XML Implementation Guide

Fall Enrollment—Less-Than-4-Year Degree-granting Institutions

Version 1.2.0 – March, 2012
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Introduction

IPEDS is the core postsecondary education data collection program for NCES. Data on enrollment, program completions, graduation rates, faculty, staff, finances, institutional prices, and student financial aid are collected from all primary providers of postsecondary education in the United States.

Data are collected for the IPEDS surveys via web forms or data uploads. In an effort to provide an additional uploading option that is standardized within the postsecondary community, NCES and RTI worked with Bruce Marton of the University of Texas at Austin to produce XML schemas for each of the IPEDS student-based collections. Bruce Marton is a past steering committee member of the Postsecondary Electronic Standards Council (PESC) and one of the key contributors and developers of the PESC College Transcript and High School Transcript XML schemas.

As a result, institutions now have two methods available for uploading data: via the flat file format previously employed or by uploading XML files that adhere to the XML schemas described in this document. An XML schema describes the format and contents of an XML data file. An XML schema defines what the data elements should be named within the XML data file, what kind of data are expected (string or integer, for example), whether certain data are required or optional, whether data elements may be repeated, and the like. In effect, the XML schema validates that the XML data are in the right structure and format.

Each IPEDS collection of student data has its own schema, and in some cases, the schemas are further divided depending on the type of institution providing the data. For example, there is an SFA.xsd for student financial aid data collection, usable by all types of institutions, but the fall enrollment data collection uses a particular schema (fallenrollment4year.xsd) for 4-year schools, while less-than-4-year schools use yet another schema (fallenrollmentlessthan4year.xsd). A different implementation guide exists for each collection’s schema. The schemas described in this document have been approved by PESC. The intent of this guide is to help users create a process to provide data in XML format for IPEDS data collections.

Organization and Format

Each schema in this document is described using diagrams and an accompanying table to explain each element or box within the diagram. If there is a “+” on the right hand-side of the element, the element is expandable; it branches into more elements (called children).

For example, the diagram above shows the element FallEnrollment. This is an expandable element that has already been expanded (it has a “–” rather than a “+” on the right edge of the box). The children elements of FallEnrollment are TransmissionData and EnrollmentByInstitution. Both children are expandable.

Each element’s name is important because the name serves as the start and end tags in XML. For example, in basic view, the above diagram would look like this in XML:
The start tag is `<FallEnrollment>` and the end tag is `</FallEnrollment>`, which has a slash preceding its name. Between each start and end tag are either actual data or more start and end tags. Every start tag must have a corresponding end tag.

Some elements have a “type” associated with them. A type is either a simple type, meaning that it just describes the data format (e.g., integer, decimal, or string), or a complex type, meaning that it is a set of other elements and/or data fields. In either case, a “type” is a reusable data structure that can be utilized in a variety of situations.

The TransmissionData element seen in the above diagram has a type of “core:TransmissionData”. Because it is a type, any element of the same type seen throughout any of the schemas will have the same underlying structure. The word “core:” that precedes the type name indicates that this type is identified in the core library of PESC-approved standards. This means that the PESC “core” library contains the rules regarding this structure of data. All sectors (IPEDS, College Transcript, SFA, etc.) may refer to any of the types in the core library; in fact, they are encouraged to do so whenever possible to facilitate standardization of data. If the type name had been preceded by “IPEDS:” that would indicate that the rules regarding this structure are being maintained by the IPEDS sector library rather than the core library and that it pertains mainly to IPEDS use.

The connector between FallEnrollment and its two sub-elements is called a “sequence” connector. It indicates that the elements must be provided in the order shown. Below is a sequence connector:

Note in the diagram on the previous page that each line between the sequence connector and the sub-elements of FallEnrollment—TransmissionData and EnrollmentByInstitution—is a solid line (rather than a dashed line), which indicates that these are required elements. Therefore, your XML file must contain both a TransmissionData element and an EnrollmentByInstitution element.

Upon expanding the TransmissionData element, the following diagram is shown:
Note that the NoteMessage element is optional, as the line connecting to the sequence connector is dashed. However, there is also a notation of “0...∞”, which indicates that there is no limit to the number of times this element may appear. The elements of the schema are presented in this guide in a top-down fashion, starting with the top-level elements and working toward describing each sub-element and sub-sub-element in turn.

The table under each diagram has links within the description of each element to the next level element, if applicable.

Each table has four columns:

1. **Tag name**: This is the name of the data element grouping or field that will appear in the XML file.
2. **Usage**: This column indicates whether the data element or field is required or optional in the instance document. If a required field is not included in the instance document, the transcript will normally be rejected by the receiving institution or agency’s computer program (XML Parser).
3. **Description**: This is a brief description of the data included with a particular XML tag name. If the element is of a certain type, there will be instruction “See xxxxType.”
4. **Format**: This column shows the minimum and maximum number of occurrences of the data element. It also shows the minimum and maximum length allowable for a field, if that field does not have enumerated values and is not a special type of field, such a date field.

- `minOcc` 1 indicates a required field; it must have at least one occurrence in the instance document.
- `minOcc` 0 indicates an optional field.
- `maxOcc` followed by a number or symbol specifies the maximum number of times that that element may occur in an instance document at a particular position. For example, “maxOcc 5” indicates that the field may occur no more than 5 times in a given position of the instance document. “maxOcc ∞” indicates that a field may occur an unlimited number of times in the instance document. However, the use of an excessive number of occurrences puts a burden on the receiving agency or institution, so they should be limited to the fewest possible.
- `minLength` indicates the minimum number of characters that a field must contain.
- `maxLength` indicates the maximum number of characters that a field may contain.
- **Enumeration** is used to list the allowable values that may be used in the instance document. The values must be used exactly as shown in this column. When the values are enumerated in this column, “minLength” and “maxLength” will not be indicated and are not appropriate.

After the diagram and subsequent table describing the diagram, an example of the XML needed to produce the diagram is shown, if logistically possible. Alternately, there may be a link to text within appendix A to see an example of the XML code.

**NOTE**: In diagrams of “types,” the first element shown in the diagram is the type name as seen in the following TransmissionDataType example:
The diagram above shows TransmissionDataType as the first named element. However, when the type is used within the XML document, the name of the element that uses the type will be listed in the start and end tags. For example, one element that uses the TransmissionDataType is TransmissionData. The XML code would look like this:

```xml
<TransmissionData>
  <DocumentID>07242008_199999</DocumentID>
  <CreatedDateTime>2001-12-17 09:30:47:00</CreatedDateTime>
  <TransmissionType>Original</TransmissionType>
  <DocumentType>IPEDS</DocumentType>
  <NoteMessage/>*
</TransmissionData>
```

* This is an allowable notation of a start/end tag for which there are no data. This is typically referred to as an “empty element.”

After the XML files are created based upon the schemas described herein, the XML file should be validated. There are many tools to do the validation, but all will require the following schema files to be available:

1) The specific schema file your XML file is based upon, such as FallEnrollment4Year_v1.2.0.xsd
2) The IPEDS sector library’s core schema: EducationStatistics_v2.1.0.xsd
3) The PESC core schema: CoreMain_v1.12.0.xsd

The .xsd files are available for download from the PESC website under "Standards and Workgroups" — then choose “PESC Approved Standards.”
This annual component of IPEDS collects data on the number of students enrolled in the fall at postsecondary institutions. Reported are all students enrolled for credit (courses or programs that can be applied towards the requirements for a postsecondary degree, diploma, certificate, or other formal award), regardless of whether or not they are seeking a degree or certificate.

Institutions annually report:

- the number of full- and part-time students, by gender, race/ethnicity, and level (undergraduate, graduate);
- the total number of undergraduate students by first-time, transfers-in, continuing, and non-degree/certificate-seeking status;
- the number of undergraduate students by distance education enrollment;
- first-time student cohort data to compute retention rates; and
- the student-to-faculty ratio.

In even-numbered years, data are collected for state of residence of first-time students and for the number of those students who graduated high school or received high school equivalent certificates in the past 12 months. In odd-numbered years, data are collected for enrollment by age category, student level, and gender.

A full-size diagram of FallEnrollmentLessThan4Year can be found in FallEnrollmentLessThan4Year_diagram_v1.2.0.pdf. To save space, each type is expanded just once. EnrollmentFullTime is expanded to show all the children elements, but EnrollmentPartTime is not, since EnrollmentPartTime uses the same type as EnrollmentFullTime. Most elements eventually expand to the RaceGenderDistributionType and subsequent GenderCountType. RaceGenderDistributionType and GenderCountType are only expanded once; thus, when you note that an element is of type “RaceGenderDistributionType”, refer to the example where it is expanded (FirstTimeStudent) on the diagram.

To print out the FallEnrollmentLessThan4Year_diagram_v1.2.0.pdf, it is suggested that you modify the Page Handling section on the print tab, as shown in the following screen shot. Note that “Tile Large Pages” is selected, and the Tile Scale is set to 40 percent.

Fall Enrollment Less Than 4 Year version 1.2.0, and corresponding Implementation Guide version 1.2.0 represent the minimum coding standard that participants must use. All prior versions of the schema and implementation guide are not to be used.
**FallEnrollment**

<table>
<thead>
<tr>
<th>Tag name</th>
<th>Usage</th>
<th>Description</th>
<th>Format</th>
</tr>
</thead>
<tbody>
<tr>
<td>FallEnrollment</td>
<td>Required</td>
<td>Root element of XML document for FallEnrollmentLessThan4Year.xsd.</td>
<td>minOcc 1 maxOcc 1</td>
</tr>
<tr>
<td>TransmissionData</td>
<td>Required</td>
<td>Routing and header information. Uses TransmissionDataType.</td>
<td>minOcc 1 maxOcc 1</td>
</tr>
<tr>
<td>EnrollmentByInstitution</td>
<td>Required</td>
<td>Fall Enrollment data, broken down by institution (IPEDS ID). Allows for multiple institution data to be submitted in one report. See EnrollmentByInstitution for further information.</td>
<td>minOcc 1 maxOcc ∞ repeatable as needed</td>
</tr>
<tr>
<td>NoteMessage</td>
<td>Optional</td>
<td>Additional information about the transmission.</td>
<td>Maxlength=80 minOcc 0</td>
</tr>
</tbody>
</table>

**Code illustration:**

Please note that as the FallEnrollment element is the "root" element of the XML document, extra header information is included in this code illustration as it would need to exist in the final XML file.

```xml
<FELT4:FallEnrollment xsi:schemaLocation="urn:org:pesc:message:FallEnrollmentLessThan4Year:v1.2.0 FallEnrollmentLessThan4Year_v1.2.0.xsd" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xmlns:FELT4="urn:org:pesc:message:FallEnrollmentLessThan4Year:v1.2.0">
  <TransmissionData>
    •
    •
  </TransmissionData>
  <EnrollmentByInstitution>
    <Institution>
      <IPEDSUnitID>999999</IPEDSUnitID>
    </Institution>
    •
  </EnrollmentByInstitution>
</FELT4:FallEnrollment>
```
**TransmissionDataType**

<table>
<thead>
<tr>
<th>Tag name</th>
<th>Usage</th>
<th>Description</th>
<th>Format</th>
</tr>
</thead>
<tbody>
<tr>
<td>DocumentID</td>
<td>Required</td>
<td>File transmission date and time stamp with additional unique qualifying characters such as UNITID of the sending institution.</td>
<td>minOcc 1 maxOcc 1</td>
</tr>
<tr>
<td>CreatedDateTime</td>
<td>Required</td>
<td>Date and time stamp with the document was created.</td>
<td>Xs:datetime ccyy-mm-dd hh:mm:ss minOcc:ss maxOcc:1</td>
</tr>
<tr>
<td>TransmissionType</td>
<td>Required</td>
<td>Nature of the transmission.</td>
<td>Enumeration: Original Replace</td>
</tr>
<tr>
<td>DocumentType</td>
<td>Required</td>
<td>Nature of the document.</td>
<td>Enumeration: IPEDS</td>
</tr>
<tr>
<td>NoteMessage</td>
<td>Optional</td>
<td>Additional information about the transmission.</td>
<td>Maxlength=80 minOcc 0</td>
</tr>
</tbody>
</table>

Code example:

```xml
<TransmissionData>
  <DocumentID>07232008100001</DocumentID>
  <CreatedDateTime>2009-07-23 10:45:00</CreatedDateTime>
  <TransmissionType>Original</TransmissionType>
  <DocumentType>IPEDS</DocumentType>
  <NoteMessage>This is the 2nd attempt of submitting this file</NoteMessage>
</TransmissionData>
```
<table>
<thead>
<tr>
<th>Tag name</th>
<th>Usage</th>
<th>Description</th>
<th>Format</th>
</tr>
</thead>
<tbody>
<tr>
<td>Institution</td>
<td>Required</td>
<td>The identifying ID (UNITID) and other optional information about the institution. Uses OrganizationType.</td>
<td>minOcc 1</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>maxOcc 1</td>
</tr>
<tr>
<td>EnrollmentFullTime</td>
<td>Required</td>
<td>For students who are classified as full-time. The element expands further into degree/certificate-seeking and non-degree/certificate-seeking students. Uses EnrollmentUndergraduateType.</td>
<td>minOcc 1</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>maxOcc 1</td>
</tr>
<tr>
<td>EnrollmentPartTime</td>
<td>Required</td>
<td>The element expands further into degree/certificate-seeking and non-degree/certificate-seeking students. Uses EnrollmentUndergraduateType.</td>
<td>minOcc 1</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>maxOcc 1</td>
</tr>
<tr>
<td>TotalEnrollment</td>
<td>Do not include on import file</td>
<td>Race/gender distribution for all students enrolled. Uses RaceGenderDistributionType. Will be generated on export file.</td>
<td>minOcc 0</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>maxOcc 1</td>
</tr>
<tr>
<td>EnrollmentByAgeFullTime</td>
<td>Optional – see comment</td>
<td>The breakdown, by age group, of full-time students. Uses AgeGenderDistributionType.</td>
<td>minOcc 1</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>maxOcc 1</td>
</tr>
<tr>
<td>Comment</td>
<td>EnrollmentByAgeFullTime is required only in odd-numbered years.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>EnrollmentByAgePartTime</td>
<td>Optional – see comment</td>
<td>The breakdown, by age group, of part-time students. Uses AgeGenderDistributionType.</td>
<td>minOcc 0</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>maxOcc 1</td>
</tr>
<tr>
<td>Comment</td>
<td>EnrollmentByAgePartTime is required only in odd-numbered years</td>
<td></td>
<td></td>
</tr>
<tr>
<td>EnrollmentByAgeTotal</td>
<td>Do not include on import file</td>
<td>The breakdown, by age, of all enrolled students. Uses AgeGenderDistributionType. Will be generated on export file.</td>
<td>minOcc 0</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>maxOcc 1</td>
</tr>
<tr>
<td>EnrollmentByResidencyFirstTimeStudents</td>
<td>Optional – see comment</td>
<td>The breakdown, by state of residency, of first-time students. Uses EnrollmentByResidencyType.</td>
<td>minOcc 0</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>maxOcc 1</td>
</tr>
<tr>
<td>Comment</td>
<td>EnrollmentByResidencyFirstTimeStudents is required only in even-numbered years</td>
<td></td>
<td></td>
</tr>
<tr>
<td>TotalEnteringClass</td>
<td>Required</td>
<td>Total number of entering students at the undergraduate level—first-time, transfers-in, and non-degree/certificate seeking students entering the institution for the first time in the Fall. Uses EnteringClassType.</td>
<td>Integer</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>minOcc 1</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>maxOcc 1</td>
</tr>
<tr>
<td>RetentionFullTime</td>
<td>Required</td>
<td>The numbers needed to calculate the percentage of full-time, first-time students enrolled last year who have continued enrollment this year. Uses RetentionType.</td>
<td>minOcc 1</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>maxOcc 1</td>
</tr>
<tr>
<td>RetentionPartTime</td>
<td>Required</td>
<td>The numbers needed to calculate the percentage of part-time, first-time students enrolled last year who have continued enrollment this year. Uses RetentionType.</td>
<td>minOcc 1</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>maxOcc 1</td>
</tr>
<tr>
<td>StudentFacultyRatio</td>
<td>Required – see comment</td>
<td>The student-to-faculty ratio for undergraduate programs.</td>
<td>minOcc 1</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>maxOcc 1</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>nn to 1</td>
</tr>
<tr>
<td>Comment</td>
<td>See IPEDS Fall Enrollment survey component materials for detailed instructions on how to determine the student-to-faculty ratio at: <a href="https://surveys.nces.ed.gov/ipeds/">https://surveys.nces.ed.gov/ipeds/</a></td>
<td></td>
<td></td>
</tr>
<tr>
<td>UndergraduateDistanceEducation</td>
<td>Optional</td>
<td>The breakdown of undergraduate students enrolled in any distance education, by degree/certificate-seeking and non-degree/certificate-seeking status, and by category describing the amount of distance education a student is enrolled in, and for those enrolled exclusively in distance education, by location. Uses</td>
<td>minOcc 0</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>maxOcc 1</td>
</tr>
<tr>
<td>NoteMessage</td>
<td>Optional</td>
<td>UndergraduateDistanceEducationType.</td>
<td></td>
</tr>
<tr>
<td>-------------------</td>
<td>------------------------</td>
<td>--------------------------------------</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Additional information about fall enrollment data.</td>
<td>maxlen 80 minOcc 0</td>
<td></td>
</tr>
</tbody>
</table>

Code example:

Please see the XML code example shown in appendix A.
OrganizationType

Used by elements:

- Institution

Tag name | Usage | Description | Format
--- | --- | --- | ---
IPEDSUnitID | Required | The unique identifier assigned to the institution by IPEDS. | minOcc 1  maxOcc 1
OrganizationName | Optional | The name of the institution. This is only for file documentation use. The name of the institution will not be uploaded to IPEDS. Uses core: OrganizationNameType. | minOcc 0  maxOcc ∞ repeatable as needed
NoteMessage | Optional | Additional information about the transmission. | maxlen 80  minOcc 0  maxOcc 1

Code example:

```xml
<Institution>
    <IPEDSUnitID>199999</IPEDSUnitID>
    <OrganizationName>XML Institution</OrganizationName>
</Institution>
```
**EnrollmentUndergraduateType**

*Used by elements:*

- EnrollmentFullTime
- EnrollmentPartTime

This type describes undergraduate enrollment, broken down by degree/certificate-seeking and non-degree/certificate-seeking students. The degree/certificate-seeking students are further broken down using the `EnrollmentDegreeCertificateSeekingType` type. Non-degree/certificate-seeking students and total undergraduates are summarized by race and gender.

<table>
<thead>
<tr>
<th>Tag name</th>
<th>Usage</th>
<th>Description</th>
<th>Format</th>
</tr>
</thead>
<tbody>
<tr>
<td>DegreeCertificateSeeking</td>
<td>Required</td>
<td>Expansion of degree/certificate-seeking undergraduates by the type of student (first-time student, transfer-in student, other). Uses <code>EnrollmentDegreeCertificateSeekingType</code>.</td>
<td>minOcc: 1, maxOcc: 1</td>
</tr>
<tr>
<td>NonDegreeCertificateSeeking</td>
<td>Required</td>
<td>Race/gender distribution for non-degree/certificate-seeking students. Uses <code>RaceGenderDistributionType</code>.</td>
<td>minOcc: 1, maxOcc: 1</td>
</tr>
<tr>
<td>TotalUndergraduate</td>
<td>Do not include on import file</td>
<td>Race/gender distribution for all enrolled undergraduate students. Uses <code>RaceGenderDistributionType</code>. Will be generated on export file.</td>
<td>minOcc: 0, maxOcc: 1</td>
</tr>
</tbody>
</table>

**Comment:**

Code example located at line 19 in appendix A.
**EnrollmentDegreeCertificateSeekingType**

**Used by elements:**

- EnrollmentFullTime/DegreeCertificateSeeking
- EnrollmentPartTime/DegreeCertificateSeeking

This type is used to categorize degree/certificate-seeking students into groups based on their characteristics of enrollment: whether they are first-time students, transfer-in students, or other.

<table>
<thead>
<tr>
<th>Tag name</th>
<th>Usage</th>
<th>Description</th>
<th>Format</th>
</tr>
</thead>
<tbody>
<tr>
<td>FirstTimeStudent</td>
<td>Required</td>
<td>Race/gender distribution for first-time students. Uses RaceGenderDistributionType.</td>
<td>minOcc 1 maxOcc 1</td>
</tr>
<tr>
<td>TransferStudent</td>
<td>Required</td>
<td>Race/gender distribution for transfer-in students. Uses RaceGenderDistributionType.</td>
<td>minOcc 1 maxOcc 1</td>
</tr>
<tr>
<td>StudentOtherDegreeCertificateSeeking</td>
<td>Required</td>
<td>Race/gender distribution for students who are neither first-time nor transfer-in students. Uses RaceGenderDistributionType.</td>
<td>minOcc 1 maxOcc 1</td>
</tr>
<tr>
<td>TotalDegreeCertificateSeeking</td>
<td>Do not include on import file</td>
<td>Race/gender distribution for all degree/certificate-seeking students. Uses RaceGenderDistributionType. Will be generated on export file.</td>
<td>minOcc 0 maxOcc 1</td>
</tr>
</tbody>
</table>

**Comment:**

Code example located at line 20 in appendix A.
RaceGenderDistributionType

Used by elements:

- FirstTimeStudent
- TransferStudent
- StudentOtherDegreeCertificateSeeking
- TotalDegreeCertificateSeeking
- NonDegreeCertificateSeeking
- TotalUndergraduate
- TotalEnrollment

RaceGenderDistributionType is a structured description of a population broken down by race and gender categories giving aggregate counts for each race/gender combination.

<table>
<thead>
<tr>
<th>Tag name</th>
<th>Usage</th>
<th>Description</th>
<th>Format</th>
</tr>
</thead>
<tbody>
<tr>
<td>HispanicAnyRace</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>AmericanIndianOrAlaskaNative</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Asian</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>BlackOrAfricanAmerican</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>NativeHawaiianOrPacificIslander</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>White</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TwoOrMoreRaces</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>NonresidentAlien</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>RaceEthnicityUnknown</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TotalAllRaceEthnicity</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tag name</td>
<td>Usage</td>
<td>Description</td>
<td>Format</td>
</tr>
<tr>
<td>-----------------------------------------</td>
<td>-------------</td>
<td>-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
<td>--------------</td>
</tr>
<tr>
<td>HispanicAnyRace</td>
<td>Optional</td>
<td>A gender breakdown of persons of Cuban, Mexican, Puerto Rican, South or Central American, or other Spanish culture or origin, regardless of race. Uses GenderCountType.</td>
<td>minOcc 0</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>maxOcc 1</td>
</tr>
<tr>
<td>AmericanIndianOrAlaskaNative</td>
<td>Optional</td>
<td>A gender breakdown of persons having origins in any of the original peoples of North and South America (including Central America) who maintain cultural identification through tribal affiliation or community attachment. Uses GenderCountType.</td>
<td>minOcc 0</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>maxOcc 1</td>
</tr>
<tr>
<td>Asian</td>
<td>Optional</td>
<td>A gender breakdown of persons having origins in any of the original peoples of the Far East, Southeast Asia, or the Indian Subcontinent, including, for example, Cambodia, China, India, Japan, Korea, Malaysia, Pakistan, the Philippine Islands, Thailand, and Vietnam. Uses GenderCountType.</td>
<td>minOcc 0</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>maxOcc 1</td>
</tr>
<tr>
<td>BlackOrAfricanAmerican</td>
<td>Optional</td>
<td>A gender breakdown of persons having origins in any of the black racial groups of Africa. Uses GenderCountType.</td>
<td>minOcc 0</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>maxOcc 1</td>
</tr>
<tr>
<td>NativeHawaiianOrPacificIslander</td>
<td>Optional</td>
<td>A gender breakdown of persons having origins in any of the original peoples of Hawaii, Guam, Samoa, or other Pacific Islands. Uses GenderCountType.</td>
<td>minOcc 0</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>maxOcc 1</td>
</tr>
<tr>
<td>White</td>
<td>Optional</td>
<td>A gender breakdown of persons having origins in any of the original peoples of Europe, the Middle East, or North Africa. Uses GenderCountType.</td>
<td>minOcc 0</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>maxOcc 1</td>
</tr>
<tr>
<td>TwoOrMoreRaces</td>
<td>Optional</td>
<td>A gender breakdown of persons who claim two or more races, not previously counted in another race or ethnicity count. Uses GenderCountType.</td>
<td>minOcc 0</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>maxOcc 1</td>
</tr>
<tr>
<td>NonresidentAlien</td>
<td>Optional</td>
<td>A gender breakdown of all nonresident aliens regardless of race. Uses GenderCountType.</td>
<td>minOcc 0</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>maxOcc 1</td>
</tr>
<tr>
<td>RaceEthnicityUnknown</td>
<td>Optional</td>
<td>A gender breakdown of all persons whose race and ethnicity are not known. Uses GenderCountType.</td>
<td>minOcc 0</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>maxOcc 1</td>
</tr>
<tr>
<td>TotalAllRaceEthnicity</td>
<td></td>
<td>Do not include on import file</td>
<td>minOcc 0</td>
</tr>
<tr>
<td></td>
<td></td>
<td>A gender breakdown of all students regardless of race/ethnicity. Uses GenderCountType. Will be generated on export file.</td>
<td>maxOcc 1</td>
</tr>
</tbody>
</table>

Comment:

Code example:

```xml
<RaceGenderDistribution>
  <HispanicAnyRace>
    <CountMale>2</CountMale>
    <CountFemale>5</CountFemale>
  </HispanicAnyRace>
  <AmericanIndianOrAlaskaNative>
    <CountMale>2</CountMale>
    <CountFemale>5</CountFemale>
  </AmericanIndianOrAlaskaNative>
</RaceGenderDistribution>
```
GenderCountType

**Used by elements:**

- HispanicAnyRace
- AmericanIndianOrAlaskaNative
- Asian
- BlackOrAfricanAmerican
- NativeHawaiianOrPacificIslander
- White
- TwoOrMoreRaces
- NonresidentAlien
- RaceEthnicityUnknown
- TotalAllRaceEthnicity

GenderCountType is a count of males and females within a specific category such as race or age.

<table>
<thead>
<tr>
<th>Tag name</th>
<th>Usage</th>
<th>Description</th>
<th>Format</th>
</tr>
</thead>
<tbody>
<tr>
<td>CountMale</td>
<td>Required</td>
<td>The number of males within a category. Uses TotalCountType.</td>
<td>Integer minOcc 1 maxOcc 1</td>
</tr>
<tr>
<td>CountFemale</td>
<td>Required</td>
<td>The number of females within a category. Uses TotalCountType.</td>
<td>Integer minOcc 1 maxOcc 1</td>
</tr>
<tr>
<td>TotalCountAllGenders</td>
<td>Optional</td>
<td>The total number of males and females within a category. TotalCountType.</td>
<td>Integer minOcc 0 maxOcc 1</td>
</tr>
</tbody>
</table>

**Code example:**

(HispanicAnyRace is an element of RaceGenderDistributionType that uses type GenderCountType.)

```
<HispanicAnyRace>
  <CountMale>1</CountMale>
  <CountFemale>2</CountFemale>
</HispanicAnyRace>
```
TotalCountType

Used by elements:

- CountMale
- CountFemale
- TotalCountAllGenders
- TotalEnteringNonDegreeCertificateSeekingUndergraduates
- SomeDistanceEducationEnrollment
- NoDistanceEducation
- TotalDistanceEducationEnrollment
- StudentLocationSameState
- StudentLocationDifferentState
- StudentLocationInUSUnknownState
- StudentLocationOutsideUS
- StudentLocationUnknown
- TotalExclusiveDistanceEducationEnrollment

TotalCountType is an integer with values from 0 to 999999999 and is used to indicate a count of individuals within a specific category throughout the IPEDS XML schemas.
**AgeGenderDistributionType**

**Used by elements:**
- EnrollmentByAgeFullTime
- EnrollmentByAgePartTime
- EnrollmentByAgeTotal

AgeGenderDistributionType is a structured description of a population broken down by age and gender categories, giving aggregate counts for each.

<table>
<thead>
<tr>
<th>Tag name</th>
<th>Usage</th>
<th>Description</th>
<th>Format</th>
</tr>
</thead>
<tbody>
<tr>
<td>AgeUnder18</td>
<td>Optional</td>
<td>A gender breakdown within each age category as listed by the tag names. Uses GenderCountType.</td>
<td>minOcc 0 maxOcc 1</td>
</tr>
<tr>
<td>Age18To19</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Age20To21</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Age22To24</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Age25To29</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Age30To34</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Age35To39</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Age40To49</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Age50To64</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Age65AndOver</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>AgeUnknown</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TotalAllAge</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
FallEnrollmentLessThan4Year_v1.2.0.xsd

<table>
<thead>
<tr>
<th>Age</th>
<th>Description</th>
<th>Min Occ</th>
<th>Max Occ</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age40To49</td>
<td>Do not include on import file</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Age50To64</td>
<td>Will be generated on export file</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Age65AndOver</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>AgeUnknown</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Comment:

Code example:

(UndergraduateEnrollment is an element of EnrollmentByAge4YearType that uses type AgeGenderDistributionType.)

```xml
<UndergraduateEnrollment>
  <Age18To19>
    <CountMale>20</CountMale>
    <CountFemale>22</CountFemale>
  </Age18To19>
  <Age20To21>
    <CountMale>40</CountMale>
    <CountFemale>43</CountFemale>
  </Age20To21>
  <Age22To24>
    <CountMale>15</CountMale>
    <CountFemale>29</CountFemale>
  </Age22To24>
</UndergraduateEnrollment>
```
EnrollmentByResidencyType

**Used by elements: (in even-numbered years only)**

- FallEnrollment/EnrollmentByInstitution/EnrollmentByResidencyFirstTimeStudents

  This type shows a count of total first-time degree/certificate-seeking undergraduate students enrolled and those who recently earned a high school diploma, by state of residency.

<table>
<thead>
<tr>
<th>Tag name</th>
<th>Usage</th>
<th>Description</th>
<th>Format</th>
</tr>
</thead>
<tbody>
<tr>
<td>ResidencyCode</td>
<td>Required</td>
<td>The state code in which the student resided when he or she was first admitted. Uses ResidencyCodeType, which is a list of approved state codes. See appendix B.</td>
<td>Integer, minOcc 1, maxOcc 1</td>
</tr>
<tr>
<td>TotalCount</td>
<td>Required</td>
<td>The number of first-time degree/certificate-seeking undergraduate students within a specified state of residence.</td>
<td>Integer, minOcc 1, maxOcc 1</td>
</tr>
<tr>
<td>CountRecentDiploma</td>
<td>Optional</td>
<td>Number of first-time degree/certificate-seeking undergraduate students who graduated from high school or received their GED within the last 12 months.</td>
<td>Integer, minOcc 0, maxOcc 1</td>
</tr>
</tbody>
</table>

**Comment:**

Code example:

```xml
<EnrollmentByResidencyFirstTimeStudents>
  <ResidencyCode>NC</ResidencyCode>
  <TotalCount>159</TotalCount>
  <CountRecentDiploma>142</CountRecentDiploma>
</EnrollmentByResidencyFirstTimeStudents>
```
**EnteringClassType**

*Used by elements:*

- **TotalEnteringClass**

  This type shows a count of undergraduates entering the institution for the first time in the fall (entering class) and the percentage of the entering class made up by full-time first time degree seeking students (GRS cohort). The subset of non-degree/certificate seeking students that entered the institution for the first time in the Fall is required in order to calculate the total entering class.

<table>
<thead>
<tr>
<th>Tag name</th>
<th>Usage</th>
<th>Description</th>
<th>Format</th>
</tr>
</thead>
<tbody>
<tr>
<td>TotalEnteringNonDegreeCertificateSeekingUndergraduates</td>
<td>Required</td>
<td>The total number of non-degree/certificate-seeking undergraduate students entering the institution for the first time in the fall. Uses TotalCountType.</td>
<td>minOcc 1 maxOcc 1</td>
</tr>
<tr>
<td>TotalEnteringUndergraduates</td>
<td>Do not include on import file</td>
<td>The total number of undergraduates entering the institution for the first time in the Fall. Will be generated in the export file.</td>
<td>Integer minOcc 1 maxOcc 1</td>
</tr>
<tr>
<td>PercentageEnteringUndergraduateByGRSCohort</td>
<td>Do not include on import file</td>
<td>Percentage of entering class represented by the Graduation Rates Survey (GRS) cohort (full-time, first-time degree/certificate seeking undergraduates). Uses CountPercentageType. Will be generated in the export file.</td>
<td>Integer minOcc 0 maxOcc 1</td>
</tr>
</tbody>
</table>

**Comment:**

Code example:

```xml
<TotalEnteringClass>
  <TotalEnteringNonDegreeCertificateSeekingUndergraduates>100</TotalEnteringNonDegreeCertificateSeekingUndergraduates>
</TotalEnteringClass>
```
**CountPercentageType**

**Used by elements:**
- TotalEnteringClass

<table>
<thead>
<tr>
<th>Tag name</th>
<th>Usage</th>
<th>Description</th>
<th>Format</th>
</tr>
</thead>
<tbody>
<tr>
<td>Count</td>
<td>Required</td>
<td>The count of items (for example, the count of students, or the count of loans) within a specific category.</td>
<td>Integer minOcc 1 maxOcc 1</td>
</tr>
<tr>
<td>Percentage</td>
<td>Optional</td>
<td>The percentage that the count of items represents.</td>
<td>decimal minOcc 0 maxOcc 1</td>
</tr>
</tbody>
</table>
RetentionType

Used by elements:
- RetentionFullTime
- RetentionPartTime

This type presents the counts that are used to calculate the retention rate—the percentage of students returning from the previous academic year.

<table>
<thead>
<tr>
<th>Tag name</th>
<th>Usage</th>
<th>Description</th>
<th>Format</th>
</tr>
</thead>
<tbody>
<tr>
<td>PriorYearCohort</td>
<td>Required</td>
<td>The number of students originally reported in the prior year cohort of first-time students.</td>
<td>Integer minOcc 1 maxOcc 1</td>
</tr>
<tr>
<td>PriorYearExclusions</td>
<td>Required</td>
<td>The number of students who are now excluded from the prior year cohort based on allowed exclusions such as death, military duty, etc.</td>
<td>Integer minOcc 1 maxOcc 1</td>
</tr>
<tr>
<td>PriorYearAdjusted</td>
<td>Do not include on import file</td>
<td>The new prior year cohort based on the difference between the prior year cohort and the prior year exclusions. Will be generated on export file</td>
<td>Integer minOcc 0 maxOcc 1</td>
</tr>
<tr>
<td>CurrentYearCohortRetained</td>
<td>Required</td>
<td>The number of students who were in the prior year cohort who are currently in this year's cohort.</td>
<td>Integer minOcc 1 maxOcc 1</td>
</tr>
<tr>
<td>RetentionRatePercentage</td>
<td>Do not include on import file</td>
<td>The retention rate of first-time students based upon the prior year adjusted number of students and the number of returning students for this year. Will be generated on export file</td>
<td>Integer minOcc 0 maxOcc 1</td>
</tr>
</tbody>
</table>

Comment:

Code example located at line 447 in appendix A.
StudentFacultyRatioType

Used by elements:

- StudentFacultyRatio

StudentFacultyRatioType is a string which indicates a ratio of students to faculty in a format such as:

25 to 1
## UndergraduateDistanceEducationType

**Used by elements:**
- UndergraduateDistanceEducation

<table>
<thead>
<tr>
<th>Tag name</th>
<th>Usage</th>
<th>Description</th>
<th>Format</th>
</tr>
</thead>
<tbody>
<tr>
<td>DegreeCertificateSeeking</td>
<td>Required</td>
<td>Distance education, broken down by category indicating the amount of distance education for which an undergraduate degree/certificate-seeking student is enrolled. Uses EnrollmentByDistanceEducationStatusType.</td>
<td>minOcc 1 maxOcc 1</td>
</tr>
<tr>
<td>NonDegreeCertificateSeeking</td>
<td>Required</td>
<td>Distance education, broken down by category indicating the amount of distance education for which an undergraduate non-degree/certificate-seeking student is enrolled. Uses EnrollmentByDistanceEducationStatusType.</td>
<td>minOcc 1 maxOcc 1</td>
</tr>
</tbody>
</table>

**Comment:**

Code example located at line 457 in appendix A.
EnrollmentByDistanceEducationStatusType

Used by elements:
- UndergraduateDistanceEducation/DegreeCertificateSeeking
- UndergraduateDistanceEducation/NonDegreeCertificateSeeking

<table>
<thead>
<tr>
<th>Tag name</th>
<th>Usage</th>
<th>Description</th>
<th>Format</th>
</tr>
</thead>
<tbody>
<tr>
<td>ExclusiveDistanceEducationEnrollment</td>
<td>Optional</td>
<td>The breakdown of students enrolled exclusively in distance education, by location. Uses DistanceEducationByLocationType.</td>
<td>minOcc 0</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>maxOcc 1</td>
</tr>
<tr>
<td>SomeDistanceEducationEnrollment</td>
<td>Optional</td>
<td>The number of students enrolled in some, but not all, distance education courses. Uses TotalCountType.</td>
<td>Integer</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>minOcc 0</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>maxOcc 1</td>
</tr>
<tr>
<td>NoDistanceEducation</td>
<td>Optional</td>
<td>The number of students who are not enrolled in any distance education courses. Uses TotalCountType.</td>
<td>Integer</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>minOcc 0</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>maxOcc 1</td>
</tr>
<tr>
<td>TotalDistanceEducationEnrollment</td>
<td>Do not include on import file</td>
<td>The number of students enrolled in any distance education courses. Uses TotalCountType. Will be generated on export file.</td>
<td>Integer</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>minOcc 0</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>maxOcc 1</td>
</tr>
</tbody>
</table>

Comment:

Code example located at line 458 in appendix A.
**DistanceEducationByLocationType**

Used by elements:
- ExclusiveDistanceEducationEnrollment

<table>
<thead>
<tr>
<th>Tag name</th>
<th>Usage</th>
<th>Description</th>
<th>Format</th>
</tr>
</thead>
<tbody>
<tr>
<td>StudentLocationSameState</td>
<td>Optional</td>
<td>The number of students enrolled exclusively in distance education residing in the same state as the institution. Uses TotalCountType.</td>
<td>Integer minOcc 0 maxOcc 1</td>
</tr>
<tr>
<td>StudentLocationDifferentState</td>
<td>Optional</td>
<td>The number of students enrolled exclusively in distance education residing in the U.S., but not in the same state as the institution. Uses TotalCountType.</td>
<td>Integer minOcc 0 maxOcc 1</td>
</tr>
<tr>
<td>StudentLocationInUSUnknownState</td>
<td>Optional</td>
<td>The number of students enrolled exclusively in distance education residing in the U.S., but the state is unknown. Uses TotalCountType.</td>
<td>Integer minOcc 0 maxOcc 1</td>
</tr>
<tr>
<td>StudentLocationOutsideUS</td>
<td>Optional</td>
<td>The number of students enrolled exclusively in distance education residing outside of the U.S. Uses TotalCountType.</td>
<td>Integer minOcc 0 maxOcc 1</td>
</tr>
<tr>
<td>StudentLocationUnknown</td>
<td>Optional</td>
<td>The number of students enrolled exclusively in distance education whose residence is unknown. Uses TotalCountType.</td>
<td>Integer minOcc 0 maxOcc 1</td>
</tr>
<tr>
<td>TotalExclusiveDistanceEducationEnrollment</td>
<td>Do not include on import file</td>
<td>The total number of students enrolled exclusively in distance education courses. Uses TotalCountType. Will be generated on export file.</td>
<td>Integer minOcc 0 maxOcc 1</td>
</tr>
</tbody>
</table>

Comment:

Code example located at line 459 in appendix A.
Appendix A—FallEnrollmentLessThan4Year_v1.2.0 XML Import File Example

```xml
<FELT4:FallEnrollment
    xsi:schemaLocation="urn:org:pesc:message:FallEnrollmentLessThan4Year:v1.2.0
    FallEnrollmentLessThan4Year_v1.2.0.xsd" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
    xmlns:FELT4="urn:org:pesc:message:FallEnrollmentLessThan4Year:v1.2.0">
    <TransmissionData>
        <DocumentID>07242008_199999</DocumentID>
        <CreatedDateTime>2001-12-17T09:30:47.0Z</CreatedDateTime>
        <TransmissionType>Original</TransmissionType>
        <DocumentType>IPEDS</DocumentType>
        <NoteMessage>This is a note message</NoteMessage>
    </TransmissionData>
    <EnrollmentByInstitution>
        <Institution>
            <IPEDSUnitID>199999</IPEDSUnitID>
            <OrganizationName>XML Institution</OrganizationName>
        </Institution>
        <EnrollmentFullTime>
            <DegreeCertificateSeeking>
                <FirstTimeStudent>
                    <HispanicAnyRace>
                        <CountMale>10</CountMale>
                        <CountFemale>8</CountFemale>
                    </HispanicAnyRace>
                    <AmericanIndianOrAlaskaNative>
                        <CountMale>9</CountMale>
                        <CountFemale>8</CountFemale>
                    </AmericanIndianOrAlaskaNative>
                    <Asian>
                        <CountMale>5</CountMale>
                        <CountFemale>6</CountFemale>
                    </Asian>
                    <BlackOrAfricanAmerican>
                        <CountMale>400</CountMale>
                        <CountFemale>550</CountFemale>
                    </BlackOrAfricanAmerican>
                    <NativeHawaiianOrPacificIslander>
                        <CountMale>10</CountMale>
                        <CountFemale>8</CountFemale>
                    </NativeHawaiianOrPacificIslander>
                    <White>
                        <CountMale>500</CountMale>
                        <CountFemale>400</CountFemale>
                    </White>
                    <TwoOrMoreRaces>
                        <CountMale>10</CountMale>
                        <CountFemale>8</CountFemale>
                    </TwoOrMoreRaces>
                    <NonresidentAlien>
                        <CountMale>5</CountMale>
                        <CountFemale>3</CountFemale>
                    </NonresidentAlien>
                </FirstTimeStudent>
            </DegreeCertificateSeeking>
        </EnrollmentFullTime>
    </EnrollmentByInstitution>
</FELT4:FallEnrollment>
```
<RaceEthnicityUnknown>
  <CountMale>2</CountMale>
  <CountFemale>1</CountFemale>
</RaceEthnicityUnknown>
</FirstTimeStudent>
<TransferStudent>
  <HispanicAnyRace>
    <CountMale>5</CountMale>
    <CountFemale>3</CountFemale>
  </HispanicAnyRace>
  <AmericanIndianOrAlaskaNative>
    <CountMale>5</CountMale>
    <CountFemale>3</CountFemale>
  </AmericanIndianOrAlaskaNative>
  <Asian>
    <CountMale>8</CountMale>
    <CountFemale>6</CountFemale>
  </Asian>
</TransferStudent>
<StudentOtherDegreeCertificateSeeking>
  <HispanicAnyRace>
    <CountMale>150</CountMale>
    <CountFemale>69</CountFemale>
  </HispanicAnyRace>
</StudentOtherDegreeCertificateSeeking>
<BlackOrAfricanAmerican>
  <CountMale>305</CountMale>
  <CountFemale>290</CountFemale>
</BlackOrAfricanAmerican>

<NativeHawaiianOrPacificIslander>
  <CountMale>5</CountMale>
  <CountFemale>10</CountFemale>
</NativeHawaiianOrPacificIslander>

<White>
  <CountMale>6</CountMale>
  <CountFemale>7</CountFemale>
</White>

<RaceEthnicityUnknown>
  <CountMale>4</CountMale>
  <CountFemale>5</CountFemale>
</RaceEthnicityUnknown>

<StudentOtherDegreeCertificateSeeking>
  <HispanicAnyRace>
    <CountMale>5</CountMale>
    <CountFemale>2</CountFemale>
  </HispanicAnyRace>
  <BlackOrAfricanAmerican>
    <CountMale>3</CountMale>
    <CountFemale>4</CountFemale>
  </BlackOrAfricanAmerican>
  <White>
    <CountMale>15</CountMale>
    <CountFemale>7</CountFemale>
  </White>
  <TwoOrMoreRaces>
    <CountMale>1</CountMale>
    <CountFemale>2</CountFemale>
  </TwoOrMoreRaces>
  <NonresidentAlien>
    <CountMale>6</CountMale>
    <CountFemale>5</CountFemale>
  </NonresidentAlien>
</StudentOtherDegreeCertificateSeeking>

<NonDegreeCertificateSeeking>
  <HispanicAnyRace>
    <CountMale>18</CountMale>
    <CountFemale>17</CountFemale>
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