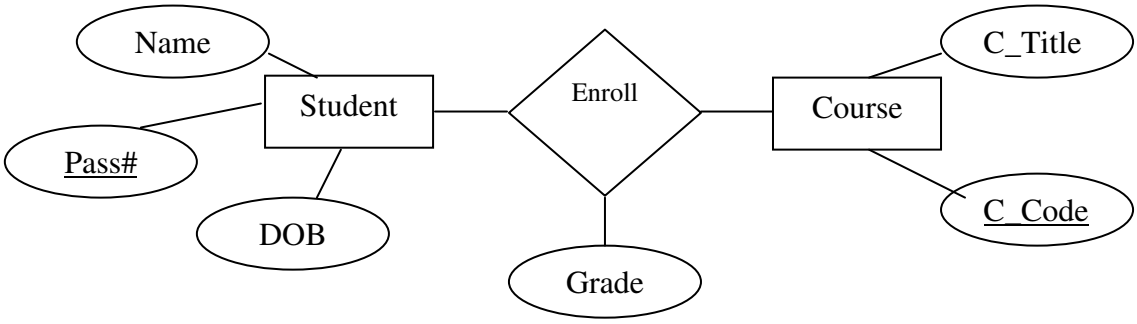
QUIZ # 1
CPS 480 Database Systems

Course: BESE 15 Time Allowed: 15 Mints
Name: _____ Max Marks: 10

(3)

1. The computer science department in a university offers a number of courses to the students and the students may enroll in any number of courses of their choice. Each course has a unique course code and a unique course title. Students are identified by their passport numbers and we also keep the name and date of birth for each student. In the database, we need to keep information about students, courses and the grades of the students in the courses they are enrolled in. Design an ER Diagram capturing this information. Do not forget to indicate the mapping cardinalities.

Solution



(2)

2. In the above question, if each student is allowed to take only one course of their choice:

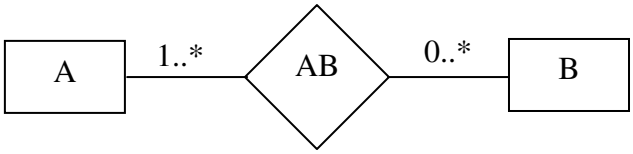
a. What would be the mapping cardinalities?
b. What choices are available to place the attribute 'grade'?

Solution

a. The relationship would be M to 1 from *Student* to *Course.*
b. The attribute 'grade' can be palced on the *many* side, i.e. with *Student*.

(2)

3. Consider the following ER-Diagram:



a. What is the cardinality of the relationship AB?
b. What is the participation of entities A and B?

Solution

a. The relationship is M:N.
b. The participation of A is total while B is partial.

(3)

4. Assume that the database of students at MCS contains NUST registration number, student name and student address. The university assigns a unique registration number to each student. It is also known that no two students having the same address can have the same names.

a. List all the Super Keys for 'Students'
b. List all Candidate Keys for 'Students'

Solution

a. Super Keys:
    a. {Regn. No.}
    b. {Name, Address}
    c. {Regn. No., Name}
    d. {Regn. No., Address}
    e. {Regn. No., Name, Address}

b. Candidate Keys:
    a. {Regn. No.}
    b. {Name, Address}