

Exercise – Class Diagrams

Draw a class diagram, showing the relevant classes, attributes and relationships for each of the following situations. If you feel that you need to make additional assumptions, clearly state them for each situation.

Situation I

A company has a number of employees. The attributes of Employee include employeeID (primary key), name, address, and birth date. The company also has several projects. Attributes of Project include projectName and startDate. Each employee may be assigned to one or more project, or may not be assigned to a project. A project must have at least one employee assigned, and may have any number of employees assigned. An employee's billing rate may vary by project and the company wishes to record the applicable billing rate for each employee when assigned to a particular project.

Situation II

A hospital has a large number of registered physicians. Attributes of physicians include physicianID (primary key) and specialty. Patients are admitted to hospital by physicians. Attributes of Patient include patientID (primary key) and

patientName. Any patient who is admitted must have exactly one admitting physician. A physician may optionally admit any number of patients. Once admitted, a given patient must be treated by at least one physician. A particular physician may treat any number of patients, or may not treat any patients.