Problem 1: The International Olympic Committee (IOC) has hired you to design and implement a database system for the upcoming Summer Olympics for smooth operation during the event. Construct an ER diagram to fulfill the following data requirements for the Summer Olympics:

Many countries will be participating in the Olympics. Each country will have a unique country code, unique flag, different uniform colors, name of the National Olympic Committee, chef de mission, and a medal tally from the previous Olympics.
A country may have one official slogan for the Olympics. The slogan has only the following attributes: text and language. Several slogans may have the same text or be in the same language.
Several athletes belong to a country and each athlete must represent a single country. An athlete has a unique social media handle, name, global ranking, and a performance record which consists of personal best, season best, and Olympic record (if any). Note that the athlete's potential medal chances will be derived from the performance record, so it will not be stored in the database, but must be shown in ER using appropriate notation.
Each country participates in several events. Multiple countries compete in an event. Each event has a unique code, venue, and schedule. The result (e.g., time, score, or distance) of a country's athlete(s) for an event is also recorded.
Athletes might be sponsored by various brands. A brand can sponsor several athletes. The brand's unique registration number, name, industry, and contact information is stored.

Write down any assumptions (if any) you made in your answer.

Problem 2: Design an EER diagram for an “Event Management” company. The company organizes different types of events such as weddings, birthdays etc. They want to keep track of all their events, customers, venues, employees, service providers such as caterers, decorators etc. They have hired you to help them design the database for that purpose.

You can design your EER as you wish, but it must satisfy the following constraints:

a. there should be at least one disjoint-total specialization/generalization.
b. There should be at least five entities [excluding subclasses]
c. There must be a recursive relationship.
d. There must be at least one M:N relationship

Show the important attributes of all the entities and any relationships required. The EER diagram should be logically accurate and realistic, representing the database of the given scenario.