Use Case Diagram to Class Diagram

- Use Cases are used to identify the components (classes) of the system.

- Develop a class diagram to describe the types of objects in the system and the kinds of relationships between the objects that exist.

- The nouns that are used in the use cases will be used to identify the classes.

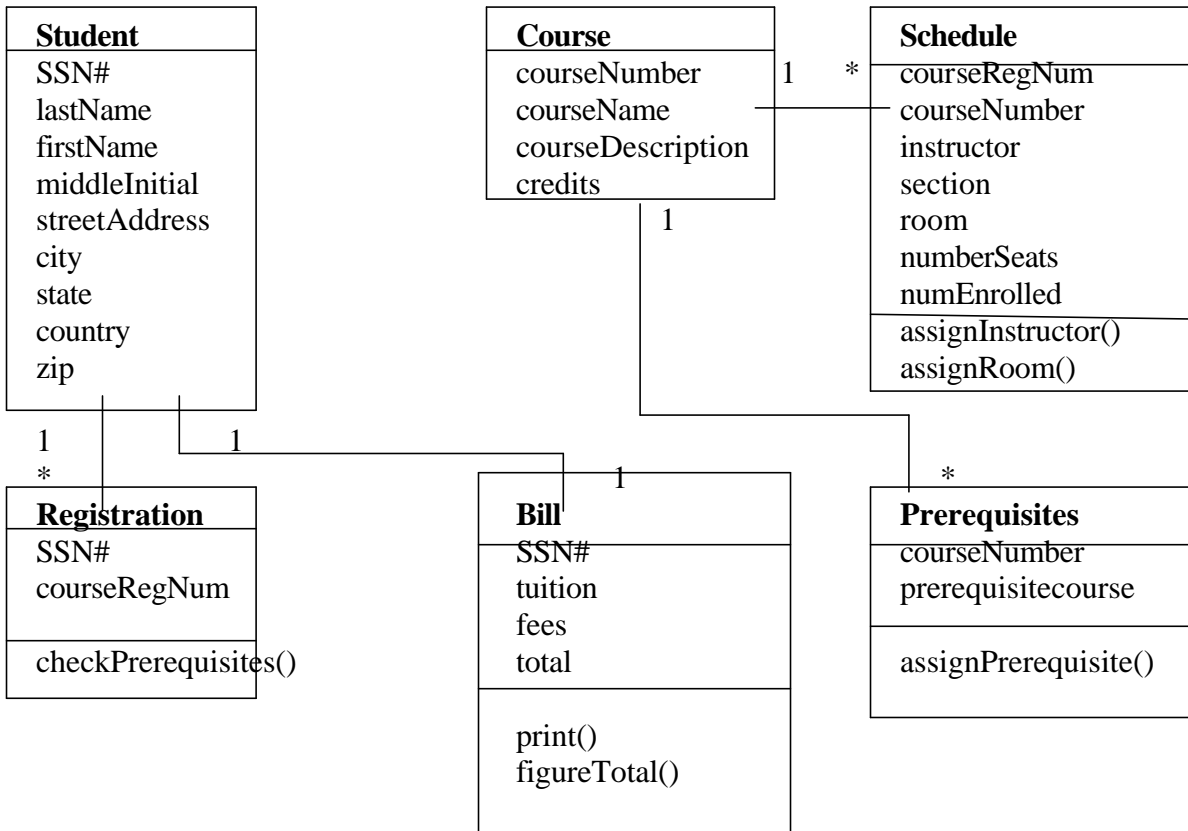- Develop the class diagram from the highest priority use cases first.

Example Use Case: Register Student for Course

A student may register for classes during a specified registration period. To register, a student must see their advisor. The advisor must approve each course that the student has selected. The advisor will use the registration system to determine if the student has met the course prerequisites, is in good academic standings and is eligible to register. If the advisor approves the courses, the advisor enters the student's college id into the course registration system. The course registration number for each course is entered. The course description, course number and section for those courses will automatically display. The system will check for schedule conflicts before saving the registrations. A bill for the courses will print in the Bursar's office. The student should proceed to pick it up.

Identify the nouns.

Student
Course
Advisor
Schedule
Bill
Prerequisites
Registration

Add each noun to the class diagram. List each attribute, operation and relationship for each class.

Student

SSN#
lastName
firstName
middleInitial
streetAddress
city
state
country
zip

Course

courseNumber
courseName
courseDescription
credits

1   *

1

Schedule

courseRegNum
courseNumber
instructor
section
room
numberSeats
numEnrolled

assignInstructor()
assignRoom()

1   1

*

1

1

*

Registration

SSN#
courseRegNum

checkPrerequisites()

Bill

SSN#
tuition
fees
total

print()
figureTotal()

Prerequisites

courseNumber
prerequisitecourse

assignPrerequisite()

Sequence Diagrams
Another Example: Print Shop