A University Registration Data Model and Database

Design the university database which is one possible data model that describes the below set of requirements.

The University Database Requirements:

Here is a statement of the data requirements for a product to support the registration of and provide help to students of a fictitious e-learning university.

An e-learning university needs to keep details of its students and staff, the courses that it offers and the performance of the students who study its courses. The university is administered in four geographical regions (England, Scotland, Wales and Northern Ireland).

Information about each student should be initially recorded at registration. This includes the student's identification number issued at the time, name, year of registration and the region in which the student is located. A student is not required to enroll in any courses at registration; enrollment in a course can happen at a later time.

Information recorded for each member of the tutorial and counseling staff must include the staff number, name and region in which he or she is located. Each staff member may act as a counselor to one or more students, and may act as a tutor to one or more students on one or more courses. It may be the case that, at any particular point in time, a member of staff may not be allocated any students to tutor or counsel.

Each student has one counselor, allocated at registration, who supports the student throughout his or her university career. A student is allocated a separate tutor for each course in which he or she is enrolled. A staff member may only counsel or tutor a student who is resident in the same region as that staff member.

Each course that is available for study must have a course code, a title and a value in terms of credit points. A course is either a 15-point course or a 30-point course. A course may have a quota for the number of students enrolled in it at any one presentation. A course need not have any students enrolled in it (such as a course that has just been written and offered for study).

Students are constrained in the number of courses they can be enrolled in at any one time. They may not take courses simultaneously if their combined points total exceeds 180 points.

For assessment purposes, a 15-point course may have up to three assignments per presentation and a 30-point course may have up to five assignments per presentation. The grade for an assignment on any course is recorded as a mark out of 100.

Instructions

- Design your University Registration Data Model according to the Crow's Food model by using Draw.io. The model has several parts, beginning with an ERD and followed by a written description of entity types, constraints, and assumptions.

- Create a database called University.

- Create database tables according to your data model. Create the necessary indexes in the tables. Build relationships between tables using the keys. Use data types for table fields. Create the appropriate constraints in the tables.

- Insert at least 5 records into each table.

- Change a student's grade by creating a SQL script that updates a student's grade in the assignment table.

- Update the credit for a course.

- Swap the responsible staff of two students with each other in the student table.

- Remove a staff member who is not assigned to any student from the staff table.

- Add a student to the student table and enroll the student you added to any course.

While developing the project, you should take into account project definitions, constraints and instructions.