

SEMESTER A181
GROUP ASSIGNMENT 1 – DATABASE DESIGN

Read the following case study:



A non-profit organization is planning a fund and a prop-raising campaign to support its Prime Minister (PM) in the next election. Recognizing the need for sophisticated technology, they have decided to use a database system for maintaining campaign, voter, and donor records.

Every campaign (campaign id, campaign name) is advertised in several newspaper (paper id, paper name, date published), which is a newspaper will publish only to exactly one campaign program for this election. A campaign manager (also a voter) is managed to carry out this advertising task.

You need to keep track of each voter's name, phone number, and profession. Some of the voters have donated money and/or objects. You need to keep track of which voters have given the donation. Details of the donation are donation id, types of donation, its value, and when each donation was made. Also, for each voters, you need to keep track of the value of his/her total donations. The organization needs to have recorded the location of each voting area and to maintain a list of all voters who vote at that area, as well as the date that the voters last voted and to what number of the election.

There are several jobs for which voters can volunteer. Some of those jobs are needed at some area, but not at others. You need to keep track of the job title for each job, and also which areas have a use for it. For each job possible, some "volunteer" must be "found" from among the voters. No job is allowed to have more than one volunteer, and no voter is allowed to do more than two jobs. Jobs are always classified as high profile, which involves directly with the PM and addressed as executive role. On the other hand, the low profile jobs are recorded as according to subordinate role. Sometimes, the job calls for both roles to be performed as simultaneously.

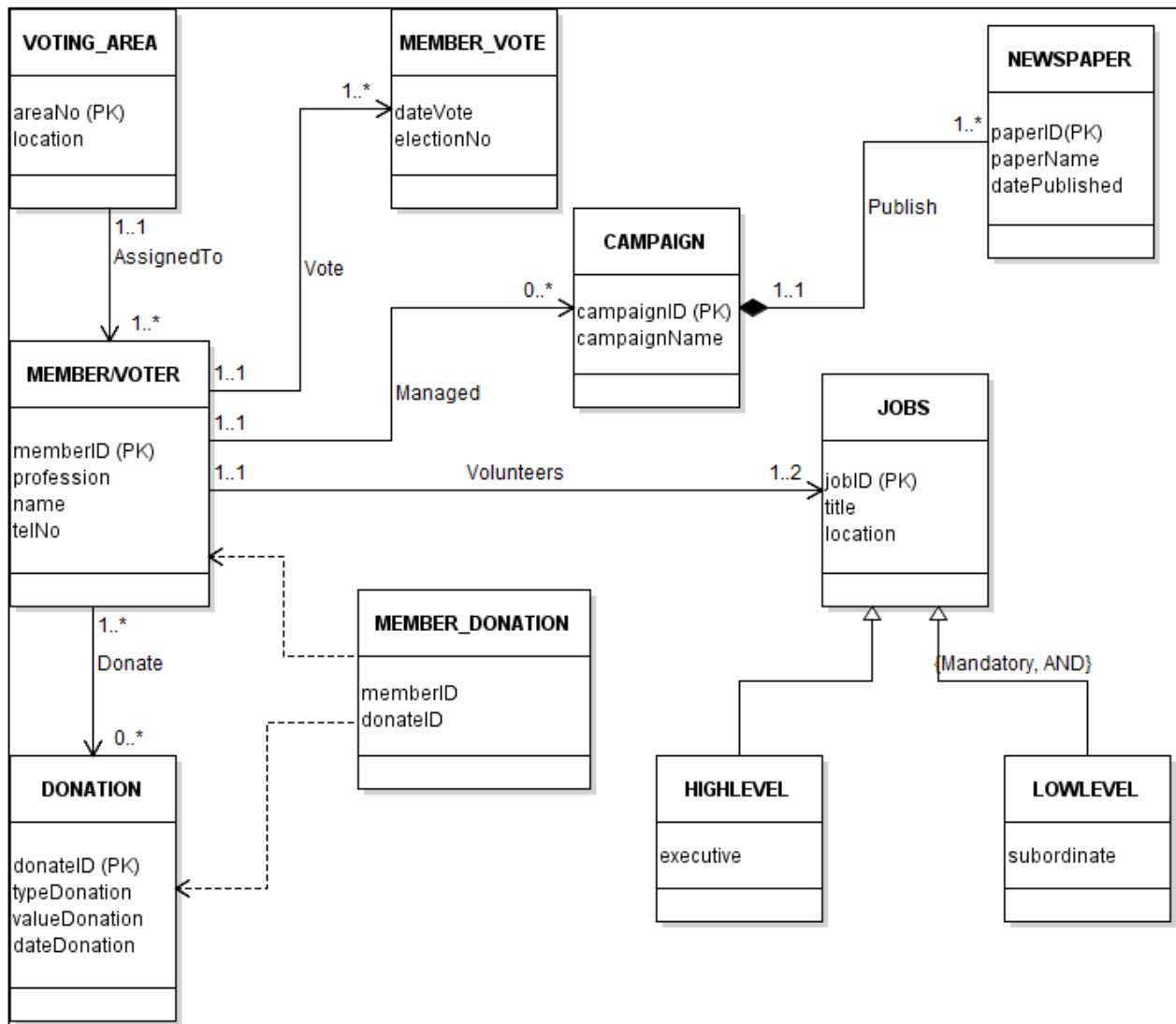
Question:

Draw an **Enhanced Entity Relationship (EER) Diagram** for conceptual, logical and relational data model based on the requirements scenario given. You need to clearly state the entity name, attribute (at least three), multiplicity, primary key, specialization or generalization and participation constraints. Steps and documentation for the diagram must strictly follow **Unified Modelling Language (UML)** notation. State any assumptions (if necessary) to support your design.

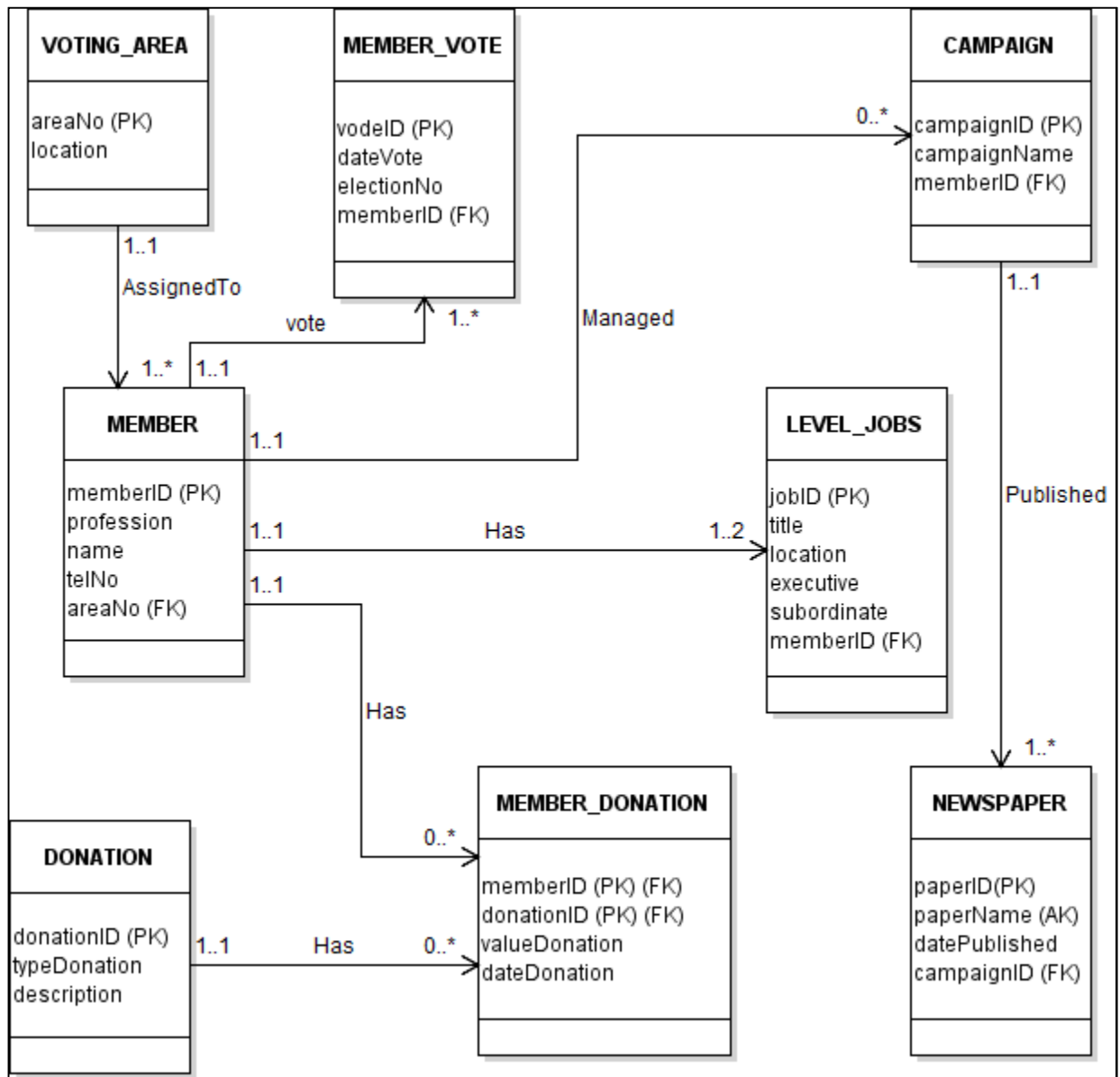
Please submit before 11 PM, 20 October 2018.

Solution

Conceptual Data Model



Logical Data Model



Relational Data Model / Relational Schemas

1. VOTING_AREA (areaNo (PK), location)
2. MEMBER_VOTE (vodeID (PK), dateVote, electionNo, memberID (FK))
3. MEMBER (memberID (PK), profession, name, telNo, areaNo (FK))
4. DONATION (donationID (PK), typeDonation, description)
5. MEMBER_DONATION (memberID (PK) (FK), donationID (PK) (FK), valueDonation, dateDonation)
6. CAMPAIGN (campaignID (PK), campaignName, memberID (FK))
7. NEWSPAPER (paperID(PK), paperName (AK), datePublished, campaignID (FK))
8. LEVEL_JOBS (jobID (PK), title, location, executive, subordinate, memberID (FK))