

- 1 You are to design a Hospital database. So, before creating the database, your task is to design the ER diagram based on the following data requirements: 10
- The hospital has departments. Each department has a name, department ID, location. Location consists of the floor number and the wing number (which will contain the values North, South, East or West).
 - Doctors work for the department. Doctors have license number, name, title, multiple specializations. Some doctors supervise other doctors.
 - A patient will have a name, unique ID, may have more than one phone number, age, height, weight and symptoms.
 - Patients take appointments from doctors. Appointment date and time is recorded.
 - A patient may have an attendant. An attendant will have his/her name and relationship with the patient as a record in the database. The hospital allows 1 attendant with each patient

Write down any assumptions you may have made.

- 2 Draw an ER diagram for the following scenario 10

A tech company has hired you to design and implement a **database system for a co-working space reservation app**. Construct an **ER diagram** for the app according to the data requirements below:

The app serves two primary user types: **hosts** and **clients**.

- The app stores information about **hosts** who lease their working spaces. For each host, store their **unique NID**, **name**, **email (unique)**, and **multiple contact numbers**.

- **Clients** are individuals who reserve and use the working spaces. For each client, store their **passport number (unique)**, **name**, **phone number**, and a **profile photo**.
- Clients may use **multiple devices** to log in to the app, and a device may be shared by multiple clients (e.g., on shared tablets). For each device, store its **unique device ID**, **device model**, and **OS version**.
- The app manages several **buildings** that contain workspaces. For each building, store the **building name**, **number of available workspaces**, and a **composite unique location** (composed of **building number**, **street**, **city**, and **zip code**).
- **Workspaces** are located inside buildings. Each workspace has a **workspace number** and an **hourly rental rate**. Workspace numbers can repeat across buildings but must be **unique within a building** (e.g., each building can have workspace 1, 2, 3, etc.).
- Every workspace must be **leased out by exactly one host**, and every host must lease **at least one workspace**. For each lease, record the **lease date**, **start time**, and **end time**.
- Clients **reserve workspaces** to work. A workspace may be reserved by many clients over time, and a client can reserve many workspaces. For each reservation, record the **reservation date**, **duration**, and the **total cost**. The total cost can be derived from the duration and hourly rate, so it **should not be stored**, but must appear in the diagram using an appropriate derived attribute symbol.

Note: Use proper **ER diagram notations**: rectangles for entities, ovals for attributes, diamonds for relationships, and appropriate notation for **derived**, **multivalued**, and **composite** attributes.