

## Web Application Development Semester Project Proposal

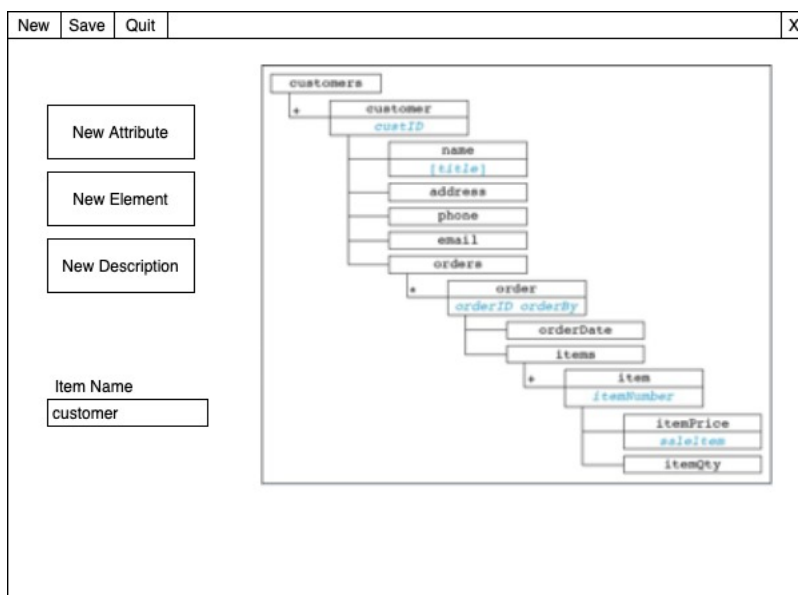
### Graphical User Interface XML Schema Creation Tool

The aim of the project will be to aid an inexperienced user in the creation of XML style schema documents with a tool simply and intuitively. The GUI will provide the user with an easy to understand UI with buttons and text boxes to essentially drag and drop portions of a valid, would be schema into place without having to write any XML code.

Required languages and skills:

- Python – coding used for logic and wrapper
- QT GUI library – GUI design and development
- XML – XML output for the created schema
- CSS – styling

Sample Prototype Design:



```
<?xml version="1.0" encoding="UTF-8" standalone="no" ?>
<xsd:schema xmlns:xsd="http://www.w3.org/2001/XMLSchema" >
  <xsd:element name="CUSTOMERS">
    <xsd:complexType>
      <xsd:sequence>
        <xsd:element ref="customer" minOccurs="0" maxOccurs="unbounded" />
      </xsd:sequence>
    </xsd:complexType>
  </xsd:element>
  <xsd:element name="customer">
    <xsd:complexType>
      <xsd:all>
        <xsd:element ref="name" />
        <xsd:element name="address" type="xs:string" />
        <xsd:element name="phone" type="xs:string" />
        <xsd:element name="email" type="xs:string" minOccurs="0" maxOccurs="1" />
        <xsd:element ref="orders" />
      </xsd:all>
      <xsd:attribute ref="custID" use="required" />
    </xsd:complexType>
  </xsd:element>
  <xsd:attribute name="custID" >
    <xsd:complexType>
      <xsd:restriction base="xs:string">
        <xsd:pattern value="cust\d\d\d" />
      </xsd:restriction>
    </xsd:complexType>
  </xsd:attribute>
  <xsd:element name="name">
    <xsd:complexType>
      <xsd:simpleContent>
        <xsd:extension base="xs:string">
          <xsd:attribute ref="title" />
        </xsd:extension>
      </xsd:simpleContent>
    </xsd:complexType>
  </xsd:element>
  <xsd:attribute name="title">
    <xsd:complexType>
      <xsd:simpleType>
        <xsd:restriction base="xs:string">
          <xsd:enumeration value="Mr." />
          <xsd:enumeration value="Mrs." />
          <xsd:restriction value="Ms." />
        </xsd:restriction>
      </xsd:simpleType>
    </xsd:complexType>
  </xsd:attribute>
  <xsd:element name="orders">
    <xsd:complexType>
      <xsd:sequence>
        <xsd:element ref="order" minOccurs="0" maxOccurs="unbounded" />
      </xsd:sequence>
    </xsd:complexType>
  </xsd:element>
  <xsd:element name="order">
    <xsd:complexType>
      <xsd:sequence>
        <xsd:element name="orderDate" type="xs:date" />
        <xsd:element ref="item" />
      </xsd:sequence>
      <xsd:attribute ref="orderID" use="required" />
      <xsd:attribute name="orderBy" use="required" />
    </xsd:complexType>
  </xsd:element>
  <xsd:element name="item">
    <xsd:complexType>
      <xsd:sequence>
        <xsd:element name="itemNumber" type="xs:string" />
        <xsd:element name="itemPrice" type="xs:float" />
        <xsd:element name="itemQty" type="xs:integer" />
      </xsd:sequence>
    </xsd:complexType>
  </xsd:element>
</xsd:schema>
```