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Enrollment No – BT21GCS161

Dimensional and NoSQL Databases

Assignment 11

Activity – DTD Document

- i) Prepare DTD for all the 7 table – Having only 1 entry per DTD*
- ii) Prepare DTD for all the 7 table – Allowing all entries (with 5 entries)*

Hr schema table –

1)COUNTRIES

<i>column name</i>	<i>data type</i>
<i>country_id</i>	<i>char (2)</i>
<i>country_name</i>	<i>varchar2 (40)</i>
<i>region_id</i>	<i>number</i>

2)DEPARTMENTS

<i>column name</i>	<i>data type</i>
<i>department_id</i>	<i>number</i>
<i>department name</i>	<i>varchar2(30)</i>
<i>manager_id</i>	<i>number</i>
<i>location_id</i>	<i>number</i>

3)EMPLOYEES

<i>column name</i>	<i>data type</i>
<i>employee_id</i>	<i>number</i>
<i>first_name</i>	<i>varchar2(20)</i>
<i>last_name</i>	<i>varchar2(25)</i>
<i>email</i>	<i>varchar2(255)</i>
<i>phone_number</i>	<i>varchar2(20)</i>
<i>hire_date</i>	<i>date</i>
<i>job_id</i>	<i>varchar2(10)</i>
<i>salary</i>	<i>number (8,2)</i>
<i>commission_pct</i>	<i>number (2,2)</i>
<i>manager_id</i>	<i>number</i>
<i>department_id</i>	<i>number</i>

4)JOBS

<i>column name</i>	<i>data type</i>
<i>job_id</i>	<i>varchar2(10)</i>
<i>job_title</i>	<i>varchar2(35)</i>
<i>min_salary</i>	<i>number (6)</i>
<i>max_salary</i>	<i>number (6)</i>

5)JOB_HISTORY

<i>column name</i>	<i>data type</i>
employee_id	Number (6)
start_date	date
end_date	date
job_id	varchar2(10)
department_id	Number (4)

6)LOCATIONS

<i>column name</i>	<i>data type</i>
<i>location_id</i>	<i>number</i>
<i>street_address</i>	<i>varchar2(40)</i>
<i>postal_code</i>	<i>varchar2(12)</i>
<i>city</i>	<i>varchar2(30)</i>
<i>state_province</i>	<i>varchar2(25)</i>
<i>country_id</i>	<i>char (2)</i>

7)REGIONS

<i>column name</i>	<i>data type</i>
<i>region_id</i>	<i>number</i>
<i>region_name</i>	<i>varchar2(25)</i>

Task 1 - Prepare DTD for all the 7 table – Having only 1 entry per DTD

Countries DTD

```
<!DOCTYPE COUNTRIES [  
<!ELEMENT COUNTRIES Table (COUNTRIES++)>  
<!ELEMENT COUNTRIES (Country_ID, Country_Name, Region_ID)>  
<!ELEMENT Country_ID (#PCDATA)>  
<!ELEMENT Country_Name (#PCDATA)>  
<!ELEMENT Region_ID (#PCDATA)>  
>
```

XML

```
<?xml version="1.0"?>  
<!DOCTYPE countries SYSTEM "countries.dtd">  
<countries>  
  <Countries>  
    <country_ID>In</country_ID>  
    <Country_Name>India</Country_Name>  
    <Region_ID>101</Region_ID>  
  </Countries>  
</countries>
```

Departments DTD

```
<!DOCTYPE DEPARTMENT [  
<!ELEMENT DEPARTMENT Table (DEPARTMENTS++)>  
<!ELEMENT DEPARTMENTS (Department_ID, Department_Name, manager_id, Location_ID)>  
<!ELEMENT Department_ID (#PCDATA)>  
<!ELEMENT Department_Name (#PCDATA)>  
<!ELEMENT Manager_id (#PCDATA)>  
<!ELEMENT Location_ID (#PCDATA)>  
>
```

XML

```
<?xml version="1.0"?>  
<!DOCTYPE department SYSTEM "department.dtd">
```

```

<departments>
  <department>
    <Department_ID>161</Department_ID>
    <Department_Name>system Analysis</Department_Name>
    <Manager_ID>210</Manager_ID>
    <Location_ID>12</Location_ID>
  </department>
</departments>

```

-----Employee DTD-----

```

<!DOCTYPE Employees [
  <!ELEMENT EmployeesTable (Employee+)>
  <!ELEMENT Employee (EmployeeID, FirstName, LastName, Email, PhoneNo, hireDate, Job_ID, Salary,
commissionpct, manager_id, Department_ID)>
  <!ELEMENT EmployeeID (#PCDATA)>
  <!ELEMENT FirstName (#PCDATA)>
  <!ELEMENT LastName (#PCDATA)>
  <!ELEMENT Email (#PCDATA)>
  <!ELEMENT PhoneNo (#PCDATA)>
  <!ELEMENT HireDate (#PCDATA)>
  <!ELEMENT Job_ID (#PCDATA)>
  <!ELEMENT Salary (#PCDATA)>
  <!ELEMENT commission_pct (#PCDATA)>
  <!ELEMENT manager_id (#PCDATA)>
  <!ELEMENT Department_ID (#PCDATA)>
]>

```

-----XML-----

```

<?xml version="1.0"?>
<!DOCTYPE employees SYSTEM "employees.dtd">
<employees>
  <employee>
    <employee_id>1</employee_id>
    <first_name>Aryan</first_name>
    <last_name>Sharma</last_name>
    <email>aryan@gmail.com</email>

```

```
<phone_number>9960765259</phone_number>
<hire_date>2022-07-26</hire_date>
<job_id>system Analysis</job_id>
<salary>90000</salary>
<commission_pct>0.1</commission_pct>
<manager_id>210</manager_id>
<department_id>161</department_id>
</employee>
</employees>
```

Jobs DTD

```
<!DOCTYPE JOBS [
<!ELEMENT JOBSTable (JOBS++)>
<!ELEMENT jobs (Job_ID, Job_Title, Min_Salary, Max_Salary)>
<!ELEMENT Job_ID (#PCDATA)>
<!ELEMENT Job_Title (#PCDATA)>
<!ELEMENT Min_Salary (#PCDATA)>
<!ELEMENT Max_Salary (#PCDATA)>
]>
```

XML

```
<?xml version="1.0"?>
<!DOCTYPE jobs SYSTEM "jobs.dtd">
<jobs>
  <job>
    <Job_ID>40</Job_ID>
    <Job_Title>Jr.System Analysis</Job_Title>
    <Min_Salary>50000</Min_Salary>
    <Max_Salary>1000000</Max_Salary>
  </job>
</jobs>
```

JOB_History DTD

```
<!DOCTYPE JOB_HISTORY [
<!ELEMENT JOB_HISTORYTable (JOB_HISTORY++)
```

```

<!ELEMENT JOB_HISTORY (Employee_id, Start_date, End_date, job_id)>
<!ELEMENT Employee_id (#PCDATA) >
<!ELEMENT Start_date (#PCDATA) >
<!ELEMENT End_date (#PCDATA) >
<!ELEMENT job_id (#PCDATA) >
]>

```

-----XML-----

```

<?xml version="1.0"?>
<!DOCTYPE job_history SYSTEM "job_history.dtd">
<job_historys>
  <job_history>
    <Employee_id>1</Employee_id>
    <Start_date>2022-07-26</Start_date>
    <End_date>2022-06-29</End_date>
    <job_id>40</job_id>
  </job_history>
</job_historys>

```

-----Locations DTD-----

```

<!DOCTYPE LOCATIONS [
<!ELEMENT LocationTable (Location++)
<!ELEMENT Location (Location_ID, Street_address, Postal_code, City, State_province, Country_id)>
<!ELEMENT Location_ID (#PCDATA)>
<!ELEMENT Street_address (#PCDATA)>
<!ELEMENT Postal_code (#PCDATA)>
<!ELEMENT City (#PCDATA)>
<!ELEMENT State_province (#PCDATA)>
<!ELEMENT Country_id (#PCDATA)>
]
]>

```

-----XML-----

```

<?xml version="1.0"?>
<!DOCTYPE locations SYSTEM "locations.dtd">
<locations>
  <location>
    <Location_ID>12</Location_ID>

```

```
< Street_address >Thane</ Street_address >

< Postal_code >421503</ Postal_code >

< City >Thane</ City >

< State_province >MH</ State_province >

< Country_id > In </ Country_id >

</location>

</locations>
```

REGIONS DTD

```
<!DOCTYPE Region [
<!ELEMENT REGIONSTable (Region++)
<!ELEMENT Region (Region_ID, Region_Name)>
<!ELEMENT Region_ID (#PCDATA)>
<!ELEMENT Region_Name (#PCDATA)>
]>
```

XML

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

<!DOCTYPE regions SYSTEM "regions.dtd">

<regions>

  <region>

    <Region_ID>101</Region_ID>

    <Region_Name>Asia</Region_Name>

  </region>

</regions>
```

Task 2 - Prepare DTD for all the 7 table – Allowing all entries (with 5 entries)

Countries DTD

```
<!DOCTYPE COUNTRIES [
<!ELEMENT COUNTRIESTable (COUNTRIES++)>
<!ELEMENT COUNTRIES (Country_ID, Country_Name, Region_ID)>
<!ELEMENT Country_ID (#PCDATA)>
<!ELEMENT Country_Name (#PCDATA)>
```

<!/ELEMENT Region_ID (#PCDATA)>

]>

-----XML-----

<?xml version="1.0"?>

<!/DOCTYPE countries SYSTEM "countries.dtd">

<countries>

<Countries>

<country_ID>In</country_ID>

<Country_Name>India</Country_Name>

<Region_ID>101</Region_ID>

</Countries>

<Countries>

<country_ID>USA</country_ID>

<Country_Name>United States</Country_Name>

<Region_ID>102</Region_ID>

</Countries>

<Countries>

<country_ID>In</country_ID>

<Country_Name>India</Country_Name>

<Region_ID>101</Region_ID>

</Countries>

<Countries>

<country_ID>USA</country_ID>

<Country_Name>United States</Country_Name>

<Region_ID>102</Region_ID>

</Countries>

<Countries>

<country_ID>Ch</country_ID>

<Country_Name>China</Country_Name>

<Region_ID>103</Region_ID>

</Countries>

</countries>

-----Departments DTD-----

<!/DOCTYPE DEPARTMENT [


```

</ELEMENT DEPARTMENTSTable (DEPARTMENTS++)>
</ELEMENT DEPARTMENTS (Department_ID, Department_Name, manager_id, Location_ID)>
</ELEMENT Department_ID (#PCDATA)>
</ELEMENT Department_Name (#PCDATA)>
</ELEMENT Manager_id (#PCDATA)>
</ELEMENT Location_ID (#PCDATA)>
]>

```

-----XML-----

```

<?xml version="1.0"?>
<!DOCTYPE department SYSTEM "department.dtd">
<departments>
  <department>
    <Department_ID>161</Department_ID>
    <Department_Name>system Analysis</Department_Name>
    <Manager_ID>210</Manager_ID>
    <Location_ID>12</Location_ID>
  </department>
  <department>
    <Department_ID>162</Department_ID>
    <Department_Name>DEVELOPER</Department_Name>
    <Manager_ID>211</Manager_ID>
    <Location_ID>10</Location_ID>
  </department>
  <department>
    <Department_ID>161</Department_ID>
    <Department_Name>system Analysis</Department_Name>
    <Manager_ID>210</Manager_ID>
    <Location_ID>12</Location_ID>
  </department>
  <department>
    <Department_ID>160</Department_ID>
    <Department_Name>Data Analysis</Department_Name>
    <Manager_ID>212</Manager_ID>
    <Location_ID>11</Location_ID>
  </department>
  <department>
    <Department_ID>162</Department_ID>

```

```

        <Department_Name>DEVELOPER</Department_Name>

        <Manager_ID>211</Manager_ID>

        <Location_ID>10</Location_ID>

    </department>
</departments>

```

-----Employee DTD-----

```

<!DOCTYPE Employees [
    <!ELEMENT EmployeesTable (Employee+)>

    <!ELEMENT Employee (EmployeeID, FirstName, LastName, Email, PhoneNo, hireDate, Job_ID, Salary,
commission_pct, manager_id, Department_ID)>

    <!ELEMENT EmployeeID (#PCDATA)>
    <!ELEMENT FirstName (#PCDATA)>
    <!ELEMENT LastName (#PCDATA)>
    <!ELEMENT Email (#PCDATA)>
    <!ELEMENT PhoneNo (#PCDATA)>
    <!ELEMENT HireDate (#PCDATA)>
    <!ELEMENT Job_ID (#PCDATA)>
    <!ELEMENT Salary (#PCDATA)>
    <!ELEMENT commission_pct (#PCDATA)>
    <!ELEMENT manager_id (#PCDATA)>
    <!ELEMENT Department_ID (#PCDATA)>
]>

```

-----XML-----

```

<?xml version="1.0"?>

<!DOCTYPE employees SYSTEM "employees.dtd">

<employees>
    <employee>
        <employee_id>1</employee_id>
        <first_name>Aryan</first_name>
        <last_name>Sharma</last_name>
        <email>aryan@gmail.com</email>
        <phone_number>9960765259</phone_number>
        <hire_date>2022-07-26</hire_date>
        <job_id>Jr.System Analysis</job_id>
        <salary>90000</salary>
        <commission_pct>0.1</commission_pct>
    
```

```
<manager_id>210</manager_id>
<department_id>161</department_id>
</employee>
<employee>
  <employee_id>2</employee_id>
  <first_name>Preksha</first_name>
  <last_name>Sharma</last_name>
  <email>Preksha.Sharma@gmail.com</email>
  <phone_number>7774885259</phone_number>
  <hire_date>2023-06-26</hire_date>
  <job_id>DEVELOPER</job_id>
  <salary>25000</salary>
  <commission_pct>0.1</commission_pct>
  <manager_id>211</manager_id>
  <department_id>162</department_id>
</employee>
<employee>
  <employee_id>3</employee_id>
  <first_name>Prachi</first_name>
  <last_name>Verma</last_name>
  <email>prachi.21@gmail.com</email>
  <phone_number>94374637280</phone_number>
  <hire_date>2022-06-10</hire_date>
  <job_id>system Analysis</job_id>
  <salary>35000</salary>
  <commission_pct>0.1</commission_pct>
  <manager_id>210</manager_id>
  <department_id>161</department_id>
</employee>
<employee>
  <employee_id>4</employee_id>
  <first_name>Raja</first_name>
  <last_name>Pandey</last_name>
  <email>RajaPandey@gmail.com</email>
  <phone_number>9326627281</phone_number>
  <hire_date>2023-05-29</hire_date>
  <job_id>Data Analysis</job_id>
```

```

        <salary>25000</salary>

        <commission_pct>0.1</commission_pct>

        <manager_id>212</manager_id>

        <department_id>160</department_id>
    </employee>
</employee>

    <employee_id>5</employee_id>

    <first_name>Ranjeev</first_name>

    <last_name>Singh</last_name>

    <email>Preksha.Sharma@gmail.com</email>

    <phone_number>7774885259</phone_number>

    <hire_date>2023-06-26</hire_date>

    <job_id>DEVELOPER</job_id>

    <salary>25000</salary>

    <commission_pct>0.1</commission_pct>

    <manager_id>211</manager_id>

    <department_id>162</department_id>
</employee>
</employees>

```

Jobs DTD

```

<!DOCTYPE JOBS [
<!ELEMENT JOBSTable (JOBS++)>
<!ELEMENT jobs (Job_ID, Job_Title, Min_Salary, Max_Salary)>
<!ELEMENT Job_ID (#PCDATA)>
<!ELEMENT Job_Title (#PCDATA)>
<!ELEMENT Min_Salary (#PCDATA)>
<!ELEMENT Max_Salary (#PCDATA)>
]>

```

XML

```

<?xml version="1.0"?>
<!DOCTYPE jobs SYSTEM "jobs.dtd">

<jobs>

    <job>

        <Job_ID>40</Job_ID>

        <Job_Title>Jr.System Analysis</Job_Title>

        <Min_Salary>50000</Min_Salary>

```

```

        <Max_Salary>1000000</Max_Salary>
    </job>
    <job>
        <Job_ID>40</Job_ID>
        <Job_Title>Jr.Developer</Job_Title>
        <Min_Salary>50000</Min_Salary>
        <Max_Salary>1000000</Max_Salary>
    </job>
    <job>
        <Job_ID>40</Job_ID>
        <Job_Title>Jr.System Analysis</Job_Title>
        <Min_Salary>50000</Min_Salary>
        <Max_Salary>1000000</Max_Salary>
    </job>
    <job>
        <Job_ID>40</Job_ID>
        <Job_Title>Sr. Data Analysis</Job_Title>
        <Min_Salary>50000</Min_Salary>
        <Max_Salary>1000000</Max_Salary>
    </job>
    <job>
        <Job_ID>40</Job_ID>
        <Job_Title>Jr. DEVELOPER</Job_Title>
        <Min_Salary>50000</Min_Salary>
        <Max_Salary>1000000</Max_Salary>
    </job>
</jobs>

```

-----**JOB_History DTD**-----

```

<!DOCTYPE JOB_HISTORY [
<!ELEMENT JOB_HISTORY Table (JOB_HISTORY++)
<!ELEMENT JOB_HISTORY (Employee_id, Start_date, End_date, job_id)>
<!ELEMENT Employee_id (#PCDATA) >
<!ELEMENT Start_date (#PCDATA) >
<!ELEMENT End_date (#PCDATA) >
<!ELEMENT job_id (#PCDATA) >
]>

```

-----XML-----

```
<?xml version="1.0"?>
<!DOCTYPE job_history SYSTEM "job_history.dtd">
<job_historys>
  <job_history>
    <employee_id>1</employee_id>
    <Start_date>2022-07-26</Start_date>
    <End_date>2022-06-29</End_date>
    <job_id>40</job_id>
  </job_history>
  <job_history>
    <Employee_id>2</employee_id>
    <Start_date>2023-06-26</Start_date>
    <End_date>2023-05-31</End_date>
    <job_id>40</job_id>
  </job_history>
  <job_history>
    <Employee_id>3</Employee_id>
    <Start_date>2022-06-10</Start_date>
    <End_date>2022-05-31</End_date>
    <job_id>40</job_id>
  </job_history>
  <job_history>
    <Employee_id>4</Employee_id>
    <Start_date>2023-05-29</Start_date>
    <End_date>2023-04-30</End_date>
    <job_id>40</job_id>
  </job_history>
  <job_history>
    <Employee_id>5</Employee_id>
    <Start_date>2023-06-26</Start_date>
    <End_date>2023-06-12</End_date>
    <job_id>40</job_id>
  </job_history>
</job_historys>
```

-----Locations DTD-----

```

<!DOCTYPE LOCATIONS [
<!ELEMENT LocationTable (Location++)
<!ELEMENT Location (Location_ID, Street_address, Postal_code, City, State_province, Country_id)>
<!ELEMENT Location_ID (#PCDATA)>
<!ELEMENT Street_address (#PCDATA)>
<!ELEMENT Postal_code (#PCDATA)>
<!ELEMENT City (#PCDATA)>
<!ELEMENT State_province (#PCDATA)>
<!ELEMENT Country_id (#PCDATA)>
]>

```

-----XML-----

```

<?xml version="1.0"?>
<!DOCTYPE locations SYSTEM "locations.dtd">
<locations>
  <location>
    <Location_ID>12</Location_ID>
    < Street_address >Thane</ Street_address >
    < Postal_code >421503</ Postal_code >
    < City >Thane</ City >
    < State_province >MH</ State_province >
    < Country_id >In </ Country_id >
  </location>
  <location>
    <Location_ID>10</Location_ID>
    < Street_address >Silicon Valley</ Street_address >
    < Postal_code >94301</ Postal_code >
    < City > California </ City >
    < State_province > California</ State_province >
    < Country_id >USA</ Country_id >
  </location>
  <location>
    <Location_ID>12</Location_ID>
    < Street_address >Thane</ Street_address >
    < Postal_code >421503</ Postal_code >
    < City >Thane</ City >
    < State_province >MH</ State_province >
    < Country_id >+91</ Country_id >
  </location>

```

</location>

<location>

<Location_ID>10</Location_ID>

< Street_address >Silicon Valley</ Street_address >

< Postal_code >94301</ Postal_code >

< City > California </ City >

< State_province > California</ State_province >

< Country_id >USA</ Country_id >

</location>

<location>

<Location_ID>11</Location_ID>

< Street_address > Shenzhen </ Street_address >

< Postal_code > 518000 </ Postal_code >

< City > Shenzhen </ City >

< State_province > Hong Kong </ State_province >

< Country_id >Ch</ Country_id >

</location>

</locations>

-----**REGIONS DTD**-----

<!DOCTYPE Region [

<!ELEMENT REGIONSTable (Region++)

<!ELEMENT Region (Region_ID, Region_Name)>

<!ELEMENT Region_ID (#PCDATA)>

<!ELEMENT Region_Name (#PCDATA)>

]>

-----XML-----

<?xml version="1.0"?>

<!DOCTYPE regions SYSTEM "regions.dtd">

<regions>

<region>

<Region_ID>101</Region_ID>

<Region_Name>Asia</Region_Name>

</region>

<region>

<Region_ID>102</Region_ID>

<Region_Name> North America </Region_Name>

</region>

<region>

<Region_ID>101</Region_ID>

<Region_Name>Asia</Region_Name>

</region>

<region>

<Region_ID>102</Region_ID>

<Region_Name> North America </Region_Name>

</region>

<region>

<Region_ID>101</Region_ID>

<Region_Name>Asia</Region_Name>

</region>

</regions>
