**SOAP Web Services by Java Brains**

Reference: <https://www.youtube.com/watch?v=mKjvKPlb1rA&list=PLqq-6Pq4lTTZTYpk_1DOowOGWJMIH5T39>

Most commonly used and most popular web services are:

1. SOAP Web Services – Java Specification (JAX-WS)
2. REST (New One) – Java Specification (JAX-RS)

What is Web Service?

Service which is availed over the WEB or NETWORK.

Web Services vs Web Sites:

|  |  |
| --- | --- |
| **Web Services** | **Web Sites** |
| It is meant for **Human Consumption.** | It is meant for **Application/ Code Consumption** |

Advantages:

Two applications can talk each other.

Interoperability. (Application developed In JAVA can use the methods in Application developed using Python).

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**Web Service:** Web service might be written in JAVA.

**Consumer Application:** Consumer might be written in C++.

**Interface:** Interface should be in common platform. Otherwise, consumer not able to access the interface.

Interface -> Web service developer came up with the format that can be understood by all the platforms XML (Extensible Markup Language). This XML is called WSDL (Web Service Description Language).

When we create a web service, we are going to share the WSDL for the created service to the consumers.

Methods, Arguments, Return type [information available in the WSDL]

**INTERFACE**

Consumer

Web Service

**WSDL –** Holds the information about the Web Service.

Then,

**How can we find the web services (i.e. Which WSDL we need to access)?**

**UDDI (Yellow Pages of Web Services)** – Universal Description Discovery and Integration. Here, we can query the information about the web services. Any publisher can publish their web service so any consumer can make use of it.

In this registry, all the web services are getting registered.

**Why SOAP (Simple Object Access Protocol) comes into the Picture?**

Client sends a REQUEST with a type of *String.*

And the RESPONSE of the request might be a *List.*

Let say, CLIENT Application (Java) is accessing the Service (C++). In this case, String data type in JAVA not having the properties of *STRING* in JAVA. So, we should use the common *FORMAT* irrespective of the development platform.

Format used is: XML Format. (SOAP - XML Protocol)

By using the objects all the technologies can able to understand what the two different applications are talking each other.

**How do we convert the JAVA String to a SOAP Message?**

SEI (Service Endpoint Interface) is used to convert the JAVA String into SOAP Messages. SEI takes care of how to convert the Java Strings into SOAP Message or C++ strings into SOAP Message.