

# GROUP EXERCISE

## Chapter 3

### The Relational Model and Normalization

#### Exercise 4

**Problem:** A student can have more than one major. Many students can have the same major. Preceptors advise students. Each student is advised by one and only one preceptor for each specific major. Preceptors advise for only one major, but several preceptors may advise in the same major. You might be tempted to create the following table. Preceptors' names are unique.

#### ADVISOR

Student	Major	Preceptor	Maj_GPA
123	Marketing	Gomez	4.0
456	Marketing	Gomez	3.3
789	Marketing	Mollica	3.2
123	Math	Raginiski	3.7

1. What are the functional dependencies of this relation?
2. What are the candidate keys in this relation (unique determinants of all of the other columns)? Primary Key?
3. What happens if 123 graduates and those rows are deleted?
4. How can we store the fact that Urbanski is a Nursing preceptor?
5. So if we apply Kroenke's Rule for decomposing relations to avoid modification anomalies, how should this relation be decomposed? Include the data too.