Installing development tools for XML:

Step 1: **complete if you do not have any version of Eclise installed**
Choose one download and install:

- Eclipse IDE for Java Developer with XML Editor: https://www.eclipse.org/downloads/

- Aptana Studio (is an smaller Eclipse version for web development, stand alone version): http://www.aptana.com/products/studio3/download

Step 2: **Warning: if your Eclipse version is new, you may already have it.**

- In Aptana or Eclipse: click Help, then click Install New Software.

- In the Work with bar click on the arrow down and select updates or releases link. Scroll down and you should see Web, XML, Java EE… link. Expand that link.

- Select all links for Eclipse XML and Web development. Click Next, in every window until finished.

Step 3: **Creating the XML file**

- Create a new project (for a new version of eclipse you can choose Java project, for an older one best to select General Project)

- Scroll down and add an XML file, name the file "Patient"

- Inside the XML file window click on Source tab and one the second line (do not delete first line) type in the following:

```
<Patient>
    <PN>
        <FN>Donald</FN>
        <LN>Duck</LN>
    </PN>
    <ID>12345</ID>
    <NK>
        <name>joe</name>
        <relationship>brother</relationship>
        <phone>123</phone>
    </NK>
</Patient>
```

- Click on the design and see the architecture of your XML document.

Step 4: **DTD**

- click on File, then New, then Other and select DTD file.

- Call the file "Patient"

Add the following information starting on the second line:
```
<!--DTD for Patient.xml-->
<!ELEMENT Patient (PN, ID, NK+)>
<!ELEMENT PN (FN, LN)>
<!ELEMENT FN (#PCDATA)>
<!ELEMENT LN (#PCDATA)>
<!ELEMENT ID (#PCDATA)>
<!ELEMENT NK (name, relationship, phone)>
<!ELEMENT name (#PCDATA)>
<!ELEMENT relationship (#PCDATA)>
<!ELEMENT phone (#PCDATA)>
```

Step 5: **Schema**

In the source window type the following:
```
<?xml version="1.0"?>
<xs:schema xmlns:xs="http://www.w3.org/2001/XMLSchema">

    <xs:element name="Patient">
      <xs:complexType>
            <xs:sequence>
                <xs:element name="PN" type="xs:string"/>
                    <xs:element name="ID" type="xs:string"/>
                    <xs:element name="NK" type="xs:string"/>
                    <xs:element name="name" type="xs:string"/>
                    <xs:element name="relationship" type="xs:string"/>
                    <xs:element name="phone" type="xs:string"/>
            </xs:sequence>
            </xs:complexType>
    </xs:element>

</xs:schema>
```

Step 6: Linking the XML file with the schema or DTD for validation

Modify the XML document to validate with Dad or Schema by adding the <!DOCTYPE Patient> statement to validate with DTD. After you add the statement right click on the

xml file in the project explorer and click validate. If it does not return any error, then validation is successful.

Add
xmlns:xs="http://www.w3.org/2001/XMLSchema"
xs:noNamespaceSchemaLocation="Patient.xsd">
Under the root tag to validate with Schema. Remove or comment the DTD validation. Right click on the Xml file and validate as previously instructed.

Note:
<!-- this is a comment in xml->


```xml
<?xml version="1.0" encoding="UTF-8"?>
<!--following line is making a reference to DTD / remove the comment tag to validate-->
<!-- <!DOCTYPE Patient> -->

<Patient>
<!--following is making a reference to schema / remove the comment tag to validate-->
 xmlns:xs="http://www.w3.org/2001/XMLSchema"
xs:noNamespaceSchemaLocation="Patient.xsd">
    <PN>
        <FN>Donald</FN>
        <LN>Duck</LN>
    </PN>
    <ID>12345</ID>
    <NK>
        <name>joe</name>
        <relationship>brother</relationship>
        <phone>123</phone>
    </NK>
</Patient>
```