MODE 4201-05

Lab 3

XML and Related Technologies
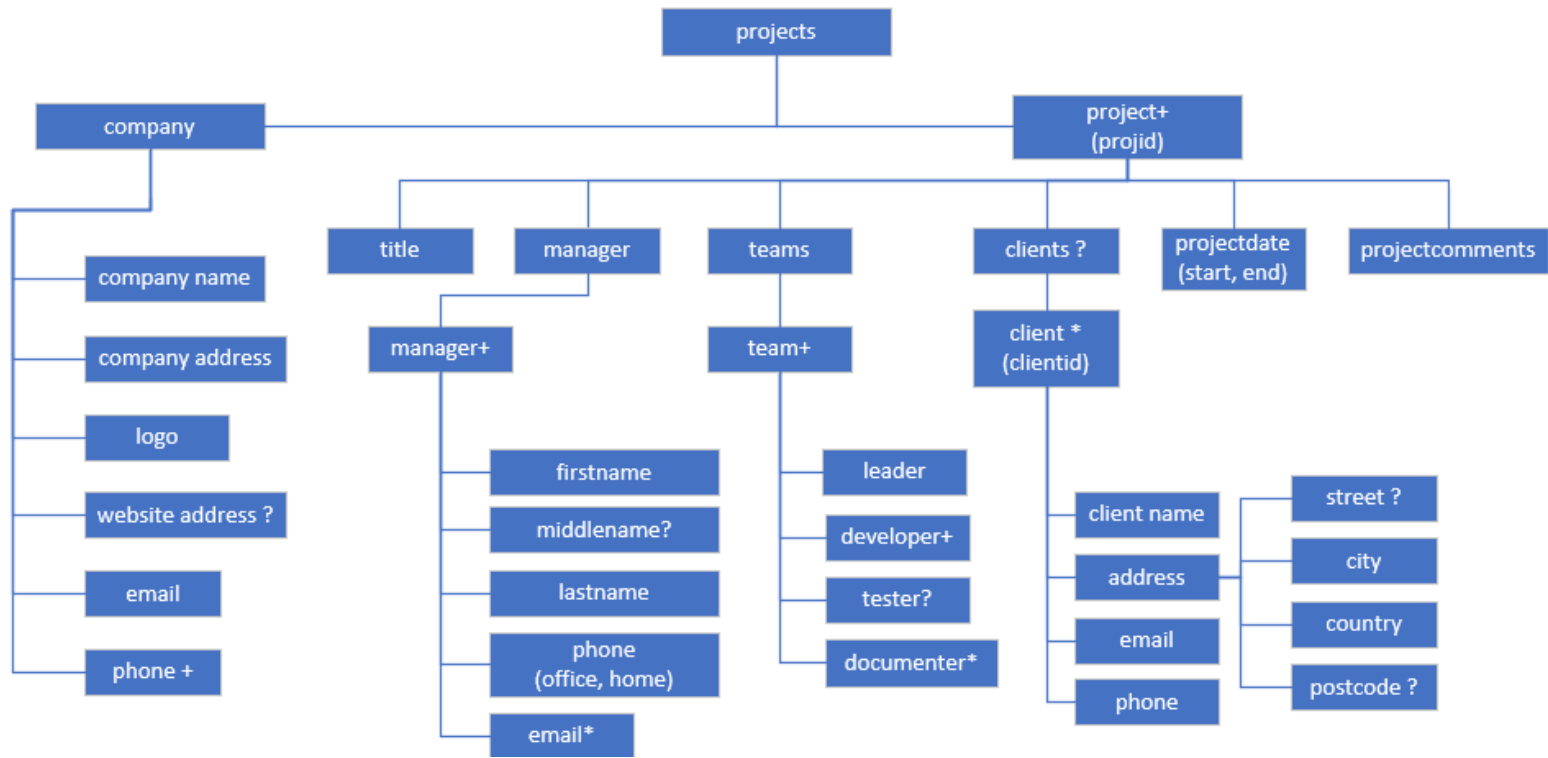
Parth Patel

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Contents:

1: XML Tree Diagram:

```
                                          projects
                                             |
              +------------------------------+------------------------------+
              |                                                             |
          company                                                      project+
              |                                                         (projid)
    +---------+                          +--------+--------+--------+--------+--------+
    |                                    |        |        |        |        |        |
company name                          title    manager  teams   clients ?  projectdate  projectcomments
    |                                             |        |        |        (start, end)
company address                             manager+    team+    client *
    |                                             |        |      (clientid)
  logo                                            |        |          |
    |                                       firstname   leader    +---------+
website address ?                           middlename? developer+  client name   street ?
    |                                        lastname   tester?     address       city
  email                                       phone    documenter*  email         country
    |                                      (office, home)           phone         postcode ?
 phone +                                      email*
```

2: projects.dtd:

```
<!ELEMENT projects (company, project+)>
<!ELEMENT company (companyname, companyaddress, logo, websiteaddress?, email,
phone+)>
<!ELEMENT companyname (#PCDATA)>
<!ELEMENT companyaddress (#PCDATA)>
<!ELEMENT logo (#PCDATA)>
<!ELEMENT websiteaddress (#PCDATA)>
<!ELEMENT email (#PCDATA)>
<!ELEMENT phone (#PCDATA)>
<!ATTLIST project projid ID #REQUIRED>
<!ELEMENT project (title, managers, teams, clients?, projectdate,
projectcomments)>
<!ELEMENT title (#PCDATA)>
<!ELEMENT managers (manager+)>
<!ELEMENT manager (firstname, middlename?, lastname, phone, email*)>
<!ELEMENT firstname (#PCDATA)>
<!ELEMENT middlename (#PCDATA)>
<!ELEMENT lastname (#PCDATA)>
<!ATTLIST phone
    office CDATA #IMPLIED
    home CDATA #IMPLIED>
<!ELEMENT teams (team+)>
<!ELEMENT team (leader, developer+, tester?, documenter*)>
<!ELEMENT leader (#PCDATA)>
<!ELEMENT developer (#PCDATA)>
<!ELEMENT tester (#PCDATA)>
<!ELEMENT documenter (#PCDATA)>
<!ELEMENT clients (client*)>
<!ATTLIST client clientid ID #REQUIRED>
<!ELEMENT client (clientname, address, email, phone)>
<!ELEMENT clientname (#PCDATA)>
<!ELEMENT address (street?, city, country, postcode?)>
<!ELEMENT street (#PCDATA)>
<!ELEMENT city (#PCDATA)>
<!ELEMENT country (#PCDATA)>
<!ELEMENT postcode (#PCDATA)>
<!ELEMENT projectdate EMPTY>
<!ATTLIST projectdate
    start CDATA #IMPLIED
    end CDATA #IMPLIED>
<!ELEMENT projectcomments (#PCDATA)>
```

3: projects.xml:

```xml
<?xml version="1.0"?>
<!DOCTYPE projects SYSTEM "projects.dtd">
<projects>
    <company>
        <companyname>The-PYPatel Inc.</companyname>
        <companyaddress>223-122 Colborne St E, Oshawa, ON,
Canada</companyaddress>
        <logo>logo.jpg</logo>
        <websiteaddress>https://pypatel593m.github.io/</websiteaddress>
        <email>pypatel593m@gmail.com</email>
        <phone>365-688-XXXX</phone>
        <phone>905-447-XXXX</phone>
    </company>
    <project projid="P01">
        <title>Tarneeb</title>
        <managers>
            <manager>
                <firstname>Ethan</firstname>
                <lastname>Bentolila</lastname>
                <phone office="180-056-7890"
                            home="XXX-XXX-4567"/>
                <email>ethan.bentolila@example.com</email>
            </manager>
        </managers>
        <teams>
            <team>
                <leader>Marshall</leader>
                <developer>David</developer>
                <developer>Sid</developer>
                <tester>Taylor</tester>
                <documenter>Alex</documenter>
            </team>
        </teams>
        <clients>
            <client clientid="CL1">
                <clientname>Alladin Adas</clientname>
                <address>
                    <street>2000 Simcoe St N</street>
                    <city>Oshawa</city>
                    <country>Canada</country>
                    <postcode>L1G0C5</postcode>
                </address>
                <email>Alladin.adas@dcmail.ca</email>
                <phone>123-456-7890</phone>
            </client>
```

```xml
        </clients>
        <projectdate start="Jan 7 2022"
                     end="April 24 2022"/>
        <projectcomments>
            This was the best project of the company The-PYPatel, it required
lot of people to work as a team and proper developement approche was used for
this system.
        </projectcomments>
    </project>
    <project projid="PO2">
        <title>ICC Database Design</title>
        <managers>
            <manager>
                <firstname>Parth</firstname>
                <lastname>Patel</lastname>
                <phone office="365-688-XXXX"
                            home="365-000-XXXX"/>
                <email>pypatel593m@gmail.com</email>
            </manager>
        </managers>
        <teams>
            <team>
                <leader>Shweta</leader>
                <developer>Devanshi</developer>
                <developer>Shweta</developer>
                <developer>Parth</developer>
                <developer>Dhruv</developer>
                <tester>Parth</tester>
                <documenter>Dhruv</documenter>
            </team>
        </teams>
        <clients>
            <client clientid="CL2">
                <clientname>Mina Labib</clientname>
                <address>
                    <street>2000 Simcoe St N</street>
                    <city>Oshawa</city>
                    <country>Canada</country>
                    <postcode>L1G0C5</postcode>
                </address>
                <email>Mina.labib@dcmail.ca</email>
                <phone>109-876-5432</phone>
            </client>
            <client clientid="CL3">
                <clientname>Fiona</clientname>
                <address>
                    <street>123 Simcoe St N</street>
                    <city>Oshawa</city>
```

```
            <country>Canada</country>
            <postcode>A1B2C3</postcode>
         </address>
         <email>fiona.icc@example.com</email>
         <phone>555-666-8888</phone>
      </client>
   </clients>
   <projectdate start="Sept 7 2022"
                end="Dec 24 2022"/>
   <projectcomments>
       This is ongoing project of the company, whose client is a
Immaculate Cleaning Concepts (ICC), which is a company which provides the
cleaning services.
       And Our company is supposed to create database and application
which best suits to the client.
   </projectcomments>
   </project>
</projects>
```

4: Validate the XML document against the DTD: