Required Items for Project

- Detail of the scenario
- Developing ERD
  - Defining at least 7 Entity
  - Defining attributes
  - Defining all necessary relationships (Identify with matrix diagram)
  - If possible superype-subtype, arc and hierarchical structures, non-transferable relationship.
- Preparing "table instance chart" to map ERD to DB structure
- Writing SQL DDL statements for implementing ERD (create table, constraints, defining keys: pks and fks)
- Making Physical Database using APEX
- Entering data to the Database
- Writing SQL DML Statements to reach information
  - One statement including subquery
  - One statement including join
  - One statement including group by
  - One statement including date function
  - One statement including character function
  - One statement including update
  - One statement including alter table

- ✓ The project will be determined out of 100 points, which will be 15% of the total grade.
- ✓ Students should do their projects as a group.
- ✓ The groups themselves will determine the project. Similar to the 2 sample projects below, the detailed project scenario should be written in the shared group excel file.
- ✓ The project must be approved by lecturer. Unapproved projects will not be evaluated.
- ✓ Students will show and present their projects with their own computers. In addition, some questions about the project will be asked during the presentation.
- ✓ Same projects will not be accepted. In addition, the final exam score of the students who bring the same project will be reduced.
- ✓ Project must be uploaded to teams before the due date.
- ✓ Due date for project proposal is **20.03.2023**
- ✓ Due date for project upload is **28.05.2023**
- ✓ Project presentation dates will be announced later.

Example Scenarios

Scenario 1. In an organization with many sales outlets, it is required to develop a Market Database that includes sales outlets, employees, and sold product. In database, current as

well as historical data will be kept. For example, it is required to keep employee's old tasks and wages along with his dates, besides his current assignment and salary.

The data and relations to be included in the database are listed below:

- The number, name, address, date of opening, closing date (if the store is not closed, the value of this property will be "null") of each store.
- The registration number, name, surname and level of education of each employee (this information does not change over time).
- In which store each employee works between which dates (at a time employee works in only one shop, but over time the employee's store may change one or more times).
- While an employee works in a store, which tasks he or she conducted and start and end date of them (each employee only performs one task at a certain time).
- How much each person is paid between which dates (the payment of the employee is independent of the store they are working with and the job they are conducting).
- The code, name, and unit of each sold product (this information does not change over time) and the information of the sales person.
- In which store and between which dates, each product is sold (While many products can be sold at a certain store, a product can be sold in many stores. This information can change over time. For example, after a product has been sold for a certain period at a store, it is possible that it is not sold for a certain period of time, then it is restarted to be sold, and it can be repeated.)

Based on the above description (for those not covered in the description, if necessary, make appropriate assumptions), introduce the entity relationship diagram (ERD) of the Database.

Scenario 2. The following data and relationships are required, in Health Database for Civil Servants which will be established throughout of Turkey.

- Number, name, and address of public organizations.
- Number and type of public hospitals (each public hospital is a public organization).
- Number (unique in the hospital) and location of clinics in public hospitals.
- Registration number, name, surname, gender, job and organization of the civil servant. It is assumed that each employee works in one institution only.
- Registration number and speciality of doctors. Every doctor is a civil servant. Like every civil servant, every doctor works in a public organization; but the organization that the doctor works, must be a hospital.
- Code, name, and type of diseases.
- Code, name, type, and unit price of drugs.
- Data about appointments of patients: which patient, which doctor, by which date and time, in which room the appointment was made. It is assumed that the patient examinations are made in the hospital where the doctor works, a patient can have appointments many times from the same or different doctors, and a doctor give appointment at most one patient on the same day and at the same time. A patient

must be restricted from having appointments for a doctor at most on the same day and time.

- Clinical Examination data: which patient has been examined, by which doctor, what date and time, in which room. The relationships between appointments and examinations is not one-to-one. Usually there is a examination for each appointment. However, if the patients do not appear for their appointments, there will not be examination in those appointments. Patients without an appointment can be examined in emergency cases. It is assumed that a doctor has examined at most one patient at the same time in a day.
- Disease diagnosis data: which disease(s) was/were diagnosed in which examination for which patient. The diagnosis of the disease can only be made at the examination. In a medical examination, the doctor can put no, one or many disease diagnoses for the patient.
- Given medication data: in which examination, to which patient, which drugs in what quantities. It is also assumed that the doctor may give the patient one or more medicines and not give any medicine.

Based on the above description (for those not covered in the description, if necessary, make appropriate assumptions), introduce entity relationship diagram (ERD) for Health Database for Civil Servants.