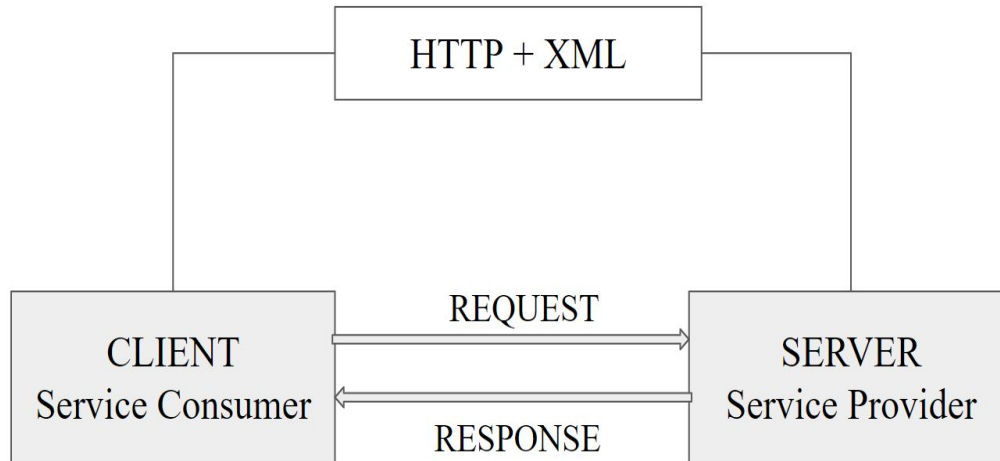


WEB SERVICES

Web Services

- Communication between applications over the web
- Uses XML and HTTP
- Interoperability, Standard protocols, Low cost communication



Components

- SOAP (Simple Object Access Protocol)

XML based messaging protocol for exchanging information

- WSDL (Web Services Description Language)

XML Interface used to describe functionalities of Web Server

- UDDI (Universal Description, Discovery, and Integration)

XML based standard for publishing and finding the Web Service

SOAP Message

```
<?xml version = "1.0"?>
<SOAP-ENV:Envelope xmlns:SOAP-ENV = "http://www.w3.org/2001/12/soap-envelope"
  SOAP-ENV:encodingStyle = "http://www.w3.org/2001/12/soap-encoding">

  <SOAP-ENV:Header>
    ...
    ...
  </SOAP-ENV:Header>
  <SOAP-ENV:Body>
    ...
    ...
    <SOAP-ENV:Fault>
      ...
      ...
    </SOAP-ENV:Fault>
    ...
  </SOAP-ENV:Body>
</SOAP_ENV:Envelope>
```

WSDL Document

```
<definitions>
  <types>
    definition of types.....
  </types>

  <message>
    definition of a message....
  </message>

  <portType>
    <operation>
      definition of a operation.....
    </operation>
  </portType>

  <binding>
    definition of a binding....
  </binding>

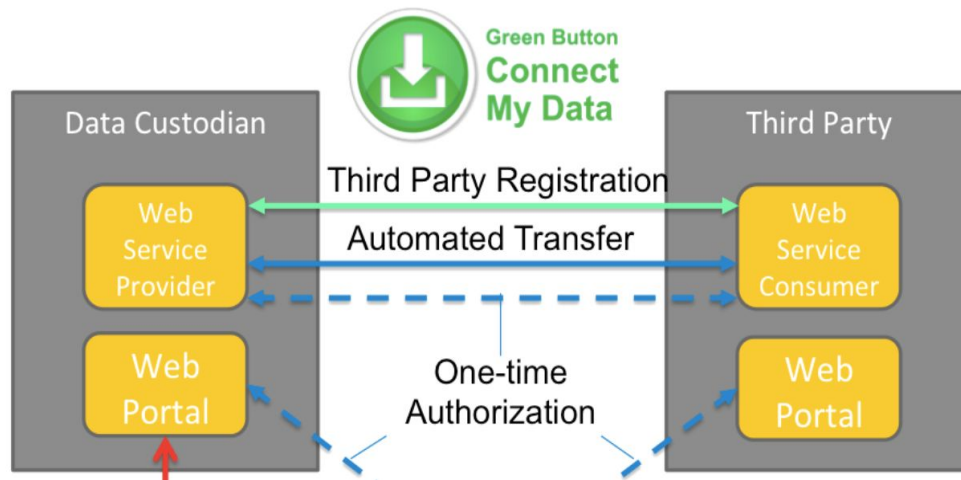
  <service>
    definition of a service....
  </service>
</definitions>
```

RESTful Web Services

- REpresentational State Transfer
- Principles of REST Architecture:
 - Resources
 - Messaging (HTTP)
 - Addressing (URI)
 - Statelessness
 - Caching
- JAX-RS: JAVA API for RESTful Web Services

RESTful Web Services in GBI

- Data Custodian, Retail Customer and Third Party are the resources
- RetailCustomer can get Data from either a Data Custodian or a Third Party
- Helps Green Button Data to move between Data Custodian and a Third Party



REFERENCES

- <https://www.tutorialspoint.com/webservices/>
- <https://www.tutorialspoint.com/restful/>
- <https://green-button.github.io/developers/>