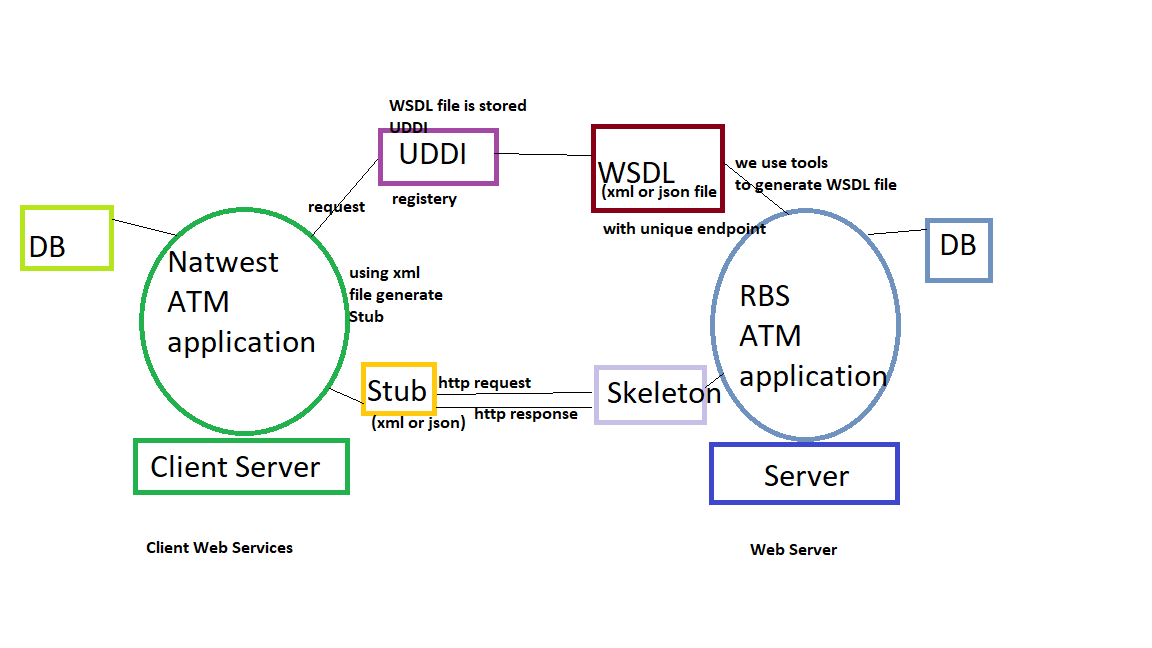
**Web Services**

**Web Services are s set of technologies and rules enable two are more components on the web to communicate to each other.**



**Web services provides only specifications (set of rules) not the API.**

**Specifications:**

1. **WSDL -** Web Service Description Language. (is xml file or json file and contains unique endpoint URL).
2. **UDDI -** Universal Description, Discovery and Integration. (Online registry to store WSDL file) [optional]
3. **Skeleton**
4. **Stub protocol**
5. **SOAP protocol**
6. **HTTP protocol**

**Two types of Web Services.**

1. **SOAP - Simple Object Access Protocol.**

**A web service that compiles to the SOAP web services specifications is a SOAP Web Services.**

**In case of SOAP is XML format. (Envelop containing Header provides information about message, Body contains all the actual message)**

**Jax – RPC -- API provided by Sun microsystems** (API contains abstract classes and interface)

**Jax – WS – API provided by Sun microsystems** (API contains abstract classes and interface)

**Axis1 – provided by apache foundations** (API contains abstract classes and interface)

**Note:** All API’s contains WSDL generating tools, Skeleton generating tools and Stub generating tools. using this API’s we can create both Server and Client Web Services for web.

1. **REST – Representational State Transfer.**

**Is an architectural style**

**REST defines a set of principles to be followed while designing a service for communication/ data exchange between 2 applications.**

**When these principles are applied while designing web services ( for client-server interactions) we get RESTful Web Services.**

**Jax – RS -- API provided by Sun microsystems** (API contains abstract classes and interface)

**Note:** All API’s contains WSDL generating tools, Skeleton generating tools and Stub generating tools. using this API’s we can create both Server and Client Web Services for web.

**Axis1 Web Services using Eclipse:**

**Steps. [ Note: JDK, Eclipse Enterprise version and Tomcat is already installed ]**

* **Eclipse IDE > Window > preference > choose Server > and then Runtime environment > add > Apache Tomcat v9.0 > and next Browser to the folder Tomcat directory > finish > apply and close.**

**[ to check the server is configured goto > Window > show view > others > Server> and can run on Servers tab in near console]**

* **Eclipse > File > New > Others > Web > Dynamic Web Project and name the folder.**
* **Create a java file in src folder and write methods in this class file.**

WSDL – Web Service Description Language.

* Is an XML based interface that is used to describe the functionalities of the Web Services.

UDDI - Universal Description, Discovery and Integration.

* is online registry where all the Service providers put their WSDL