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ASSIGNMENT - 2

1) What is XML? What are its advantages and disadvantages.

- XML stands for extensible markup language.
- XML is a markup language used to store and transport data.
- XML uses a set of predifined tags to make up the data in a document, similar to HTML but users can define tags-too
- XML is used to describe the meaning and content of the data within a document rather than its layout and appearance.
- XML is a flexible open standard, and can be used with a wide variety of systems and applications
- XML is easy to read and write and can be used to represent complex data structures.
- XML is often used in conjunction with other technologies such as XSL to transform and present data in different formats.
- XML is commonly used to exchange data between different systems and applications as it is platform independent.

Advantages of using XML over a database:

* Platform independence: XML is a platform-independent format, meaning it can be used on any operating system. In contrast, different databases may have different requirements for hardware and software, making them less portable.
* Human readable: XML is a human readable format, meaning it can be easily understood and edited by humans. This can make it easier for people to work with the maintain XML data, as opposed to dealing with a more complex database structure
* Extensibility: XML is extensible, meaning it is easy to add new tags and attributes to an XML document. This can make it more flexible for storing and organising data that may change or evolve over time.
* Wide support: XML is widely supported and can be used with a variety of programs and languages. This makes it easier to work ~~with~~ with and integrate XML data into different systems and applications.
* Self describing: XML is a self describing language, it contains tags that provide information about the data contained in the file

2) Explain XSL with a suitable example

XSL (extensible Stylesheet Language) is a programming language that is used to transform XML documents into other formats such as HTML or PDF. It is typically used to control the presentation of data that is stored in XML documents.

Example : XSL stylesheet that transforms an XML document into an HTML table :

```
<xsl:stylesheet version="1.0" xmlns:xsl="http://www.w3.org">
<xsl:template match="/">
  <table border="1">
  <tr>
    <th> Name </th>
    <th> Age </th>
  </tr>
  <xsl:for-each select :"people/person">
    <tr>
    <td> <xsl:value-of select="name"/> </td>
    <td><xsl:value-of select="age"/> </td>
  </tr>
  </xsl:for-each>
</table>
</xsl:template>
</xsl:stylesheet>
```

This XSL stylesheet defines a template that matches the root element of the XML document. Inside the template, it creates an HTML table with two columns : "Name and "Age". Then, it uses an 'xsl:for-each' loop to iterate over all the 'person' elements in the 'people' element, and creates a row in the table for each person. Finally, it uses 'xsl:value-of' to insert the values of 'name' and 'age' elements into cells.

To use this XSL stylesheet, you would apply it to an XML document that contains data about people, like this:

```
<?xml version="1.0"?>
<people>
    <person>
        <name>Alice</name>
        <age>30</age>
    </person>
<person>
    <name>Bob</name>
    <age>25</age>
</person>
</people>
```

The resulting HTML output would be a table with two rows, one for each person in the XML document.

```
<table border="1">
    <tr>
        <th>Name</th>
        <th>Age</th>
    </tr>
    <tr>
        <td>Alice</td>
        <td>30</td>
    </tr>
    <tr>
        <td>Bob</td>
        <td>25</td>
    </tr>
</table>
```