PARSE SOAP ON ANDROID
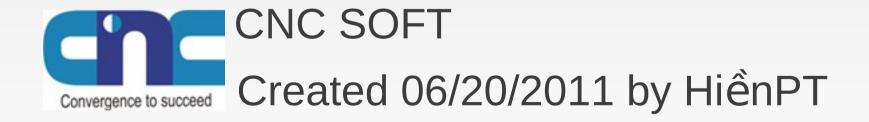
SOAP PROCESSING ON ANDROID

*Give you how to parse **SOAP message** on Android by using KSOAP2 library*

CNC SOFT

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What is SOAP???

- SOAP stand for: "Simple Object Access Protocol"

- SOAP is communication protocol

- SOAP based on XML

- SOAP is a W3C recommendation

SOAP message syntax

```xml
<?xml version="1.0"?>

<soap:Envelope

xmlns:soap="http://www.w3.org/2001/12/soap-envelope"

soap:encodingStyle="http://www.w3.org/2001/12/soap-encoding">

    <soap:Header>

    ...

    </soap:Header>

    <soap:Body>

    ...

                    <soap:Fault>

                    ...

                    </soap:Fault>

    </soap:Body>

</soap:Envelope>
```

SOAP Body

SOAP Body element contains actual SOAP message.

```
▼<S:Envelope xmlns:S="http://schemas.xmlsoap.org/soap/envelope/">
  ▼<S:Body>
    ▼<ns2:getDomainSimpleOfPropertyResponse xmlns:ns2="http://vtioservice.se.hust/">
      ▼<return>
          <label>Activity^^http://www.w3.org/2001/XMLSchema#string</label>
          <url>http://hust.se.vtio.owl#Activity</url>
        </return>
      ▼<return>
          <label>Place^^http://www.w3.org/2001/XMLSchema#string</label>
          <url>http://hust.se.vtio.owl#Place</url>
        </return>
      </ns2:getDomainSimpleOfPropertyResponse>    INFORMATION
    </S:Body>
  </S:Envelope>
```

SOAP Fault

- This element holds errors and status information for a SOAP message

- Sub elements:

Sub Element	Description
<faultcode>	A code for identifying the fault
<faultstring>	A human readable explanation of the fault
<faultactor>	Information about who caused the fault to happen
<detail>	Holds application specific error information related to the Body element

- SOAP Fault codes

Error	Description
VersionMismatch	Found an invalid namespace for the SOAP Envelope element
MustUnderstand	An immediate child element of the Header element, with the mustUnderstand attribute set to "1", was not understood
Client	The message was incorrectly formed or contained incorrect information
Server	There was a problem with the server so the message could not proceed

How to parser SOAP on android?

- Services endpoint (WSDL file Address)

  e.g.

  WEATHER   : http://www.weather.gov/forecasts/xml/DWMLgen/wsdl/ndfdXML.wsdl

  STAAR   : 203.113.164.194:8080/VTIO-SERVER/VtioServicePort?WSDL

- KSOAP2 library for android

WSDL file address

- Define, description service
- A lot of way to get WSDL URL:
  - From internet (Many service have been published)
  - From service dev team
  - From partner company
  - …

Parser SOAP with Ksoap2

- Ksoap2 **download link**

- Create your android project

- Import Ksoap2 library (Add to build path)

- Add Internet Permission → internet access

- Coding ? → Next slide

CODING with KSOAP2

Services information:

```
public static    String URL="http://203.113.164.194:8080/VTIO-SERVER/VtioServicePort?WSDL";
public static    String NAMESPACE = "http://vtioservice.se.hust/";
public static    String METHOD_NAME = "executeQuery";
```

SoapObject hold paramenter values

```
String SOAP_ACTION = NAMESPACE + METHOD_NAME;
SoapObject soapRequestObject = new SoapObject(NAMESPACE, METHOD_NAME);
soapRequestObject.addProperty("arg0", query.replaceAll("\n", " "));
soapRequestObject.addProperty("arg1", intResouner);


SoapSerializationEnvelope envelope = new SoapSerializationEnvelope(SoapEnvelope.VER11);
envelope.setOutputSoapObject(soapRequestObject);
```

CODING with KSOAP2

- Send to server via HTTP

```
HttpTransportSE androidHttpTransport = new HttpTransportSE(URL);
try {
    androidHttpTransport.call(SOAP_ACTION, envelope);
} catch (Exception e) {

}
```

CODING with KSOAP2

- Access return message as SOAP object

```java
SoapObject result = (SoapObject)envelope.bodyIn;
try {
    for (int i=0; i<result.getPropertyCount(); i++){
        SoapObject soapItem = (SoapObject) result.getProperty(i);
        ArrayList<String> resultItem = new ArrayList<String>();
        for (int j=0; j<soapItem.getPropertyCount(); j++){
            String value = soapItem.getProperty(j).toString();
            resultItem.add(value);
        }
        returnValues.add(resultItem);
    }
} catch (Exception e) {
}
```

KSOAP data structure