Summary Report

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Validation Process

- The validation process uses a Python script which inturn uses the **lxml** python package.
- It involves the construction of an **ElementTree** object for a **.xml** file and its corresponding **.xsd** file.
- The **ElementTree** object of the **.xsd** file is then used to construct a **XML Schema Validator** object.
- That object is used to finally validate the **.xml** file against the **XSD** by invoking the **.assertValid()** method.
- This can raise a **DocumentInvalid** exception if the **.xml** file violates the **XSD**. If it is not raised, then it implies that the **.xml** file is valid.

Transformation Process

- After the successful validation of the **.xml** file, the transformation process begins.
- This involves the creation of a **XSLT** object from the **ElementTree** object of a **.xsl** file.
- The resulting object is a **callable** which when called with an **ElementTree** object of a **.xml** file as an argument performs the transformation.
- The transformation can be written to a **.html** file in **binary** mode only.
- The **.html** file can then be opened with a browser of your choice to view the transformed **XML**.

What is XSL and XSD?

- **XSL** is a **W3C Recommendation** which stands for *Extensible Stylesheet Language*. It is used for defining **XML** document transformation and presentation.
- **XSD** too, is a **W3C Recommendation**. It is called *XML Schema Definition Language*. It facilitates describing the structure and constraining what can constitute the **XML** document.
- Both **XSL** and **XSD** are themselves extensions of the **XML**, *Extensible Markup Language*.
- The **XSL** file **transform.xsl** defines transformations for the **XML** file **products.xml** by displaying the elements formatted as a table.
- The **XSD** file **product_schema.xsd** adds constraints for the **XML** file contents such as the element **Price** cannot be negative and should be a decimal number. The element **ID** must not be negative.