

Istanbul Bilgi University

Department of Computer Engineering

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Campus: Santral

CMPE351 DATABASE SYSTEMS I

Homework 2: Company Database

Make sure that you explain in detail all your steps - thoughts. You may get extra points for an appropriate observation, you may lose some marks due to an obscure solution.

1. {90 points} Your task is to design a 'Company' database capable of storing information about EMPLOYEE(s), DEPARTMENT(s), and PROJECT(s). Knowing that:
 - We store each employee's name (composite attribute - {10 points}), social security number, address, salary, and telephone number. An employee is assigned to one department, but may work on several projects which are not necessarily controlled by the same department. We keep track of the number of hours that an employee works on each project - {10 points}
 - Each department has a unique name, a unique number, a single location, and a particular employee who manages - {10 points} the department. We keep track of the start date - {10 points} when that employee began managing the department
 - A department controls a number of projects, each of which has a unique name, a unique number and several locations - {10 points}
 - (a) {5 + 5 points} Give the ER diagram and schema
 - (b) {5 + 5 points} Which type of relationships do you have? Discuss both the cardinality and the participation constraints
 - (c) {10 points} Give the corresponding relational schema; and
 - (d) {10 points} Give a snapshot containing at least 5 entrances (better if mean full).
2. {10 points} Primary, candidate and foreign keys: what are them? Give examples (referring to answer 1)

Note: We will check this homework together during the lectures'hours.

Resource: Chapter1, par.2.1, chapter3 (Data Modeling using the ER model) and Chapter 7 (Relational Database design by ER and EER to Relational Mapping) of the Elmasri & Navathe book.
