**MODELOS Y BASES DE DATOS**

**XML y SQL**

**2019-2**

**Laboratorio 05**

**Autores: Ricardo Amaya Rivera & Javier Esteban López Peña MBDA – 1**

**B. Consultas iniciales**

<! ---1

<Course\_Catalog/Department/Title>

<Course\_Catalog/Department/Title/text()>

<Course\_Catalog/Department/@\*> -->

<! ---2

<Course\_Catalog/Department/Course[Title='Introduction to Databases']>

<Course\_Catalog/Department/Course[Title='Introduction to Databases']/@\*>

<Course\_Catalog/Department/Course[Title='Introduction to Databases']/\*>

-->

<! ---3

Course\_Catalog/Department/Course[Description and Title and Instructors and Prerequisites]/Title/text()

-->

<! ---4

Course\_Catalog/sum(Department/Course/@Enrollment)

-->

<! ---5

Course\_Catalog/Department/Course[not(@Enrollment)]/Title/text()

-->

<! ---6

Course\_Catalog/Department/Course[not(Prerequisites)]/Title/text()

-->

<! ---7

Course\_Catalog/Department/Course[not(@Number=/Course\_Catalog/Department/Course/Prerequisites/Prereq/text())]/Title/text()

-->

<! ---8

Course\_Catalog/Department/Course[Instructors/Professor/Last\_Name=/Course\_Catalog/Department/Chair/Professor/Last\_Name ]/Title/text()

-->

<! ---9

Course\_Catalog/Department/Course[@Number!=parent::\*/Course/@Number and Intructors/Professor/Last\_Name/text()=parent::\*/Course/ Intructors/Professor/Last\_Name/text()]

-->

<! ---10

Course\_Catalog/Department[not(Chair/Professor/Last\_Name=/Course\_Catalog/Department/Course/Instructors/Lecturer/Last\_Name) and not(Chair/Professor/Last\_Name=/Course\_Catalog/Department/Course/Instructors/Professor/Last\_Name) ]/Chair/\*

-->

**B. Consultas quiz Standford**

<! ---1

Course\_Catalog//Title

-->

<! ---2

Course\_Catalog/Department/Chair/Professor/Last\_Name

-->

<! ---3

Course\_Catalog/Department/Course[@Enrollment>500]/ Title/text()

-->

<! ---4

Course\_Catalog/Department/Course[Prerequisites/Prereq/text()= "CS106B"]/Title

-->

<! ---5

Course\_Catalog/Department//(Professor | Lecturer)[Middle\_Initial]/Last\_Name

-->

<! ---6

Course\_Catalog/Department/Course[contains(Description/text(),"Cross-listed")]/Title/text()

-->

<! ---7

Course\_Catalog/Department[@Code= "CS"]/Course/@Enrollment

-->

<! ---8

Course\_Catalog/Department/Course[contains(Description/text(),"system") and @Enrollment>100]/Instructors/(Professor|Lecturer)/Last\_Name/text()

-->

<! ---9

Course\_Catalog/Department/Course[count(Instructors/\*)>2]/Title

-->

<! ---10

Course\_Catalog/Department/Course[@Enrollment>avg(/Course\_Catalog/Department/Course/@Enrollment)]/@Number

avg(/Course\_Catalog/Department/Course/@Enrollment)

-->

<! ---11

Course\_Catalog/Department/Course[Instructors[not(Lecturer)]]/@Number

-->

<! ---12

Course\_Catalog/Department/Course[Instructors//Last\_Name/text()=parent::\*/Chair/Professor/Last\_Name/text()]/Title/text()

-->

<! ---13

Course\_Catalog/Department/Course[Instructors[Professor/Last\_Name[text()="Ng"] and Professor/Last\_Name[text()="Thrun"] ]]/Title/text()

-->

<! ---14

Course\_Catalog/Department/Course[Prerequisites/Prereq/text() = /Course\_Catalog/Department/Course[Instructors/Professor[Last\_Name/text()="Roberts" and First\_Name/text()="Eric"]]/@Number]/@Number

-->

<! ---15

Course\_Catalog/Department/Course[Description[contains(text(),"system")] and @Enrollment >100]/Instructors/(Professor | Lecturer)/Last\_Name

-->

**C. Consultas propias**

<! ---1. Cuantos cursos tiene el departamento de lenguas

count(Course\_Catalog/Department[Title ="Linguistics"]/Course)

-->

<! ---2. Departamentos con mas de un curso

Course\_Catalog/Department[count(Course)>1]/Title

-->

<! ---3. Numero de profesores en total

count(Course\_Catalog/Department/Course/Instructors)

-->

<! ---4. Primer nombre de todos los profesores

Course\_Catalog/Department/Course/Instructors/Professor/First\_Name/text()

-->

<! ---5. Nombre de los profesores que tengan Segundo nombre

Course\_Catalog/Department/Course/Instructors/Professor[Middle\_Initial]/First\_Name/text

-->

**D. Esquema**

<?xml version="1.0"?>

<!DOCTYPE Course\_Catalog [

<!ELEMENT Course\_Catalog (Department\*)>

<!ELEMENT Department (Title,Chair,Course\*)>

<!ATTLIST Department Code CDATA #REQUIRED>

<!ELEMENT Title (#PCDATA)>

<!ELEMENT Chair (Professor)>

<!ELEMENT Professor (First\_Name,Middle\_Initial?,Last\_Name)>

<!ELEMENT First\_Name (#PCDATA)>

<!ELEMENT Middle\_Initial (#PCDATA)>

<!ELEMENT Last\_Name (#PCDATA)>

<!ATTLIST Course Number CDATA #REQUIRED

<!ATTLIST Course Enrollment CDATA #IMPLIED>

<!ELEMENT Course (Title,Description?,Instructors,Prerequisites?)>

<!ELEMENT Description (#PCDATA)>

<!ELEMENT Instructors ((Lecturer|Professor)\*)>

<!ELEMENT Lecturer (First\_Name,Middle\_Initial?,Last\_Name)>

<!ELEMENT Prerequisites (Prereq\*)>

<!ELEMENT Prereq (#PCDATA)>

]>

**E. Nuevos datos**

<Department Code="EE">

<Title>Systems Engineering</Title>

<Chair>

<Professor>

<First\_Name>Oswaldo</First\_Name>

<Last\_Name>Castillo</Last\_Name>

</Professor>

</Chair>

<Course Number="ACSO">

<Title>Arquitectura computacion y sistemas operativos</Title>

<Description>Arquitectura logica y sistemas logicos.

</Description>

<Instructors>

<Professor>

<First\_Name>Gerardo</First\_Name>

<Last\_Name>Ospina</Last\_Name>

</Professor>

</Instructors>

</Course>

<Course Number="TPRO">

<Title>Teoria de la programacion</Title>

<Instructors>

<Professor>

<First\_Name>Raul</First\_Name>

<Last\_Name>Chaparro</Last\_Name>

</Professor>

</Instructors>

</Course>

<Course Number="SIML">

<Title>Seminario de insercion y Mercado laboral</Title>

w<Instructors>

<Professor>

<First\_Name>Oswaldo</First\_Name>

<Last\_Name>Castillo</Last\_Name>

</Professor>

</Instructors>

</Course>

</Department>