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CSC 423 – Project 1: Conceptual Design

Develop a conceptual data model reflecting the following requirements: (11/02/21)

1. Identify the main entity types.
2. Identify the main relationship types between the entity types identified in "a".
3. Determine the multiplicity constraints for each relationship identified in "b".
4. Identify attributes and associate them with entity or relationship types.
5. Determine candidate and primary key attributes for each (strong) entity type.
6. Generate the E-R diagram for the conceptual level (no FKs as attributes).

Entities / (attributes)

- **Department** (**deptNo**, deptName, chairName, faculty_count)
 - deptName is a candidate key
- **Student** (**studentID**, studentName, student_initials)
- **Major** (**majorCode**, majorName)
 - majorName is a candidate key
- **Event** (**eventNo**, eventName, start_date, end_date)

Primary keys are in bold and underlined

Entity 1	Relationship	Entity 2	Participation	Cardinality	Multiplicity	Type of Rel.
Department	Hosts	Event	0	*	*..*	Many-to-many
Event	IsHostedBy	Department	1	*		
Student	Attends	Event	1	*	*..*	Many-to-many
Event	Comprises	Student	1	*		
Student	Declares	Major	1	*	*..*	Many-to-many
Major	DeclaredBy	Student	1	*		
Major	References	Department	1	1	1..*	One-to-many
Department	Offers	Major	1	*		

Assumptions:

- majorName is a candidate key because usually we don't have majors with the same name
- deptName is a candidate key because usually we don't have departments with the same name
- Department **Hosts** Event has participation 0 because the department may or may not host an event (*"Each department has the possibility..."*)
- Student **Declares** Major has participation 1 because it is not optional for a student to declare a major
- Major DeclaredBy Student has a 1 to * relationship because a major is declared by at least one student but can be declared by multiple students as well
- Major **References** Department is 1 to 1 because a major must belong to one department
- Department Offers Major is 1 to * because a department must offer at least one major but could offer many as well

(E-R Diagram)

