

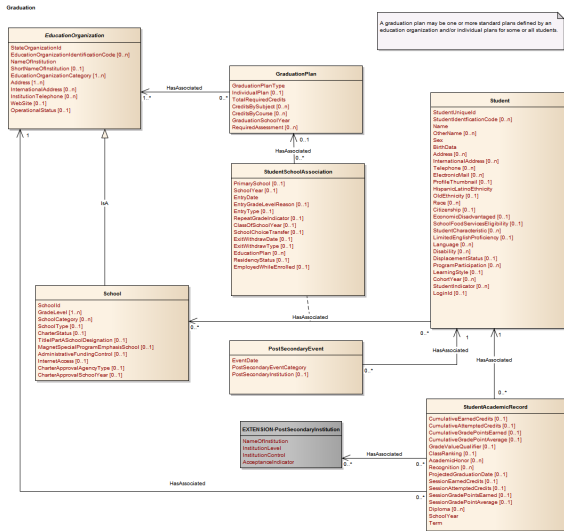
How To: Extend the Ed-Fi XML Schema (Part 4)

Customizing by Adding New XML Complex Types

New complex types may be added for domain entities or associations when the data model must be extended for new kinds of information.

Extend the Graduation Model

For this example, we will create an extension to the graduation model to reflect basic information about the postsecondary institution(s) that the student is attending. The extended elements are in gray in the model diagram below:



Building upon the example from Part 3, it is possible to create a new complex element to capture the postsecondary institution information. To accomplish this, the following steps are taken:

1. Define a new enumeration for EXTENSION-InstitutionControlType with the following enumerations:
 - Public
 - PrivateNonProfit
 - PrivateForProfit
2. Define a new enumeration for EXTENSION-InstitutionLevelType with the following enumerations:
 - Four Year
 - Two To Four Year
 - Less Than Two Year
3. Define a new complex type EXTENSION-PostsecondaryInstitution.
4. Within the EXTENSION-PostsecondaryInstitution type, add a sequence and define the following new elements:
 - a. NameOfInstitution of type NameOfInstitution
 - b. InstitutionLevel of type EXTENSION-InstitutionLevelType
 - c. InstitutionControl of type EXTENSION-InstitutionControlType
 - d. AcceptanceIndicator of type xs:boolean
5. Define a new complex type EXTENSION-PostsecondaryInstitutionReferenceType of type ReferenceType.
6. Within the EXTENSION-StudentAcademicRecordExtension, define a new element PostsecondaryInstitutionReference of type EXTENSION-PostsecondaryInstitutionReferenceType.

The following is the resulting schema with annotations removed for brevity:

```
<?xml version="1.0" encoding="UTF-8"?>
<!-- (c)2015 Ed-Fi Alliance, LLC. All Rights Reserved. -->
<xs:schema xmlns:xs="http://www.w3.org/2001/XMLSchema" xmlns="http://ed-fi.org/0200" targetNamespace="http://ed-fi.org/0200" elementFormDefault="qualified" attributeFormDefault="unqualified">
  <xs:include schemaLocation="Ed-Fi-Core.xsd" />
  <xs:annotation>
    <xs:documentation>==== Ed-Fi 2.0 Extensions ====</xs:documentation>
  </xs:annotation>
</xs:schema>
```

Developers' Guide Documentation Contents

Find out more about how to develop solutions based on the Ed-Fi Data Standard v2.0:

```

</xs:annotation>
<xs:annotation>
  <xs:documentation>==== Domain Entities =====</xs:
documentation>
  </xs:annotation>
  <xs:complexType name="EXTENSION-PostsecondaryInstitution">
    <xs:sequence>
      <xs:element name="NameOfInstitution" type="
NameOfInstitution"/>
      <xs:element name="InstitutionLevel" type="
EXTENSION-InstitutionLevelType"/>
      <xs:element name="InstitutionControl" type="
EXTENSION-InstitutionControlType"/>
      <xs:element name="AcceptanceIndicator" type="xs:
boolean"/>
    </xs:sequence>
  </xs:complexType>
  <xs:complexType name="EXTENSION-StudentAcademicRecordExtension">
    <xs:complexContent>
      <xs:extension base="EXTENSION-
StudentAcademicRecordRestriction">
        <xs:sequence>
          <xs:element name="ClassRanking"
type="EXTENSION-ClassRankingExtension"/>
          <xs:element name="
SubmissionCertification" type="EXTENSION-SubmissionCertificationType"/>
          <xs:element name="
PostsecondaryInstitutionReference" type="EXTENSION-
PostsecondaryInstitutionReferenceType"/>
        </xs:sequence>
      </xs:extension>
    </xs:complexContent>
  </xs:complexType>
  <xs:complexType name="EXTENSION-StudentAcademicRecordRestriction">
    <xs:complexContent>
      <xs:restriction base="StudentAcademicRecord">
        <xs:sequence>
          <xs:element name="
CumulativeEarnedCredits" type="Credits" minOccurs="0"/>
          <xs:element name="
CumulativeAttemptedCredits" type="Credits" minOccurs="0"/>
          <xs:element name="
CumulativeGradePointsEarned" type="GPA" minOccurs="0"/>
          <xs:element name="
CumulativeGradePointAverage" type="GPA" minOccurs="0"/>
          <xs:element name="
GradeValueQualifier" type="GradeValueQualifier" minOccurs="0"/>
          <xs:element name="AcademicHonor"
type="AcademicHonor" minOccurs="0" maxOccurs="unbounded"/>
          <xs:element name="Recognition"
type="Recognition" minOccurs="0" maxOccurs="unbounded"/>
          <xs:element name="
ProjectedGraduationDate" type="xs:date" minOccurs="0"/>
          <xs:element name="
SessionEarnedCredits" type="Credits" minOccurs="0"/>
          <xs:element name="
SessionAttemptedCredits" type="Credits" minOccurs="0"/>
          <xs:element name="
SessionGradePointsEarned" type="GPA" minOccurs="0"/>
          <xs:element name="
SessionGradePointAverage" type="GPA" minOccurs="0"/>
          <xs:element name="Diploma" type="
Diploma" minOccurs="0" maxOccurs="unbounded"/>
          <xs:element name="
StudentReference" type="StudentReferenceType"/>
          <xs:element name="
EducationOrganizationReference" type="EducationOrganizationReferenceType"/>
          <xs:element name="SchoolYear"
type="SchoolYearType"/>
          <xs:element name="Term" type="
TermDescriptorReferenceType"/>

```

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                <xs:element name="
ReportCardReference" type="ReportCardReferenceType" minOccurs="0"
maxOccurs="unbounded" />
                </xs:sequence>
            </xs:restriction>
        </xs:complexContent>
    </xs:complexType>
    <xs:annotation>
        <xs:documentation>===== Extended Reference =====</xs:
documentation>
    </xs:annotation>
    <xs:complexType name="EXTENSION-
PostsecondaryInstitutionReferenceType">
        <xs:complexContent>
            <xs:extension base="ReferenceType" />
        </xs:complexContent>
    </xs:complexType>
    <xs:annotation>
        <xs:documentation>===== Common =====</xs:documentation>
    </xs:annotation>
    <xs:complexType name="EXTENSION-ClassRankingExtension">
        <xs:complexContent>
            <xs:extension base="EXTENSION-
ClassRankingRestriction">
                <xs:sequence>
                    <xs:element name="
SpecialEducationGraduationStatus" type="EXTENSION-
SpecialEducationGraduationStatusType" />
                    </xs:sequence>
                </xs:extension>
            </xs:complexContent>
        </xs:complexType>
        <xs:complexType name="EXTENSION-ClassRankingRestriction">
            <xs:complexContent>
                <xs:restriction base="ClassRanking">
                    <xs:sequence>
                        <xs:element name="ClassRank" type="
xs:int" />
                    </xs:sequence>
                </xs:restriction>
            </xs:complexContent>
        </xs:complexType>
        <xs:annotation>
            <xs:documentation>===== Enumeration =====</xs:
documentation>
        </xs:annotation>
        <xs:simpleType name="EXTENSION-InstitutionControlType">
            <xs:restriction base="xs:token">
                <xs:enumeration value="Public" />
                <xs:enumeration value="Private Non-Profit" />
                <xs:enumeration value="PrivateForProfit" />
            </xs:restriction>
        </xs:simpleType>
        <xs:simpleType name="EXTENSION-InstitutionLevelType">
            <xs:restriction base="xs:token">
                <xs:enumeration value="Four Year" />
                <xs:enumeration value="Two To Four Year" />
                <xs:enumeration value="Less Than Two Year" />
            </xs:restriction>
        </xs:simpleType>
        <xs:simpleType name="EXTENSION-
SpecialEducationGraduationStatusType">
            <xs:restriction base="xs:token">
                <xs:enumeration value="Completion of IEP and
Reached Age 22" />
                <xs:enumeration value="Completion of IEP and
Access to Services, Employment, or Education" />
            </xs:restriction>
        </xs:simpleType>
    </xs:annotation>

```

```
                <xs:enumeration value="Completion of IEP and  
Demonstrated Self-Help Skills"/>  
            </xs:restriction>  
        </xs:simpleType>  
        <xs:simpleType name="EXTENSION-SubmissionCertificationType">  
            <xs:restriction base="xs:token">  
                <xs:enumeration value="Official"/>  
                <xs:enumeration value="Unofficial"/>  
            </xs:restriction>  
        </xs:simpleType>  
    </xs:schema>
```

[Continue](#)