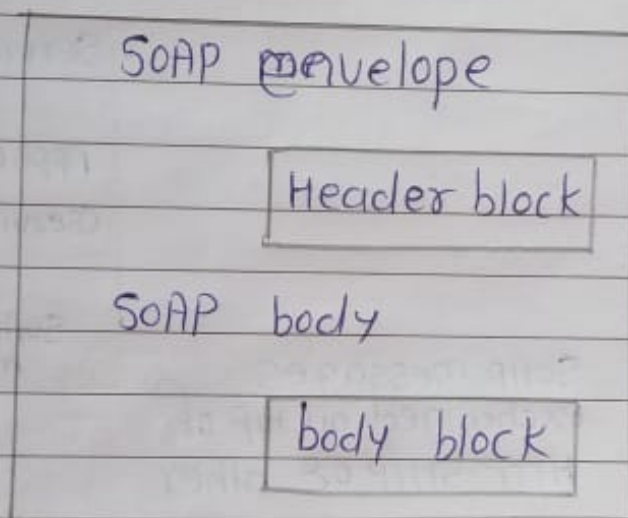The message might be routed via intermediate nodes before ending up at the receiving node.
In case an intermediate node does not understand the header block mustunderstand attribute, it must return a SOAP fault.

6] Explain in Short Apache Axis environment.
→ Apache Axis is a SOAP toolkit that makes it easy to create, deploy, & consume web Services. By using Axis, we will be able to quickly convert existing Java functionality into web Services.
To Study & explore the features of Java-based SOAP implementation we choose to use Apache Axis, a java based toolkit from Apache Software foundation for developing SOAP based web services.

iii] Body = Contains the XML data comprising the message being sent. It is a mandatory element.

iv] Fault = An optional Fault element that provides information about errors that occurs while processing the message.

```
┌─────────────────────────────────┐
│  SOAP envelope                  │
│      ┌────────────────────┐     │
│      │  Header block      │     │
│      │                    │     │
│      └────────────────────┘     │
│  SOAP body                      │
│      ┌────────────────────┐     │
│      │  body block        │     │
│      └────────────────────┘     │
└─────────────────────────────────┘
```

Structure of SOAP message

Q → Write in detail on SOAP with attachments.
SOAP with Attachments (SWA) OE MIME for web services is the use of web services to send & receive files with a combination of SOAP & MIME primarily over HTTF.

SOAP-ENV : Envelope

SOAP-ENV : Header

SOAP-ENV : Body

Attachments

SWA is not a new specification, but rather a mechanism for using the existing SOAP & MIME facilities to perfect the transmission of files using web services invocations.

Q How errors are handled using SOAP faults, give an example for handli adding fault in XML of SOAP message?

→ SOAP errors are handled using a specialized envelope known as a fault envelope. If an error occurs while the server processes a SOAP message it Construct a SOAP fault & sends it back to the client.

Q What are advantage & disadvantage of SOAP?

→ * Advantage of SOAP
   • Simplicity
   • Portability
   • Firewall friendliness
   • Use of open standard
   • Interoprability
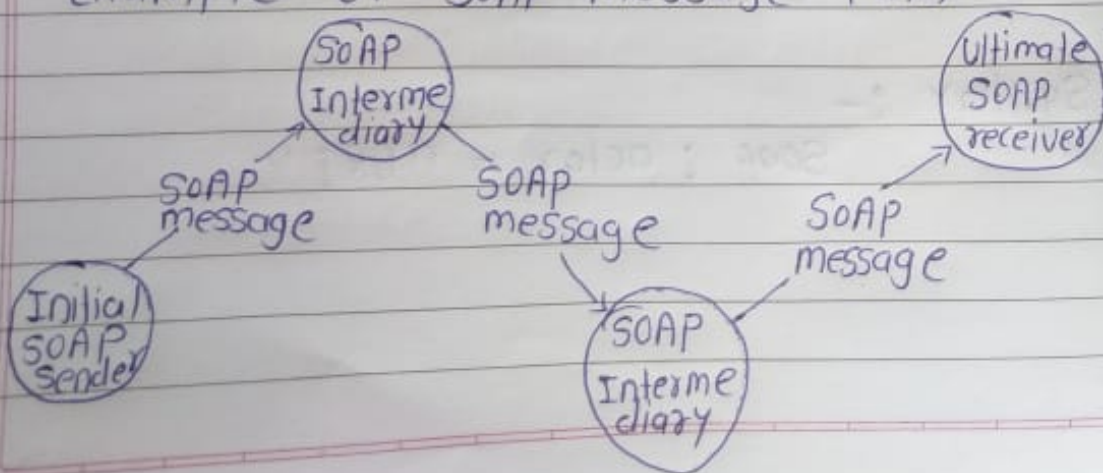   • universal acceptance

* Disadvantage of SOAP are
   • To much reliance on HTTP
   • Statelessness
   • Serialization by value & not by reference.

3] What do you mean by wire protocol & transport protocol?

→ * In computer networking, a wire protocol refers to a way of getting data from point to point. A wire protocol is needed if more than one application has to interoperate. It generally refers to communication protocols higher than the physical layer.

* Transport protocols run over the best effort IP layer to provide a mechanism for applications to communicate with each other without directly interacting with IP layer. In the IP protocol stack, the most widely used two transport protocols are user Datagram protocol & the Transport Control protocol.

4] What is SOAP message path?

→ The SOAP message path is the set of SOAP nodes through which a single SOAP message passes, including the initial SOAP sender, zero or more SOAP intermediate, & an ultimate SOAP receiver. Example of SOAP message path

1) "SOAP fault is caused due to client or server failure" State T/F with justification.

→
- SOAP provides a model for handling faults arise.
- It distinguishes betⁿ the conditions that result in a fault, & the ability to signal that fault to the originator of the faulty message or another node.
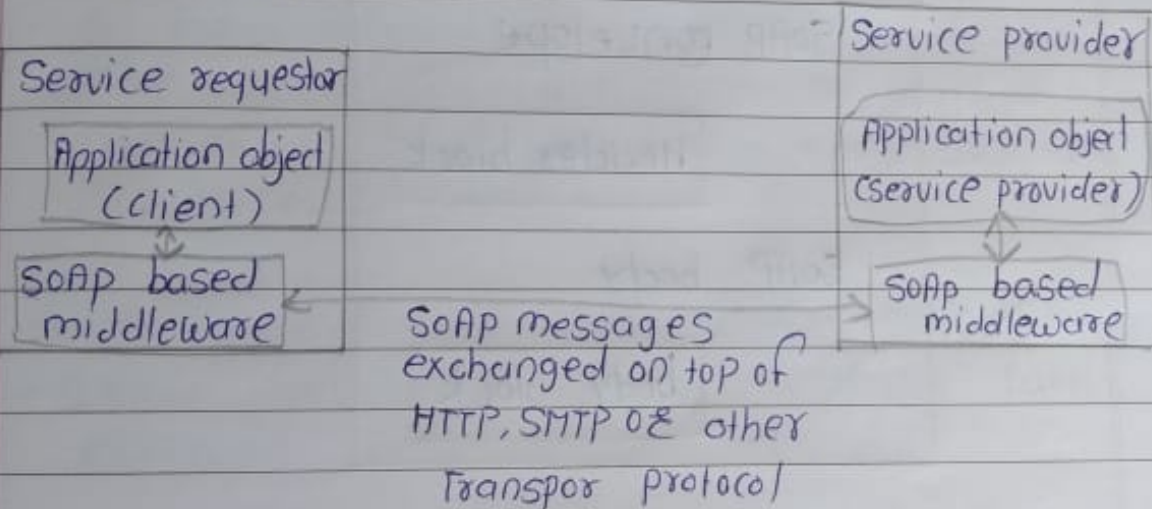- The SOAP < Body > is the place where fault information is placed.

2] Give the use of SOAP actor attribute.

→ The SOAP actor attribute is used to address the Header element to a specific endpoint. A SOAP message may travel from a sender to a receiver by passing different endpoints along the message path. However not all part of a SOAP message may be intended for the ultimate endpoint instead.

Syntax :-

soap : actor = "URI"

Q Draw the structure of SOAP with attachment message & give eg & explain it.

Q write the anatomy of SOAP message & describe

Q What is SOAP ? Give the structure of it. SOAP message. explain it.

→ i) SOAP is the standard messaging protocol used by web services.

ii) SOAP'S primary application is inter application communication.

iii) SOAP codifies the use of XML as an encoding scheme for request & response Parameters using HTTP as a means for transport.

A SOAP message is an ordinary XML document containing the following elements

i] Envelope = Defines the start & the end of the message. It is a mandatory element.

ii] Header = Contains any optional attributes of the message used in processing the message either at an intermediary point of at the ultimate end-point. It is an optional element.