**INTERNITY FOUNDATION**

**TASK-13**

**Submitted By:**

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**Java Batch**

**Introduction to Web Services**

**Ans-** Web services is a standardized way or medium to propagate communication between the client and server applications on the World Wide Web. Web services provide a common platform that allows multiple applications built on various programming languages to have the ability to communicate with each other.

**Benefits of Web Services**

**Loosely Coupled-**Each service exists independently of the other services that make up the application.Individual pieces of the application to be modified without impacting unrelated areas.

**Ease of Integration -**Data is isolated between applications creating ’silos’. Web Services act as glue between these and enable easier communications within and across organisations.

**Service Reuse -**Takes code reuse a step further. A specific function within the domain is only ever coded once and used over and over again by consuming applications.

**SOAP**

**Ans-** SOAP is an XML-based protocol for accessing web services over HTTP. It has some specification which could be used across all applications.

SOAP is known as the Simple Object Access Protocol, but in later times was just shortened to SOAP v1.2. SOAP is a protocol or in other words is a definition of how web services talk to each other or talk to client applications that invoke them.

SOAP was developed as an intermediate language so that applications built on various programming languages could talk easily to each other and avoid the extreme development effort.

**Advantages of Soap Web Services**

**WS Security**: SOAP defines its own security known as WS Security.

**Language and Platform independent**: SOAP web services can be written in any programming language and executed in any platform.

## Disadvantages of Soap Web Services

**Slow**: SOAP uses XML format that must be parsed to be read. It defines many standards that must be followed while developing the SOAP applications. So it is slow and consumes more bandwidth and resource.

**WSDL dependent**: SOAP uses WSDL and doesn't have any other mechanism to discover the services.

A simple SOAP Message has the following elements:

* **The Envelope element**
* **The header element and**
* **The body element**
* **The Fault element (Optional)**

**REST**

**Ans-** REST stands for Representational State Transfer. REST is web standards based architecture and uses HTTP Protocol. It revolves around resource where every component is a resource and a resource is accessed by a common interface using HTTP standard methods. REST was first introduced by Roy Fielding in 2000.

In REST architecture, a REST Server simply provides access to resources and REST client accesses and modifies the resources. Here each resource is identified by URIs/ global IDs. REST uses various representations to represent a resource like text, JSON, XML. JSON is the most popular one.

## Advantages of RESTful Web Services

**Fast**: RESTful Web Services are fast because there is no strict specification like SOAP. It consumes less bandwidth and resource.

**Language and Platform independent**: RESTful web services can be written in any programming language and executed in any platform.

**Can use SOAP**:RESTful web services can use SOAP web services as the implementation.

**Permits different data format**: RESTful web service permits different data format such as Plain Text, HTML, XML and JSON.