Question 1: You are tasked with designing an EER diagram for a Space Exploration System for an agency called "Galaxy Ventures," based on the following data requirements:

- There are explorers. Each explorer has a unique ID, name, nationality, date of birth. The explorer may belong to only one of the following categories: Astronaut, Scientist or Mission Manager. There are no other categories of explorers. Scientists have multiple research publications. Mission manager has a “number of missions” attribute.

- Several Explorers participate in different space missions. Missions have a unique mission ID, name, launch date, duration, destination, and mission status. Each explorer’s salary for each mission is recorded.

- A mission may be a follow up of a previous mission.

- Each mission is carried out using one or more spaceships. Spaceships have a unique ID, name, type (such as, shuttle, rover, etc), capacity, and maximum range.

- Several pieces of equipment are used in missions. Each equipment has an equipment number composed of mission date and serial no. Equipment also has name, type and purpose attributes. None of the attributes are guaranteed to be unique, however for the same mission, the equipment number will not be the same.

- During missions, discoveries may be made. Each discovery is recorded with a unique discovery ID, description, location, and date. Some equipment may have been used for the discoveries. All discoveries do not need equipment.

Construct an EER diagram for the above scenario. **Do Not assume any key or multivalued or composite attributes unless stated in the question.** You may write down any assumptions regarding the relationship constraints or specialization/generalization constraints

Question 1: You are tasked with designing an EER diagram for a Space Tourism System for an agency called "Stellar Voyages," based on the following data requirements:

- There are clients. Each client has a unique ID, name, nationality, and date of birth. The client may belong to only one of the following categories: Adventure Tourist, VIP Tourist, or Regular Tourist. There are no other categories of clients. VIP Tourists have a "membership level" attribute.

- A VIP tourist must be referred by exactly one other VIP tourist.

- Several clients participate in different space tours. Tours have a unique tour ID, name, launch date, duration, price and multiple destinations.

- Each tour is conducted using one or more space vehicles. Space vehicles have a unique vehicle ID, name, type (such as, shuttle, rover, etc.), capacity, and fuel status.

- Several amenities are provided in tours. Each amenity has an amenity number composed of tour date and serial number. Amenities also have name and purpose attributes. None of the attributes are guaranteed to be unique; however, for the same tour, the amenity number will not be the same. Clients also may use several amenities, their payment for each used amenity is recorded.

- During tours, special events may be organized. Each event is recorded with a unique event ID, description, location, and date.

Construct an EER diagram for the above scenario. **Do not assume any key or multivalued or composite attributes unless stated in the question.** You may write down any assumptions regarding the relationship constraints or specialization/generalization constraints.

Question 1: You are tasked with designing an EER diagram for a Film Production Studio System for a new startup studio called "Starlight Studios." The system needs to manage the following information:

- The studio maintains records of all movies produced. Each movie has a unique identifier, title, release date, genre, budget and a brief summary.

- Several actors act in movies. Actor's name, unique email address, manager contact number and date of birth is recorded. An actor can act in many movies. The role of an actor in a movie is recorded. An actor may have multiple roles in the same movie.

- Actors may be related to other actors.

- Each movie is produced by production team members. The team members name, unique phone number and address is stored. Each team member can belong to one or more of the only following types: producers, directors, or screenwriters. Directors have a "number of movies directed" attribute and screenwriters have a "years of experience" attribute. A Team member can produce multiple movies.

- Awards are associated with movies, and each award has a name composed of award year, award title and awarding body name; awards also have a category. Note that all attributes of awards may have duplicate values, however for each movie there will not be awards with the same name [same name is possible for different movies]

- Some Actors may have won some of the awards for their performances in the movie. An actor can win multiple awards.

Construct an EER diagram for the above scenario. **Do Not assume any key or multivalued or composite attributes unless stated in the question.** You may write down any assumptions regarding the relationship constraints or specialization/generalization constraints

Question 1: You are tasked with designing an EER diagram for a Music Festival Management System for an organization called "Harmony Events," based on the following data requirements:

- The organization maintains records of all festivals organized. Each festival has a unique identifier, name, start date, end date, ticket price and location.

- Several artists perform in different festivals. Each artist has a unique ID, name, band name, and date of birth. All artists in the database have performed in at least one festival organized by the organization.

- An artist may have collaborated with other artists. The date of collaboration is recorded.

- Event staff members work at different festivals. The staff members have a name, unique id, phone number, and address. Staff members can belong to one or more of the following types: managers, technicians, or volunteers. Technicians can have multiple expertise and volunteers have a "number of festivals volunteered" attribute.

- Each festival includes one or more stages. Each stage has a number composed of stage name and festival date. Stages also have a type (such as, main stage, acoustic stage, etc.) and location. Note that all attributes of stages may have duplicate values; however, for each festival, there will not be stages with the same number (the same number is possible for different festivals). Artists perform on different stages.

- During festivals, workshops may be conducted. Each workshop is recorded with a unique workshop ID, description, location, participation fees and time.

Construct an EER diagram for the above scenario. **Do not assume any key or multivalued or composite attributes unless stated in the question.** You may write down any assumptions regarding the relationship constraints or specialization/generalization constraints.