

# SOAP-Based Services

## Web Programming and Testing



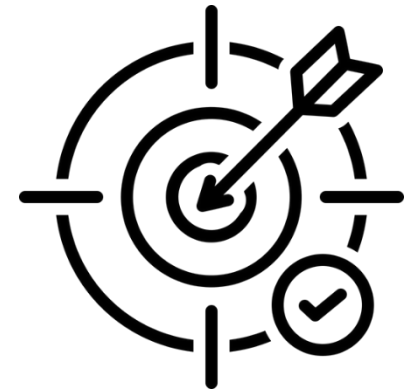
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# Objectives

- The objective of this session is the following:
  - The students are able to elaborate the use of services and the motivation behind it.



# Outlines

1. Flashback.
2. SOAP-based service.

# Flashback

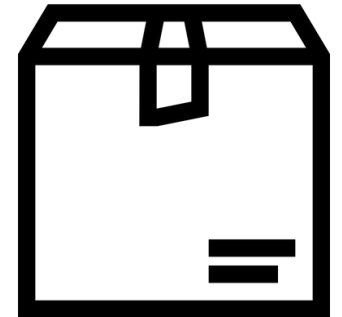
# Service and API Contract

- A service is a software program that makes its functionality available via a published **API** that is part of a service contract.
- The API specification is defined in a contract.  
It contains:
  - How to consume the API,
  - The parameters specifications, and
  - What kind of output is expected.

# SOAP-based Services

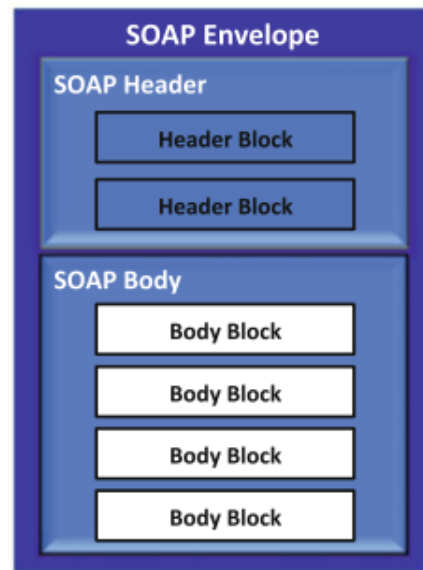
# SOAP Specification

- SOAP: Simple Object Access Protocol.
  - Services that complies to SOAP specification (guideline).
  - The specification is defined in W3C.
    - <https://www.w3.org/TR/soap12/>
- What's in the specs?
  - Basic: SOAP, WSDL, and UDDI ← our focus
  - Extended: WS-Security, WS-Policy, WS-I



# SOAP Message

- SOAP Messages
  - Both request and response are enveloped (formatted) in a well defined XML-format.

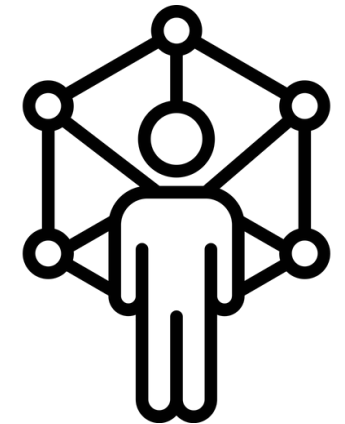


```
<?xml version="1.0"?>
<soap:Envelope
  xmlns:soap="http://
www.w3.org/2003/05/soap-envelope/"
  soap:encodingStyle="http://
schemas.xmlsoap.org/soap/encoding/">
  <soap:Body xmlns:m="http://
www.test.org/stock">
    <m:GetStockPrice>
      <m:StockName>IBM</m:StockName>
      <m:StockPrice>126</m:StockPrice>
    </m:GetStockPrice>
  </soap:Body>
</soap:Envelope>
```

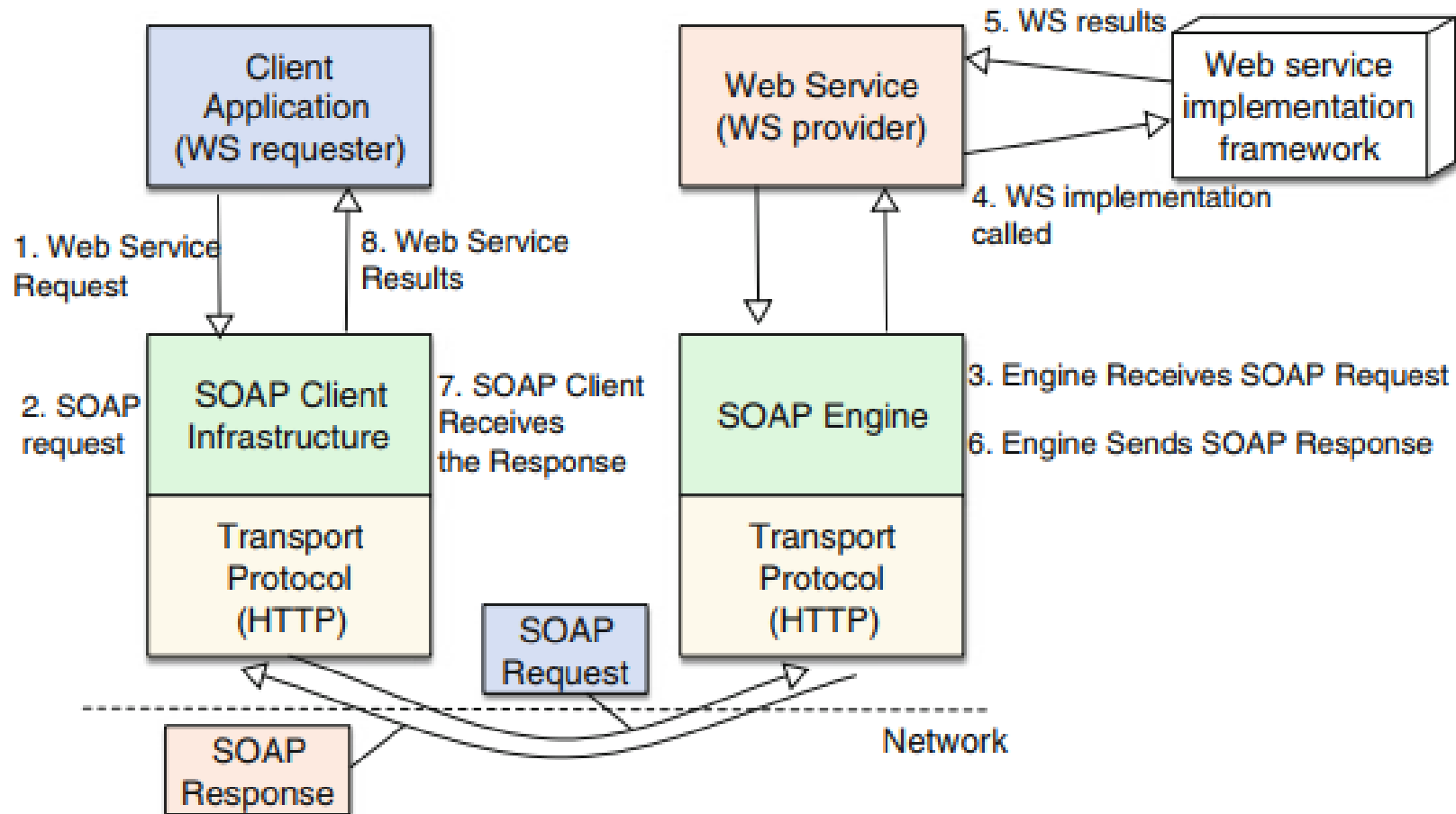


# WSDL

- WSDL: Web service Definition Language.
  - Defines the end point service.
  - Contains the specification of the service (the contract).
  - The available operations, the required parameters, type of the return value, the end point address, etc.
  - Also XML-based.
- WSDL is mandatory to develop a SOAP-WS client.
  - In most cases, the client's stub is generated from the WSDL.

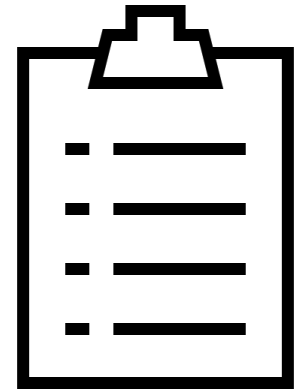


# General Workflow



# To-dos

1. SOAP-based services are commonly found in legacy applications and rarely in newly developed ones.
2. In the next meeting we would discuss about REST-based services.
  - Your project will go to this direction.



# References

Srinivasan, M. (2012). Web Technology: Theory and Practice. Pearson.

Erl T. (2016). Service-Oriented Architecture: Analysis and Design for Services and Microservices. Pearson

Thank  
you

