Project 2 Deliverable 1

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Question 1

a) What are XML Namespaces?

XML namespace are conflict resolvers that enable us to mix XMLs' from different applications. This is achieved by creating different namespaces which act as classifier elements. These are defined in W3C recommendations.

Example.

```
 <student>
        <course>ADS</course>
        <term>fall-2013</term>
 </student>


 <student>
        <firstname>somename</firstname>
        <lastname>anothername</lastname>
 </student>
```

We can differentiate between the student records found above by appending them with a different prefix called the Namespace.

<c : student>   and <n : student >

b) What is Xpath?

Xpath is a query language which is used to retrieve xml nodes. Using this we can get the content in the XML. This relies on the tree structure representation of XML. In Xpath terminology there are 7 kinds of nodes.
Nodes:
1. element
2. attribute
3. text
4. namespace
5. processing-instruction
6. comment
7. document nodes.

Simplest xpath for a structure like

```
<student>
  <firstname>
    somename
```

```
  </firstname>
</student>
```

XPath is : /student/firstname

c) **What is DOM and how does it relate to XML?**

DOM is Document Object Model and has 3 standards for XML, HTML and Core DOM. DOM views an xml as node-tree structure. Nodes are Parents-> have Children -> have siblings. This is a standard to access the nodes. This can be used for add, delete, change and get the elements. It defines the objects and also methods to access them. XML DOM is platform independent. XML Parsers are used to create a DOM from an XML. The nodes modelled by XML DOM can be accessed using the Java Script or other programming languages.

d) **What are XML serialization and binary serialization ?**

XML Serialization:
This is also known as shallow serialization as this can only be performed on public objects.
• The process of conversion of regular programming language objects to XML format is called the XML serialization.
• The output files produced by this kind of serialization are flat files in human readable form.
• These files can be viewed, shared and read as characters by other applications over servers.

Binary Serialization:
This is also known as Deep Serialization as it can serialize the object containing references to other objects.
• The process of conversion of regular programming objects into binary format is known as Binary Serialization.
• The output files produced by this kind of serialization are binary files which are not in human readable form. These occupy less space as compared to the XML Serialization. This is a byte stream.
• These files can be viewed, shared and read as characters by other applications over servers.

e) **What is Xquery?**
Xquery is a functional programming language used to extract and manipulate data from XMLs'. Xquery can also be used to transform XML document and thus it does many thing which XSLT can perform. It has the capability to combine documents, databases and webpages. It is much similar to SQL for databases.
XQuery uses path expressions to navigate through the nodes.