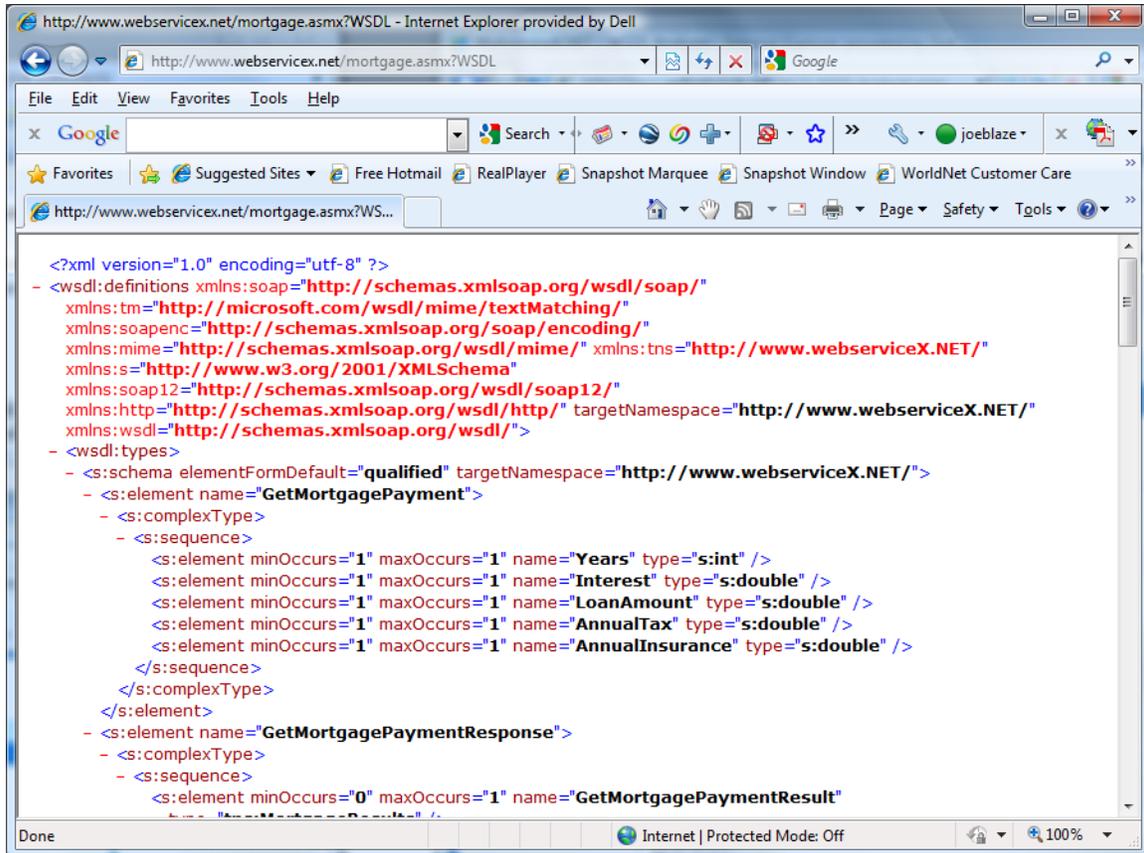


WebService (with wsdl) Accessed by APLNext WebTransfer

When a web service is specified by a wsdl xml-format document it is necessary to analyze the wsdl document to ascertain the method available. See here for more information on wsdl: <http://www.w3.org/TR/wsdl>.

A sample web service using a wsdl is found at:

<http://www.webservicex.net/mortgage.asmx?WSDL>



The screenshot shows an Internet Explorer browser window displaying the WSDL document for a mortgage web service. The address bar shows the URL <http://www.webservicex.net/mortgage.asmx?WSDL>. The page content is an XML document with the following structure:

```
<?xml version="1.0" encoding="utf-8" ?>
- <wsdl:definitions xmlns:soap="http://schemas.xmlsoap.org/wsdl/soap/"
  xmlns:tm="http://microsoft.com/wsdl/mime/textMatching/"
  xmlns:soapenc="http://schemas.xmlsoap.org/soap/encoding/"
  xmlns:mime="http://schemas.xmlsoap.org/wsdl/mime/" xmlns:tns="http://www.webserviceX.NET/"
  xmlns:s="http://www.w3.org/2001/XMLSchema"
  xmlns:soap12="http://schemas.xmlsoap.org/wsdl/soap12/"
  xmlns:http="http://schemas.xmlsoap.org/wsdl/http/" targetNamespace="http://www.webserviceX.NET/"
  xmlns:wsdl="http://schemas.xmlsoap.org/wsdl/">
- <wsdl:types>
- <s:schema elementFormDefault="qualified" targetNamespace="http://www.webserviceX.NET/">
  - <s:element name="GetMortgagePayment">
    - <s:complexType>
      - <s:sequence>
        <s:element minOccurs="1" maxOccurs="1" name="Years" type="s:int" />
        <s:element minOccurs="1" maxOccurs="1" name="Interest" type="s:double" />
        <s:element minOccurs="1" maxOccurs="1" name="LoanAmount" type="s:double" />
        <s:element minOccurs="1" maxOccurs="1" name="AnnualTax" type="s:double" />
        <s:element minOccurs="1" maxOccurs="1" name="AnnualInsurance" type="s:double" />
      </s:sequence>
    </s:complexType>
  </s:element>
  - <s:element name="GetMortgagePaymentResponse">
    - <s:complexType>
      - <s:sequence>
        <s:element minOccurs="0" maxOccurs="1" name="GetMortgagePaymentResult" />
      </s:sequence>
    </s:complexType>
  </s:element>
</s:schema>
</wsdl:types>
</wsdl:definitions>
```

In this case the web site of this sample web service provided it own wsdl analyzer available at: <http://www.webservicex.net/WCF/WSDLAnalyser.aspx> The wsdl analyzer provided the following information about the GetMortgagePayment method.;

WebServiceX.NET :: WSDL Analyzer - Internet Explorer provided by Dell

http://www.webserviceX.net/WCF/WSDLAnalyzer.aspx

File Edit View Favorites Tools Help

Google Search

WebServiceX.NET :: WSDL Analyzer

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Business and Commerce

Communications **WSDL Analyzer**

Standards and Lookup Data WSDL

http://www.webserviceX.net/mortgage.asmx?wsdl

Analyse

Graphics and Multimedia **Mortgage**

Other Web Services Endpoint: *http://www.webserviceX.net/mortgage.asmx*

Utilities Description:

Value Manipulation / Unit Convertor

Operations

GetMortgagePayment
GetMortgagePayment
GetMortgagePayment

GetMortgagePayment

Request:
parameters :

Response:
parameters :

GetMortgagePayment

Request:
Years : s:string
Interest : s:string
LoanAmount : s:string
AnnualTax : s:string
AnnualInsurance : s:string
Response:
Body :

GetMortgagePayment

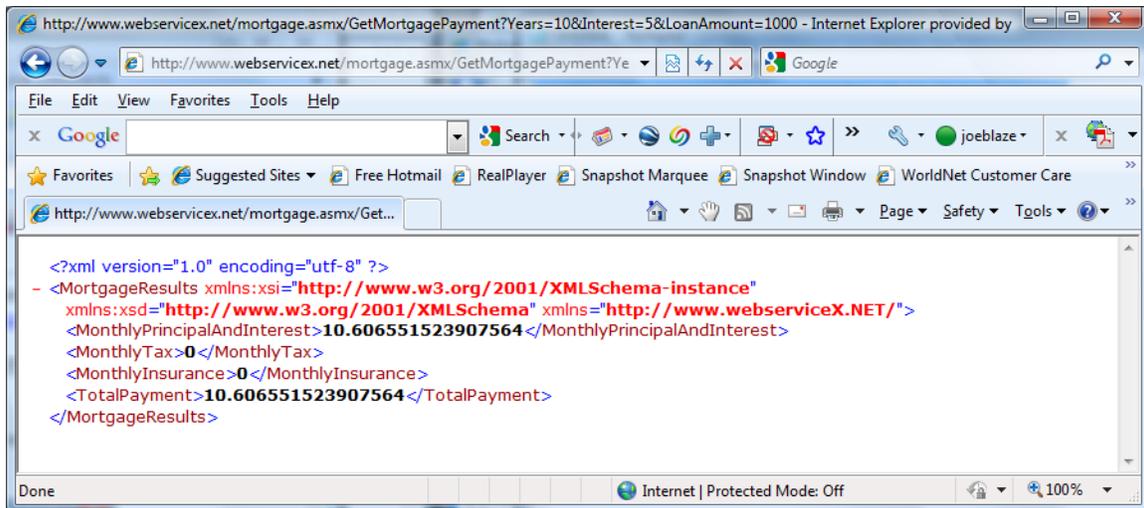
Request:
Years : s:string
Interest : s:string
LoanAmount : s:string
AnnualTax : s:string
AnnualInsurance : s:string
Response:
Body :

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Internet | Protected Mode: Off

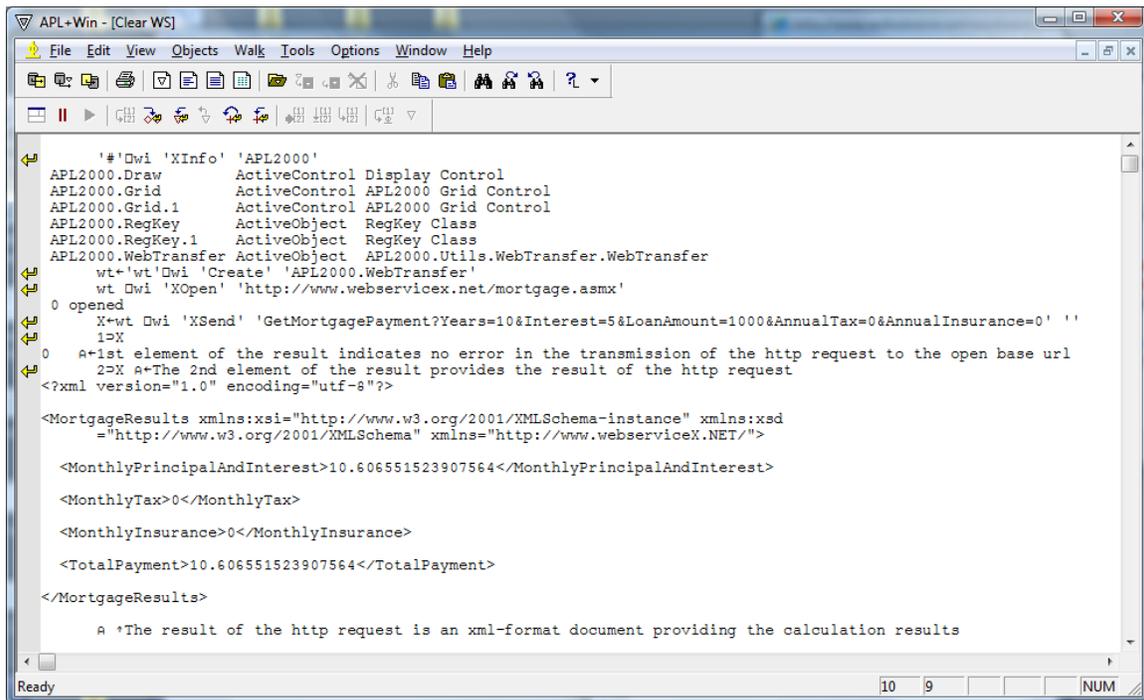
Using the information contained in the wsdl, an http request may be formulated. Such a request is composed of a base url: <http://www.websvcx.net/mortgage.aspx> and a virtual path associated with the web service method: /GetMortgagePayment?Years=10&Interest=5&LoanAmount=1000&AnnualTax=0&AnnualInsurance=0

Since not much data is required by the GetMortgagePayment method of the web service, the http request may be executed using a browser:



There are many ways to execute this type of http request in APL. One easy way is to use the APLNext WebTransfer class. This class was created to facilitate an interface between clients and APLNext WebServices applications. It can be used with APLNext WebServices based on APL+Win and any other web service which supports http requests. To install the APLNext WebTransfer class go to: <http://forum.apl2000.com/viewtopic.php?t=431>.

After APLNext WebTransfer has been installed on the computer, it exposes the .Net HttpRequest functionality as an ActiveX object. The APL+Win session below illustrates how APLNext WebTransfer can be used to execute the http request to call the GetMortgagePayment method:



```
APL+Win - [Clear WS]
File Edit View Objects Walk Tools Options Window Help
APL2000.Draw      ActiveControl Display Control
APL2000.Grid      ActiveControl APL2000 Grid Control
APL2000.Grid.1    ActiveControl APL2000 Grid Control
APL2000.RegKey    ActiveObject  RegKey Class
APL2000.RegKey.1  ActiveObject  RegKey Class
APL2000.WebTransfer ActiveObject  APL2000.Utils.WebTransfer.WebTransfer
wt+wt'Dwi 'Create' 'APL2000.WebTransfer'
wt Dwi 'XOpen' 'http://www.webserviceX.net/mortgage.aspx'
0 opened
X+wt Dwi 'XSend' 'GetMortgagePayment?Years=10&Interest=5&LoanAmount=1000&AnnualTax=0&AnnualInsurance=0' ''
1>X
0 A+1st element of the result indicates no error in the transmission of the http request to the open base url
2>X A+The 2nd element of the result provides the result of the http request
<?xml version="1.0" encoding="utf-8"?>
<MortgageResults xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xmlns:xsd
="http://www.w3.org/2001/XMLSchema" xmlns="http://www.webserviceX.NET/">
  <MonthlyPrincipalAndInterest>10.606551523907564</MonthlyPrincipalAndInterest>
  <MonthlyTax>0</MonthlyTax>
  <MonthlyInsurance>0</MonthlyInsurance>
  <TotalPayment>10.606551523907564</TotalPayment>
</MortgageResults>
A +The result of the http request is an xml-format document providing the calculation results
```

The information in this xml-format response can be parsed into APL+Win variables using the Microsoft XML DOM ActiveX object. See here for more information: <http://msdn.microsoft.com/en-us/library/aa468547.aspx>.

Even easier is to parse the response directly to APL arrays using the APL+Win functions in the XMLTools.zip package available at: <http://forum.apl2000.com/viewtopic.php?t=43>.