

STUDENT REPORT DTD

```
<?xml version="1.0" encoding="UTF-8"?>
<!ELEMENT student (Name,id,study) >
<!ELEMENT study (courses) >
<!ELEMENT courses (course+) >
<!ELEMENT course (name+,shortform,report?) >
<!ELEMENT report (grade,date)* >
<!ELEMENT Name (#PCDATA)>
<!ELEMENT id (#PCDATA)>
<!ELEMENT name (#PCDATA)>
<!ELEMENT date (#PCDATA)>
<!ELEMENT grade (#PCDATA)>
<!ELEMENT shortform (#PCDATA)>
<!ATTLIST courses year CDATA #REQUIRED>
```

EMAIL DTD

```
<?xml version="1.0" encoding="UTF-8"?>
<!ELEMENT email (from,to,content)>
<!ELEMENT content (#PCDATA|exercises|person)*>
<!ELEMENT exercises (exercise+)>
<!ELEMENT exercise (topic,description)>
<!ELEMENT from (#PCDATA)>
<!ELEMENT to (#PCDATA)>
<!ELEMENT topic (#PCDATA)>
<!ELEMENT description (#PCDATA)>
<!ELEMENT person (#PCDATA)>
```

SCHEMA XSD

```
<?xml version="1.0" encoding="UTF-8"?>
<schema xmlns="http://www.w3.org/2001/XMLSchema"
  targetNamespace="http://www.example.org/studentreportXMLSchema"
  xmlns:tns="http://www.example.org/studentreportXMLSchema"
  elementFormDefault="qualified">

  <complexType name="studentType">
    <sequence>
      <element name="Name" type="string"></element>
      <element name="id" type="string"></element>
      <element name="study" type="tns:studyType"></element>
    </sequence>
  </complexType>

  <complexType name="studyType">
    <sequence>
      <element name="courses" type="tns:coursesType"></element>
    </sequence>
    <attribute name="year" type="tns:year" use="required">
    </attribute>
  </complexType>

  <complexType name="coursesType">
    <sequence>
      <element name="course" minOccurs="1" maxOccurs="unbounded" type="tns:courseType"></element>
    </sequence>
  </complexType>

  <complexType name="courseType">
    <sequence>
      <element name="name" type="string"></element>
      <element name="shortform" type="string"></element>
      <element name="report" type="tns:reportType" minOccurs="0" maxOccurs="unbounded"></element>
    </sequence>
  </complexType>

  <complexType name="reportType">
    <choice>
      <element name="grade" type="string"></element>
      <element name="date" type="string"></element>
    </choice>
  </complexType>

  <simpleType name="year">
    <restriction base="int">
      <pattern value="\d{4}"/>
    </restriction>
  </simpleType>

  <element name="xsdstudent" type="tns:studentType" ></element>

</schema>
```

EMAIL XSD

```
<?xml version="1.0" encoding="UTF-8"?>
<schema xmlns="http://www.w3.org/2001/XMLSchema"
  targetNamespace="http://www.example.org/studentreportXMLSchema"
  xmlns:tns="http://www.example.org/studentreportXMLSchema"
  elementFormDefault="qualified">

  <complexType name="emailType">
    <sequence>
      <element name="from" type="tns:email"></element>
      <element name="to" type="tns:email"></element>
      <element name="content" type="tns:contentType"></element>
    </sequence>
  </complexType>

  <complexType name="contentType" mixed="true">
    <sequence>
      <element name="exercises" type="tns:exercisesType"></element>
      <element name="person" type="string"></element>
    </sequence>
  </complexType>

  <complexType name="exercisesType">
    <sequence>
      <element name="exercise" minOccurs="1" maxOccurs="unbounded" type="tns:exerciseType"></element>
    </sequence>
  </complexType>

  <complexType name="exerciseType">
    <sequence>
      <element name="topic" type="string"></element>
      <element name="description" type="string"></element>
    </sequence>
  </complexType>

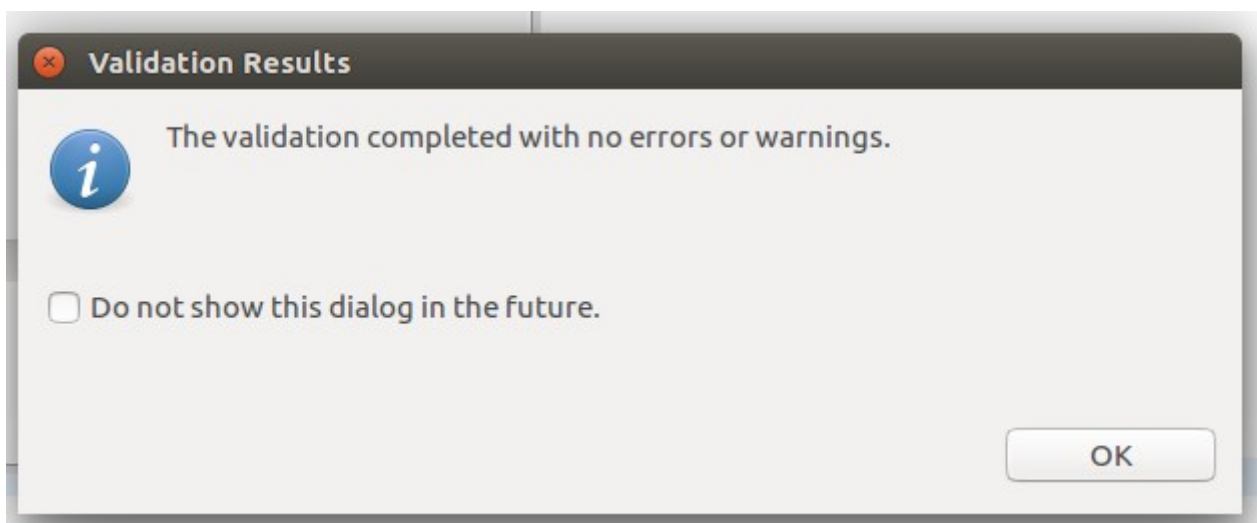
  <simpleType name="email">
    <restriction base="string">
      <pattern value="^[@]+@[^\.\.]+\.\.+"/>
    </restriction>
  </simpleType>

  <element name="xsdemail" type="tns:emailType" ></element>

</schema>
```

STUDENT GENERATED FROM XML XSD AND VALIDATION :

```
<?xml version="1.0" encoding="UTF-8"?>
<tns:xsdstudent
xmlns:tns="http://www.example.org/studentreportXMLSchema"
xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xsi:schemaLocation="http://www.example.org/studentreportXMLSchema studentreportXMLSchema.xsd ">
  <tns:Name>Abinaya</tns:Name>
  <tns:id>30082084</tns:id>
  <tns:study year="2000">
    <tns:courses>
      <tns:course>
        <tns:name>Computer Networks</tns:name>
        <tns:shortform>CN</tns:shortform>
        <tns:report>
          <tns:grade>A+</tns:grade>
        </tns:report>
      </tns:course>
    </tns:courses>
  </tns:study>
</tns:xsdstudent>
```



EMAIL GENERATED FROM XML XSD AND VALIDATION :

```
<?xml version="1.0" encoding="UTF-8"?>
<tns:xsdemail
xmlns:tns="http://www.example.org/studentreportXMLSchema"
xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xsi:schemaLocation="http://www.example.org/studentreportXMLSchema emailXMLSchema.xsd ">
  <tns:from>abc@gmail.com </tns:from>
  <tns:to>xyz@gmail.com</tns:to>
  <tns:content>
    <tns:exercises>
      <tns:exercise>
        <tns:topic>DTD</tns:topic>
        <tns:description>From Instance to DTD</tns:description>
      </tns:exercise>
      <tns:exercise>
        <tns:topic>XSD</tns:topic>
        <tns:description>From Instance to Schema</tns:description>
      </tns:exercise>
    </tns:exercises>
    Best Regards,
    <tns:person>tns:person</tns:person>
  </tns:content>
</tns:xsdemail>
```

