Stevens Institute of Technology

Department of Computer Science

CS442: Database Management System

Fall 2016

**Handout 1. ER Diagram Design (**September 9, 2016)

Assume you are hired by a bioinformatics company to design a database. The client describes his/her data as the following:

1. *Patient:* Each patient has a unique *ID*, a Patient *name*, a *Date of Birth*, a *Tissue Type* and an *indicator* denoting whether the tissue is cancerous or normal;
2. A *patient library* associates a patient with multiple *tag*s;
3. Each tag has a unique *tag number* and a unique *DNA sequence*;
4. For each tag in the patient library, a *count* is given to record the number of times the tag occurs in the library. In general, the same tag can be associated with any number of patients;
5. A tag may be mapped to a *gene*. Each gene has a unique *gene name* and a *type*;
6. Multiple tags may be mapped to the same gene. However, two different genes cannot be mapped to the same tag.

**Question:**  Draw an ER diagram for the database.