Introduction to Web Technology

Lab Programming Exercise (Week 8)
(this is not an assignment)

Here is a sample of XSD code:

```
<?xml version="1.0" ?>
<xsd:schema xmlns:xsd="http://www.w3.org/2001/XMLSchema">
   . . .
</xsd:schema>
```

Question 1. Given the following XML code containing an exam result where score is an integer; and contestant id, exam id, band and digital signature are strings. Your task is to write the corresponding XSD code and save it into the file q1.xsd.

```
<?xml version="1.0"?>
<result ref="10007629P">
  <contestantId>00025142</contestantId>
  <examId>KB253DG</examId>
  <score>156</score>
  <band>C</band>
  <digitalSignature>a720cf8e23bc1256bce2</digitalSignature>
</result>
```

Question 2. Copy the code from q1.xsd to q2.xsd.
In q2.xsd, add the following restrictions:
  - Band values must be A, B, C or D.
  - Score values must be an integer between 0 and 300.
Here is a sample of restriction code:

```
<xsd:restriction base="xsd:integer">
  <xsd:minInclusive value="0" />
  <xsd:maxInclusive value="100" />
</xsd:restriction>

<xsd:restriction base="xsd:string">
  <xsd:enumeration value="LARGE" />
  <xsd:enumeration value="MEDIUM" />
  <xsd:enumeration value="SMALL" />
</xsd:restriction>
```

Question 3. Given the following XML code.

Your task is to write the corresponding XSD code and save it into the file q3.xsd.

```xml
<?xml version="1.0"?>
<audit campus="Woolloomooloo" year="2000" session="A">

  <subject sid="0769642">
    <code>MATH101</code>
    <title>Calculus</title>
    <statistics>
      <enrol>170</enrol>
      <withdrawn>31</withdrawn>
    </statistics>
  </subject>

  <subject sid="1734231">
    <code>MATH234</code>
    <title>Abstract Algebra</title>
    <statistics>
      <enrol>40</enrol>
      <withdrawn>15</withdrawn>
    </statistics>
  </subject>

</audit>
```

END OF THE PROGRAMMING EXERCISE