Class Assignment
XML Theory
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Question: 1

Create an external DTD file for a Newspaper information satisfying the following requirements(Elements and attribute names are given in italics, Newspaper is theroot):

- A Newspaper must contain at least one Article.
- Each Article should be a sequence (one and exactly one sequence) of Headline, Byline, Lead, Body, and Notes.
- Each Headline, Byline, Lead, Body, and Notes will contain parse able character data.
- The Article will have four attributes, Author, Editor, Date, and Edition. Among them, Author and Editor are strictly required, and, Date and Edition are optional.

Write an example XML file satisfying the necessary constraints, and validate the file against the DTD file.

news.xml
xml Code:-

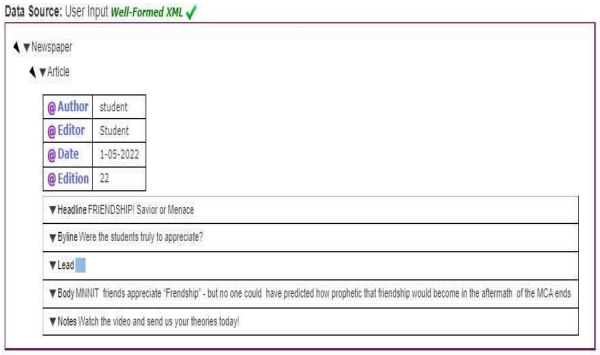
```
<?xml version="1.0"?>
<!DOCTYPE Newspaper SYSTEM "news.dtd">
<Newspaper>
 <Article Author="student" Editor="Student" Date="1-05-2022" Edition="22">
 <Headline>FRIENDSHIP! Savior or Menace </Headline>
 <Byline>Were the students truly to appreciate?</Byline>
 <Lead></Lead>
 <Body>MNNIT friends appreciate “Friendships” - but no one could
 have predicted how prophetic that friendship would become in the
aftermathof the MCA ends
</Body>
 <Notes>Watch the video and send us your theories today!</Notes>
 </Article>
</Newspaper>
```

news.dtd

```
    <!ELEMENT Newspaper (Article+)>
<!ELEMENT Article (Headline, Byline, Lead, Body, Notes)>
<!ELEMENT Headline (#PCDATA)>
<!ELEMENT Byline (#PCDATA)>
```

```
<!ELEMENT Lead (#PCDATA)>
<!ELEMENT Body (#PCDATA)>
<!ELEMENT Notes (#PCDATA)>
<!ATTLIST Article Author CDATA #REQUIRED>
<!ATTLIST Article Editor CDATA #REQUIRED>
<!ATTLIST Article Date CDATA #IMPLIED>
 <!ATTLIST Article Edition CDATA #IMPLIED>
```

Output:-



Question-2:-

Write an Example XML file having CATALOG as root element satisfying the following DTD.

Proof the correctness of your DTD file as well.

cat.xml

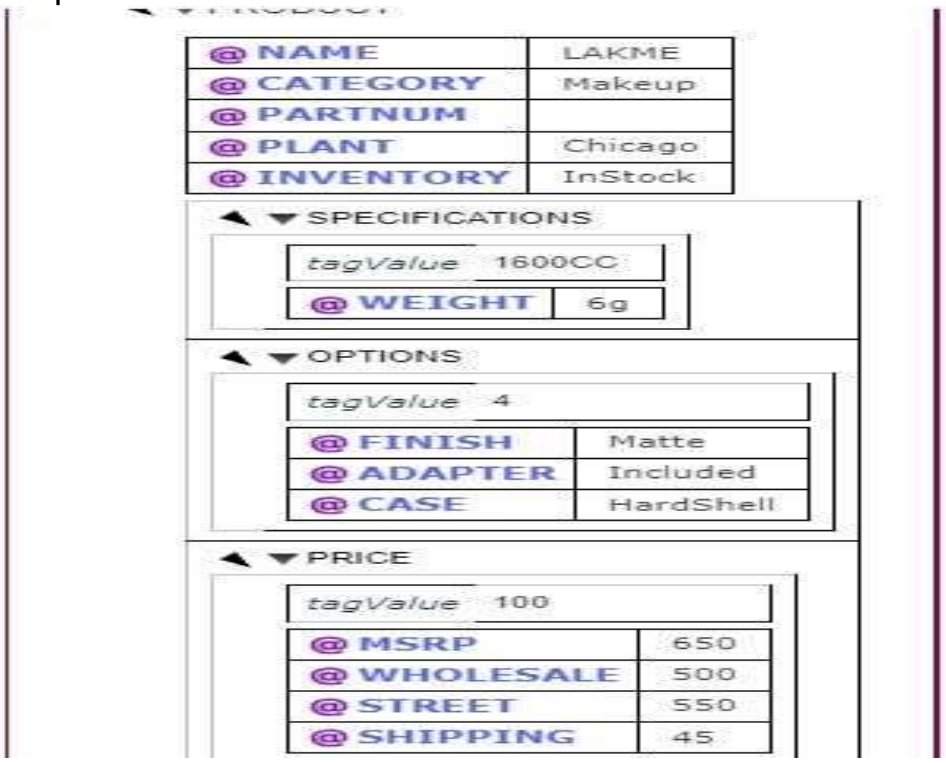
xml code:-

```
<?xml version="1.0"?>

<!DOCTYPE CATALOG SYSTEM "catalog.dtd">

<CATALOG>

 <PRODUCT NAME="LAKME" CATEGORY="Makeup" PARTNUM=""
PLANT="Chicago"INVENTORY="InStock">
 <SPECIFICATIONS WEIGHT="6g" >1600CC</SPECIFICATIONS>

 <OPTIONS FINISH="Matte" ADAPTER="Included"
CASE="HardShell">4</OPTIONS>
 <PRICE MSRP="650" WHOLESALE="500" STREET="550"
SHIPPING="45">100</PRICE>

 <NOTES>Hello</NOTES>

 </PRODUCT>

</CATALOG>
```

cat.dtd
dtd code:-

```
<!ELEMENT CATALOG (PRODUCT+)>
<!ELEMENT PRODUCT (SPECIFICATIONS+,OPTIONS?,PRICE+,NOTES?)>
<!ATTLIST PRODUCT NAME CDATA #IMPLIED CATEGORY
(HandTool|Table|Shop-Professional)  "HandTool
```

PARTNUM CDATA #IMPLIED PLANT (Pittsburgh|Milwaukee|Chicago)
"Chicago" INVENTORY (InStock|Backordered|Discontinued) "InStock">

<!ELEMENT SPECIFICATIONS (#PCDATA)>
<!ATTLIST SPECIFICATIONS WEIGHT CDATA #IMPLIED
POWER CDATA #IMPLIED>
<!ELEMENT OPTIONS (#PCDATA)>
<!ATTLIST OPTIONS FINISH (Metal|Polished|Matte) "Matte"
ADAPTER (Included|Optional|NotApplicable) "Included"
CASE (HardShell|Soft|NotApplicable) "HardShell">
<!ELEMENT PRICE (#PCDATA)>
<!ATTLIST PRICE MSRP CDATA #IMPLIED WHOLESALE CDATA #IMPLIED
STREET CDATA #IMPLIED SHIPPING CDATA #IMPLIED>
<!ELEMENT NOTES (#PCDATA)>

Output:-