

Python: XML to SQL Challenge

Aims:

This challenge will require:

- Understanding of XML file type.
- SQL skills to create stored procedure
- Python skill to connect to SQL server using ODBC
- Use of imported Python library to parse an XML file.

Background:

The *xml* file type is widely used to pass data between businesses.

https://www.w3schools.com/xml/xml_what.asp

Here is an example xml file:

```
<?xml version="1.0" encoding="utf-8"?>
<Invoice>
  <InvHeader>
    <InvNumber>1978</InvNumber>
    <InvoiceDate>2021-02-15T10:07:00</InvoiceDate>
    <InvoiceAddress>
      <InvoiceCustomer>Jane Meyers, Decorating</InvoiceCustomer>
      <Address1>Nelson House</Address1>
      <Address2>Charlotte</Address2>
      <Postcode>EX54 4EX </Postcode>
    </InvoiceAddress>
  </InvHeader>
  <Lines>
    <Line>
      <ItemCode>XPL678</ItemCode>
      <Name>Brushes 6mm</Name>
      <UnitOfSale>EACH</UnitOfSale>
      <QtyOrdered>10</QtyOrdered>
      <UnitPrice>1.50</UnitPrice>
    </Line>
    <Line>
      <ItemCode>XPL583</ItemCode>
      <Name>Brushes 8mm</Name>
      <UnitOfSale>EACH</UnitOfSale>
      <QtyOrdered>6</QtyOrdered>
      <UnitPrice>2.00</UnitPrice>
    </Line>
  </Lines>
</Invoice>
```

Note the hierarchical structure of the data.

We wish to test the transfer of data from an xml file to our CarDealership SQL Server database.

The data that we wish to transfer is in the table below. We want to create 2 new Manufacturers records with this data.

Name:	Toyota	Nissan
Established:	1937-08-28T00:00:00	1933-12-26T00:00:00
City:	Toyota City	Yokohama
Country:	Japan	Japan

We will require a stored procedure on the SQL Server database.

The connection to SQL server will require import of pyodbc library. Example code is in `week3pythoninsprj.py`

We will need a tool to parse the xml file in Python.

```
#ElementTree for parsingxml  
  
import xml.etree.ElementTree as ET
```

Documentation is here:

<https://docs.python.org/3/library/xml.etree.elementtree.html>

ElementTree parses xml into a Python list of lists.

Action required:

1. Create the required xml data file.
2. Create the required stored procedure.
3. Create Python code to open the xml file, parse it and call the stored procedure to create the Manufacturer record.
4. Test