**Brendan Rooney**

**CSC 451 - Assignment 2**

**Entities**

STUDENT: A STUDENT is a person that attends our school. For each STUDENT we record their Name, which consists of the STUDENT’s full name. Each STUDENT also has a single Major, and is assigned a single unique ID\_Number. The ID\_Number is the key attribute for a STUDENT.

HIGH\_SCHOOL: A HIGH\_SCHOOL is a school that a STUDENT has previously graduated from. For each HIGH\_SCHOOL we keep track of its Location, this is a composite attribute made up by recording the City and State it is in. We also keep a single record of each HIGH\_SCHOOL’S Name, and their single unique Phone\_Number. Phone\_Number is the key attribute for HIGH\_SCHOOL.

PROFESSOR: A PROFESSOR is a teacher and sometimes an advisor of a STUDENT. For each PROFESSOR we record their Name, which like STUDENT, is their full name. We also record the Department that they belong to. A PROFESSOR can be a part of many Departments, but must belong to at least one. Each PROFESSOR is also assigned a single unique ID\_Number, which serves as their attribute key.

DORM\_ROOM: A DORM\_ROOM is an on campus apartment, in our only dormitory, which houses a single STUDENT. For each DORM\_ROOM we note which of two Wings they are in and their single unique Room Number. The Room Number serves as the attribute key for a DORM\_ROOM.

**Relationships**

graduates: A STUDENT graduates from one HIGH\_SCHOOL. However it is also possible for a STUDENT to graduate from zero HIGH\_SCHOOLS. A HIGH\_SCHOOL can have one to many graduating STUDENTS.

Advises: Each STUDENT has one PROFESSOR that advises them. In contrast a PROFESSOR can advise zero to many STUDENTS.

Has: Each DORM\_ROOM has only one STUDENT that lives in it. However not all DORM\_ROOMS are occupied so they can also have zero STUDENTS living in them. A STUDENT can either have one DORM\_ROOM, or live off campus, which means they have zero DORM\_ROOMS.

**Additional Assumptions:**

* For DORM\_ROOMS, the North and South Wings use different Room Numbers, and each Room Number is unique.
* Each HIGH\_SCHOOL has a unique Phone\_Number.
* Each HIGH\_SCHOOL in our database must have at least one of our STUDENTS that graduated from there.
* Each PROFESSOR must belong to at least one Department.
* Each STUDENT only has one Major.