Lab

ENTITY RELATIONSHIP DIAGRAM (ERD)

Q1. Consider a database system for an educational institute. Draw ERD Diagram on the given scenarios. The data requirements are summarized as follows: Business Case: Educational Institute In an educational institute, there are several departments and students belong to one of them. Each department has a unique department number, a name, a location, phone number and is headed by a professor. Professors have a unique employee Id, name including first and last name and phone number. We like to keep track of the following details regarding students: name, unique roll number, gender, phone number, date of birth, age and one or more email addresses. Students have a local address consisting of the hostel name and the room number. They also have home address consisting of house number, street, city and PIN. It is assumed that all students reside in the hostels. A course taught in a semester of the year is called a section. There can be several sections of the same course in a semester; these are identified by the section number. Each section is taught by a different professor and has its own timings and a room to meet. Students enroll for several sections in a semester. Each course has a name, number of credits and the department that offers it. A course may have other courses as pre- requisites i.e, courses to be completed before it can be enrolled in. Professors also undertake research projects. These are sponsored by funding agencies and have a specific start date, end date and amount of money given. More than one professor can be involved in a project. Also a professor may be simultaneously working on several projects. A project has a unique projectId.

Draw ERD to show entity, attributes and relations between these entities

Solution:

Department — attributes: Name, Location, Phone, HOD, DeptNo (key)

Course — attributes: CourseID (key), Credits, Name

Professor — attributes: Name, ProfID (key), PhoneNumber

Project — attributes: Sponsor, Amount, StartDate, EndDate, ProjectId (key)

Section (weak entity) — attributes: SectionID (partial key), Timing, ClassRoom

Student —N— belongs To —1— Department

M enrolls

offers —N— Course ... —1— Department

1 works For N

N hasSection

M prerequisite Of N

teaches —1— Professor

N Section

Project M works On N