**1) Introducing .net the big picture**

**1.2 Describe web services**

A **web service** is a [service](https://en.wikipedia.org/wiki/Service_(systems_architecture)) offered by an electronic device to another electronic device, communicating with each other via the [World Wide Web](https://en.wikipedia.org/wiki/World_wide_web). In a Web service, Web technology such as [HTTP](https://en.wikipedia.org/wiki/HTTP), originally designed for human-to-machine communication, is utilized for machine-to-machine communication, more specifically for transferring machine readable file formats such as [XML](https://en.wikipedia.org/wiki/XML) and [JSON](https://en.wikipedia.org/wiki/JSON). In practice, the web service typically provides an [object-oriented](https://en.wikipedia.org/wiki/Object-oriented_database) web-based interface to a database server, utilized for example by another web server, or by a [mobile application](https://en.wikipedia.org/wiki/Mobile_application), that provides a user interface to the end user. Another common application offered to the end user may be a [mashup](https://en.wikipedia.org/wiki/Mashup_(web_application_hybrid)" \o "Mashup (web application hybrid)), where a web server consumes several web services at different machines, and compiles the content into one user interface.

The [W3C](https://en.wikipedia.org/wiki/W3C) defines a web service generally as:

A web service is a software system designed to support interoperable machine-to-machine interaction over a network.

*— W3C, Web Services Glossary*

Web services may use [SOAP](https://en.wikipedia.org/wiki/SOAP) over HTTP protocol, allowing less costly interactions over the Internet than via proprietary solutions like EDI/B2B. Besides SOAP over HTTP, web services can also be implemented on other reliable transport mechanisms like FTP. In a 2002 document, the [W3C Web Services Architecture Working Group](http://www.w3.org/2002/ws/arch/) defined a Web Services Architecture, requiring a standardized implementation of a "web service." In this:

It [Web Service] has an interface described in a machine-processable format (specifically [WSDL](https://en.wikipedia.org/wiki/Web_Services_Description_Language)). Other systems interact with the web service in a manner prescribed by its description using [SOAP](https://en.wikipedia.org/wiki/SOAP)-messages, typically conveyed using [HTTP](https://en.wikipedia.org/wiki/HTTP) with an [XML](https://en.wikipedia.org/wiki/XML) [serialization](https://en.wikipedia.org/wiki/Serialization) in conjunction with other web-related standards.

*— W3C, Web Services Glossary*

In a 2004 document, the W3C extended the definition:

We can identify two major classes of web services:

* [*REST*](https://en.wikipedia.org/wiki/REST)*-compliant web services* , in which the primary purpose of the service is to manipulate XML representations of [web resources](https://en.wikipedia.org/wiki/Web_resource) using a uniform set of "[stateless](https://en.wikipedia.org/wiki/Stateless_protocol)" operations; and
* *arbitrary web services* , in which the service may expose an arbitrary set of operations