

## 1. Person Record

Fields:

int id: A unique identifier for the person.

string firstName: The first name of the person.

string lastName: The last name or surname of the person.

int age: The age of the person.

string country: The country of origin or residence of the person.

College college: A nested College record that holds information about the college the person is associated with.

## 2. College Record

Fields:

Course[] courses: An array of Course records, representing the courses offered by the college. Each Course contains detailed information about individual courses.

## 3. Course Record

Fields:

string id: A unique identifier for the course.

string name: The name of the course.

decimal credits: The number of credits the course is worth.

Professor[] professor: An array of Professor records, representing the professors teaching the course. Each professor can belong to multiple departments.

## 4. Professor Record

Fields:

int id: A unique identifier for the professor.

string firstName: The first name of the professor.

Department[] department: An array of Department records, representing the departments the professor is affiliated with.

## 5. Department Record

Fields:

string departmentName: The name of the department, such as "Computer Science" or "Mathematics."

## 6. Student Record

Fields:

int id: A unique identifier for the student.

string firstName: The first name of the student.

string lastName: The last name or surname of the student.

string age: The age of the student, stored as a string.

courses: An array of anonymous records, each containing:

int id: A unique identifier for the course taken by the student.

float credits: The number of credits earned by the student in that course.

Professor[] professor: An array of Professor records, representing the professors associated with the course.

string gender: The gender of the student.

## 7. A Record

Fields:

Person[] person: An array of Person records, representing a collection of persons, where each person has associated information such as name, age, country, and college details.

## 8. B Record

Fields:

Student[] student: An array of Student records, representing a collection of students, where each student has associated information such as name, age, courses taken, and gender.

## 9. Transformation Function

Signature:

`transform(A[] A) returns B[]`

Purpose:

This function is designed to take an array of A records as input and transform it into an array of B records. The specific transformation logic would involve mapping or converting Person records within the A record into Student records within the B record, considering the structure and fields of each. For example, information from the Person record could be mapped to the corresponding Student record fields, and college courses might be transformed into the student's course data.