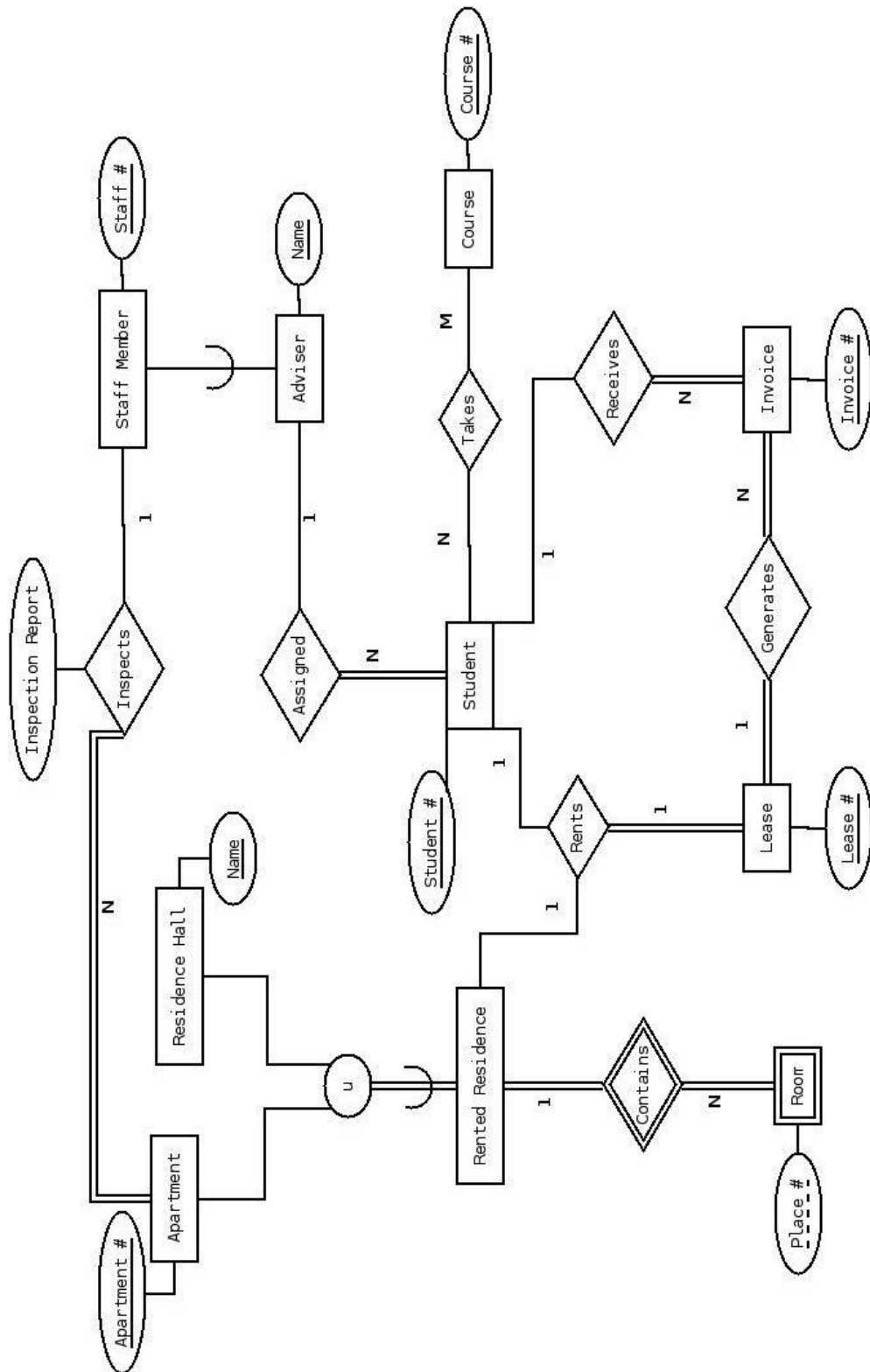


Assumptions/Questions

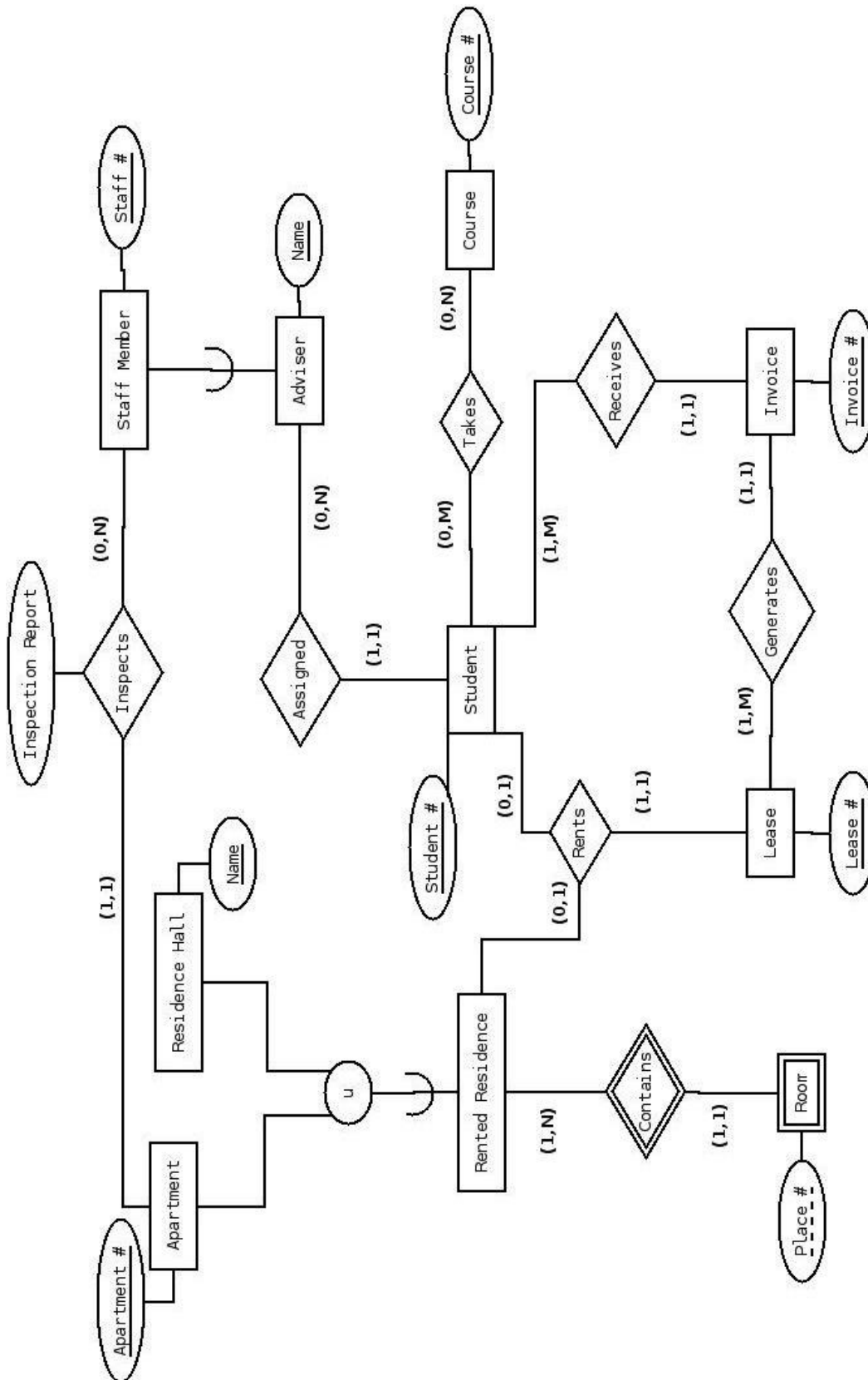
Assumptions:

1. A student can only be renting one residence at a time.
2. A student can only have one lease at a time.
3. An adviser can advise more than one student.
4. An staff member can inspect more than one apartment.
5. A student can take many courses at a time.
6. A student can have a lease up to 4 quarters before a new lease is generated.
7. A student will receive at least 1 invoice if they have a lease.
8. A student can receive up to 4 invoices for one lease.
9. A lease will generate at least 1 invoice.
10. A lease will generate at most 4 invoices.
11. The name of a Residence Hall is unique amongst all the Residence Halls.
12. The date of an Inspection Report includes the time of inspection.
13. An apartment can be inspected multiple times.

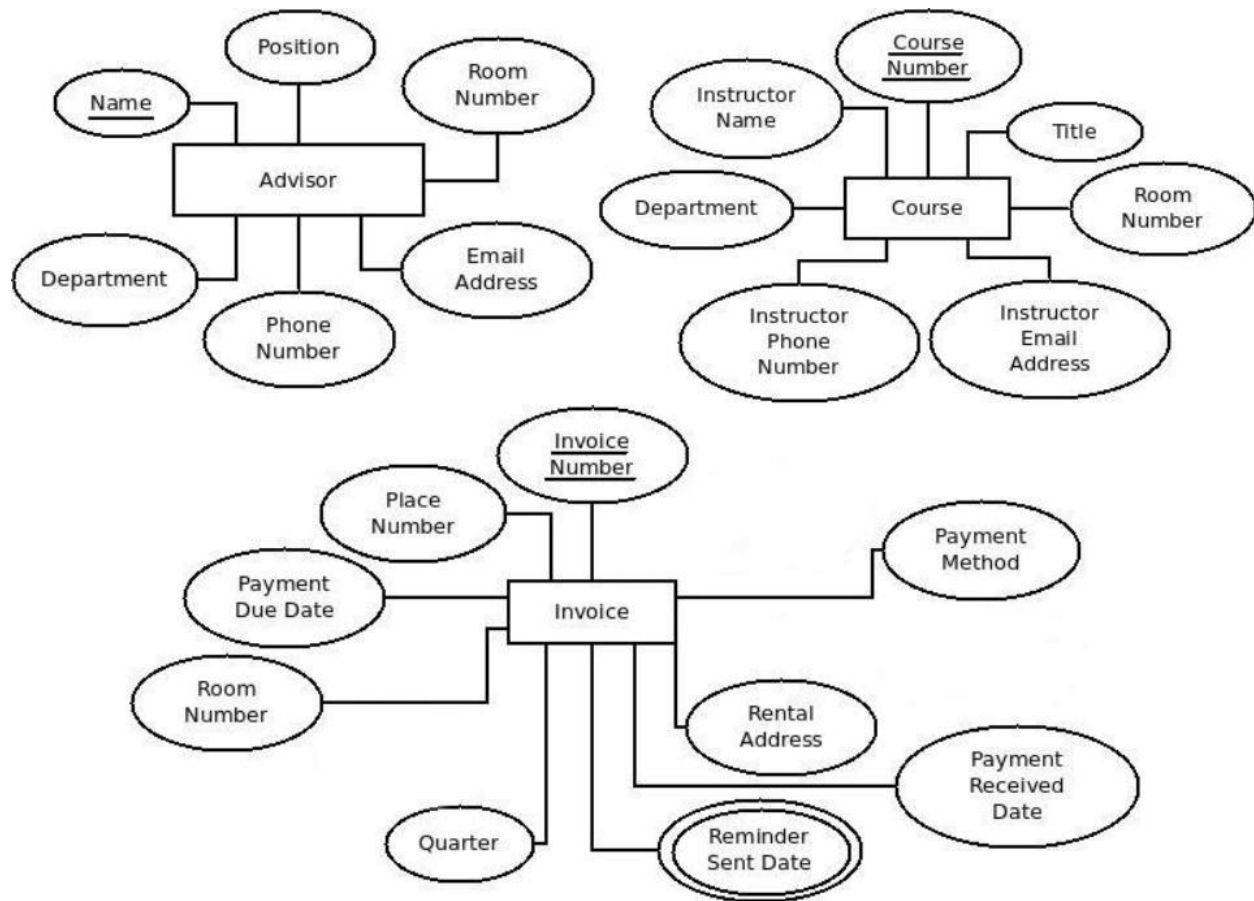
Conceptual Model: Part A1 - Relationships/Entities using Cardinality Ratio and Participation Constraints



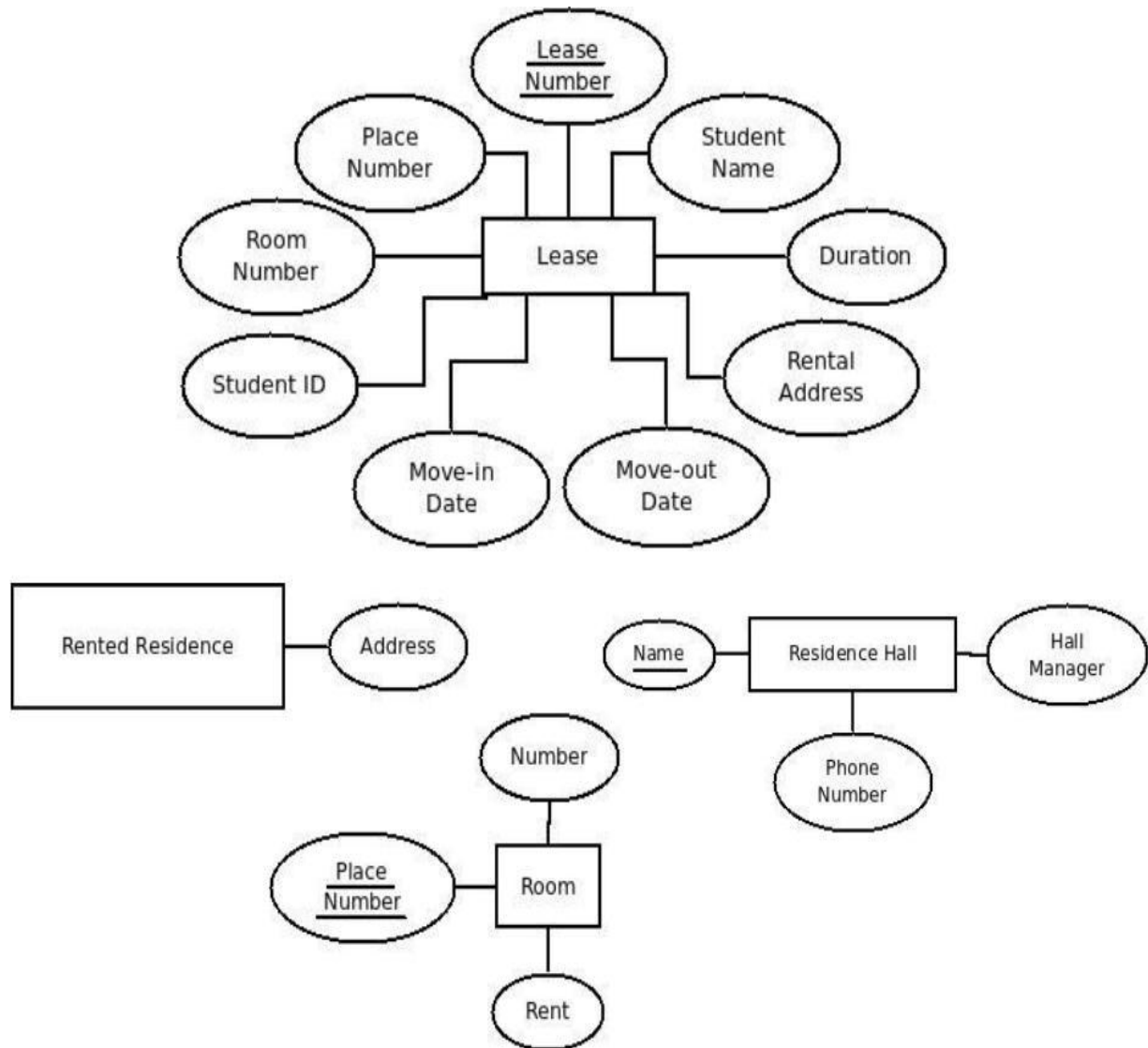
Conceptual Model: Part A2 - Relationships/Entities using Structural Constraints



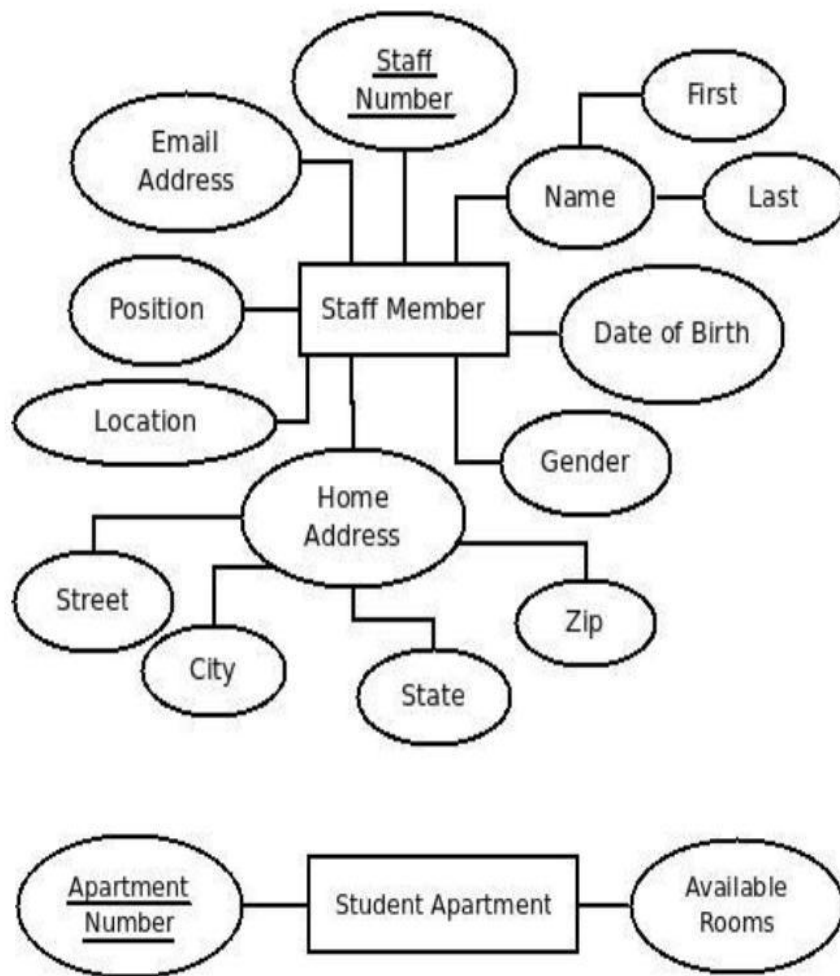
Conceptual Model: Part B - Entities/Attributes



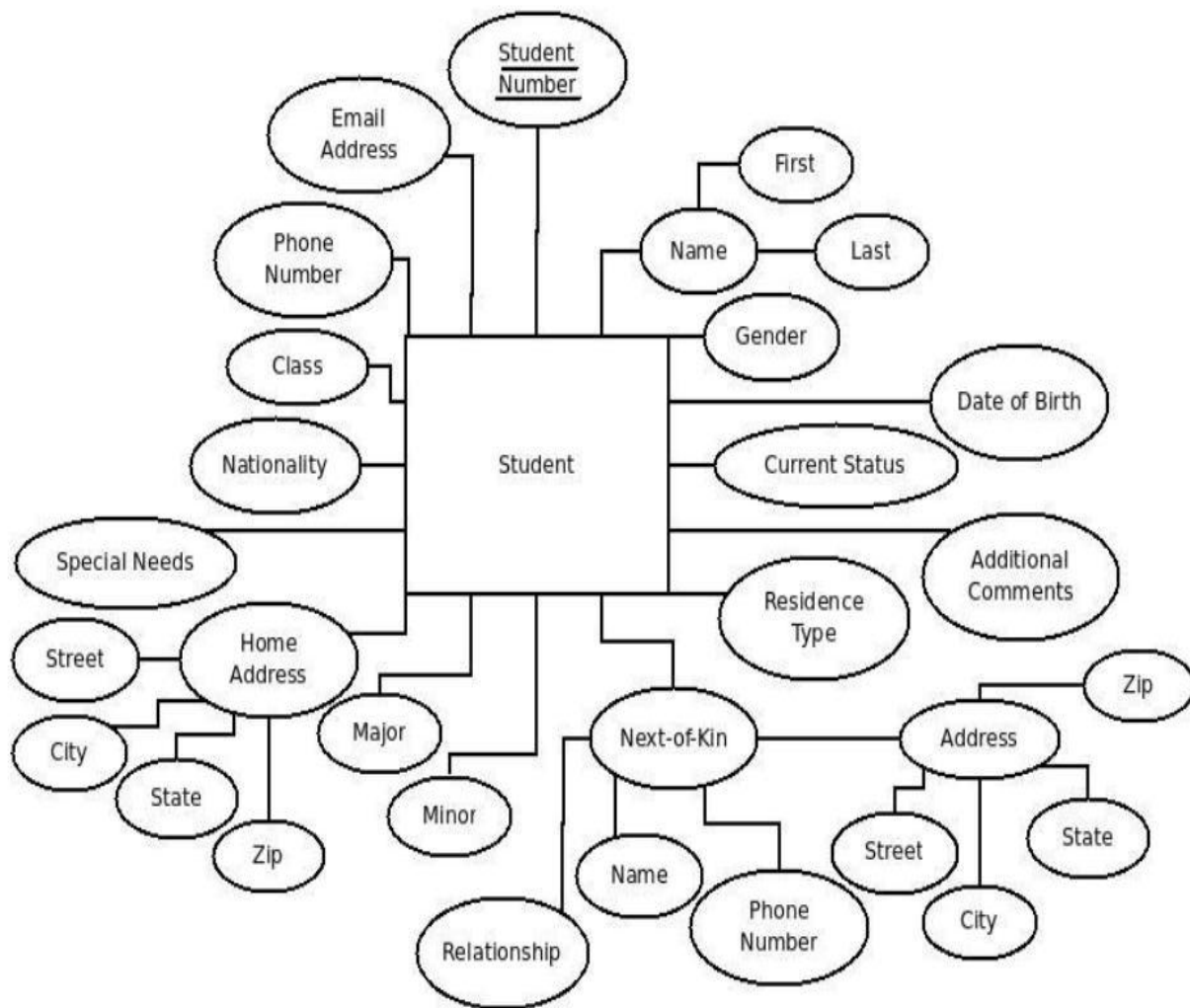
Conceptual Model: Part B - Entities/Attributes continued



Conceptual Model: Part B - Entities/Attributes continued



Conceptual Model: Part B - Entities/Attributes continued



Data Dictionary

Entity	Attribute Name	Description
Advisor		The advisor is a member of staff. The are responsible for the welfare and academic progress of their advisee.

Advisor	Name	Primary key to identify Advisor
Advisor	Position	Position of Advisor
Advisor	Room Number	Room number assigned to Advisor
Advisor	Email Address	Advisor's primary email
Advisor	Phone Number	Advisor's primary phone number
Advisor	Department	Department which Advisor belongs to
Course		Course is a class that is offered by the university.
Course	Course Number	Course number is the primary key describing Course
Course	Title	Title of the course and a description
Course	Room Number	Room number where course is conducted
Course	Instructor Email	Email for the instructor teaching the course
Course	Instructor Phone	Phone number for instructor teaching course
Course	Department	To what department does the course belong to
Course	Instructor Name	The name of the instructor conducting the course
Invoice		An invoice is a receipt given to student as a summary of lease terms, monies paid, and other pertinent information.
Invoice	Invoice Number	Primary key identifying the invoice
Invoice	Payment Method	The method of payment the student presented
Invoice	Rental Address	The address of the rental property
Invoice	Payment Received Date	The date of when the payment was received
Invoice	Reminder Sent Date	When a reminder was sent. This is a multivalued attribute
Invoice	Quarter	Which quarter the invoice refers to
Invoice	Room Number	The room number that was leased

Invoice	Payment Due Date	The due date of the payment
Invoice	Place Number	The place number the invoice refers to
Lease		A lease is a paper stating the terms that bind a landlord and tenant.
Lease	Lease number	The unique number associated with the lease
Lease	Student name	The name of the student on the lease
Lease	Duration	The time period of the lease
Lease	Rental Address	The address of the rental property
Lease	Move-out Date	The date the renters have to vacate the property
Lease	Move-in Date	The date that renters take possession
Lease	Student Id	The student number of the student on lease
Lease	Room Number	Which room is being leased
Lease	Phone Number	The phone number of the lessee
Rented Residence		A rented residence is the current location of a room that is being occupied by a student.
Rented Residence	Address	The address of the residence
Residence Hall		A residence hall is a composite of rooms that are available for rent by students.
Residence Hall	Name	The name of the residence hall
Residence Hall	Hall Manager	The name of the residence hall manager
Residence Hall	Phone Number	The phone number to the residence hall
Room		A room is a distinct living quarter that a student rents.
Room	Place Number	Primary identifier of the room
Room	Number	The number of the room being rented

Room	Rent	Rental cost for this particular room
Staff Member		A staff member is an employee of the university that is in charge of a students welfare and academic progress. They are also in charge of inspecting rooms.
Staff Member	Staff Number	The unique number assigned to the staff at time of hire
Staff Member	Name(First, Last)	The name of staff member and its composite elements
Staff Member	Date of Birth	Day, month and year when staff member was born
Staff Member	Gender	The sex of the staff member
Staff Member	Home Address(Street, City, State, Zip)	The home address of the staff member and its composite elements
Staff Member	Location	The location where the staff member works
Staff Member	Position	The job title of the staff member
Staff Member	Email Address	The primary email address of the staff member
Student		A student is an individual who is currently enrolled in the university.
Student	Student Number	The unique student number assigned at time of enrollment
Student	Name(First, Last)	The name of the student and its composite elements
Student	Gender	The sex of the student
Student	Date of Birth	The student's birthday
Student	Current Status	Whether a student is currently renting or on a waitlist
Student	Additional Comment	Any additional information pertaining to the student
Student	Residence Type	Which kind of residence the student is currently renting
Student	Next-of-Kin(Relationship, Name, Phone Number, Address(Street, City, State, Zip)	This attribute is the person to contact in case of emergency. Its composition is comprised of relationship to student, the person's name, phone number and address. Address is also a composite attribute.

Student	Minor	The student's minor if applicable
Student	Major	The major study for each student
Student	Special Needs	Special accommodations, if any, needed for the student
Student	Home Address(Street, City, State, Zip)	The home address of the student
Student	Nationality	The nation of origin or naturalization of student
Student	Class	The standing of student in terms of academic progress
Student	Phone Number	The phone number to each student
Student	Email Address	The primary email address for each student
Student Apartment		This is the physical building that a student rents and resides in.
Student Apartment	Apartment Number	The number that identifies each apartment
Student Apartment	Available Rooms	Number of rooms available

Business Rules

1. A student must have an advisor.
2. Each residence hall must have a hall manager.
3. Each student apartment must have between three and five students.
4. Each residence hall room must have only one student.
5. A student must rent a room for a minimum of one quarter and a maximum of one year.
6. Lease agreements must be negotiated at the beginning of the academic year.
7. Each student must be associated with a single major.
8. Each room must be uniquely identified by a place number.
9. The student information pertains to those currently renting a room and those on the waiting list.
10. A student's class can be one of the following only: Freshman, Sophomore, Junior, Senior, Graduate, Postgraduate.
11. A student's current status can one of the following only: placed, waiting.
12. The duration of the lease is stored as quarters.
13. Students may pay an invoice with one of the following methods only: check, cash, credit card.
14. The course title includes the year of the course as well as it's name.

Points of Disagreements

1. James thought Next-of-Kin should be its own entity, whereas Danny thought otherwise. We all agreed it would be more appropriate to make next-of-kin an attribute of Student.
2. There was general confusion over whether the relationships between Lease, Invoice, Student and Rented Residence should be defined as “identifying relationship” based on existence constraints. After review of the textbook, we realized that the existence constraint of these entities in relation to the others was conveyed through the “total participation constraint.”
3. We were not sure about where to place the cardinality of categories of an entity in which each category has differing cardinality.
4. Several of us thought that Inspection should be an entity of its own right, but in the end we decided that it should be treated as attributes of the “inspects” relationship between the Staff Member and Apartment entity.
5. We had a discussion at great length over what the team name should be. Half of the group was determined to name the group “The Queries” until Danny came up with the name “The Primary Keys” which was universally liked and was ultimately chosen as our name. This was later changed to “King James and the Knights of the Data Table”

Comments on Project - Conceptual Model Phase

A. Difficulties you faced in doing the implementation phase and how they were resolved?

James Small - Summary of Difficulties: We all had different difficulties while doing part 1 of the project. The key to solving them all was to look in the book and ask questions. The difficulties we encountered were related to business rules, the data dictionary, and structural constraints, and categories. For business rules, we just needed to understand what was meant by that term, and the book solved that. For the data dictionary, the problem was with how to show composite attributes which was easily solved. The structural constraints with categories was also a trouble point, but we solved that with a quick questions to Dr. Mendoza, who said to use a business rule to show things.

B. Likes and Dislikes about this part of the project?

Carbajal, Enrique: I like that our team collaborates well. What I don't like is trying to find the best method of doing things because there are so many avenues one can take to solve the same problem.

Small, James - I like how there are completely different ways of creating this database, and none of them are wrong, it's just how we interpreted the specifications given. I disliked having to come up with the diagrams so quickly and would have liked a little more time to fine tune our design.

Takahashi, Mark: I like our project option of Coyote Residence Office because it is a good real world example of how an organization would need a database designed and implemented. I dislike the limited amount of in class time we had to work on this first part of the project.

Urbach, Daniel: I liked the fact that we had the freedom to determine the structure of the database, and that each of us initially had different ideas of how to implement the database. I disliked creating the entity/attribute diagrams, because it seemed to be superfluous considering we had it in list form already.

Comments on Project - Conceptual Model Phase Continued

C. What was the most challenging aspect of this part of the design?

Carbajal, Enrique: The most challenging aspect of this phase of the design is trying to sort out the residence hall and apartment situation.

Small, James - The most challenging aspect was creating the conceptual model. There were so many ways to go about the design that it took a lot of discussion and working through the specifications to come up with a design we liked.

Takahashi, Mark: The most challenging aspect was developing the conceptual model using ER/EER diagrams in a short period of time.

Urbach, Daniel: The most challenging aspect of this part for me was applying the many concepts we have learned in the course so far and making sure I was using them correctly.

D. Suggestions on how to improve this part of the project?

Carbajal, Enrique: No suggestions on how to improve this part of the project. However, I would like to know whether there is ever a definitive answer to any part of the project, or should we simply be using best practices as our guides.

Small, James - The only thing I would change about the project would be a little more time to work on it. Even though we got our conceptual model completed, I still think there are changes we could have made to better improve it.

Takahashi, Mark: Asking more questions to clarify certain parts of the project would help improve.

Urbach, Daniel: I believe this part of the project could be improved if we had had more time in class to discuss the overall requirements and structure of the project.