Assignment 4
Due: March 14, 2018, Wednesday

Name: Jordan Judt Student ID: 7208404

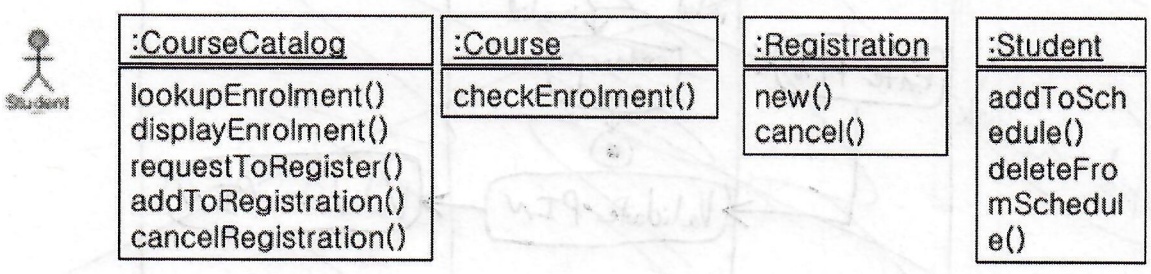
100 points are maximum.

The objective of this assignment 4 is to understand the principal diagram types based on the Unified Modeling Language (UML) and how these diagrams may be used in system modeling. Questions of this assignment 4 are based on the exercises of Chapter 5 in the textbook.

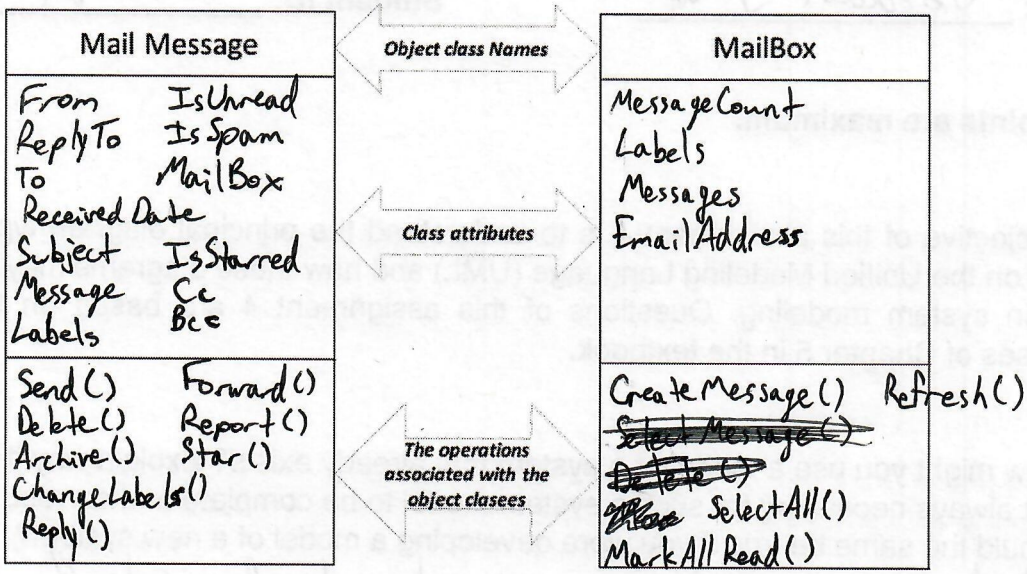
1. How might you use a model of a system that already exists? Explain why it is not always necessary for such a system model to be complete and correct. Would the same be true if you were developing a model of a new system?

Used in requirements engineering to clarify what the existing system does and how it can be used. It's used as a basis for discussing strengths and weaknesses, and leads to the requirements of the new system. An existing model doesn't have to be complete to develop a new model from it, but the new model should be complete in the end.

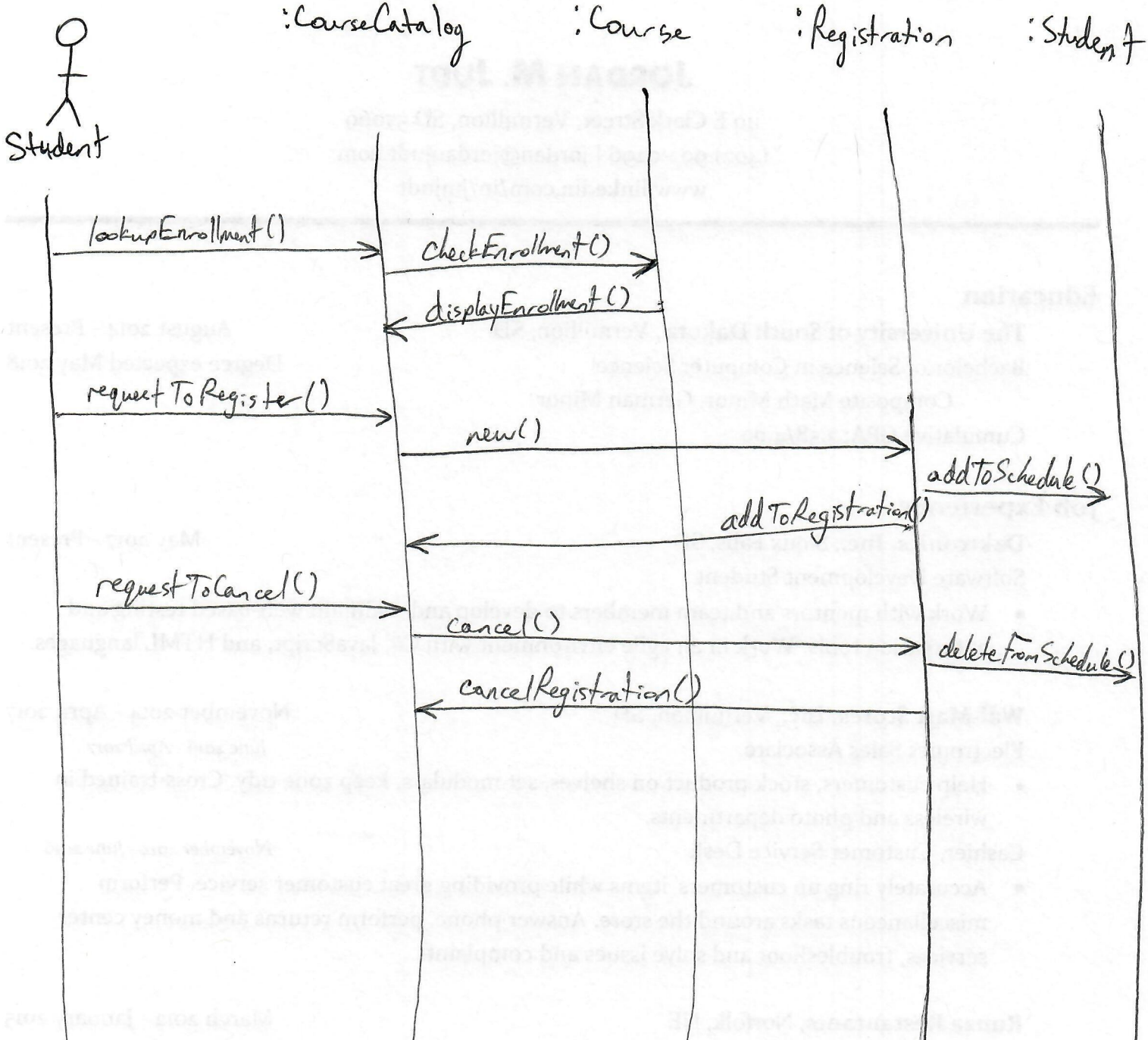
2. Develop a sequence diagram showing the interactions involved when a student registers for a course in a university. Courses may have limited enrolment, so the registration process must include checks that places are available. Assume that the student accesses an electronic course catalog to find out about available courses. (You can add additional methods if you need.)

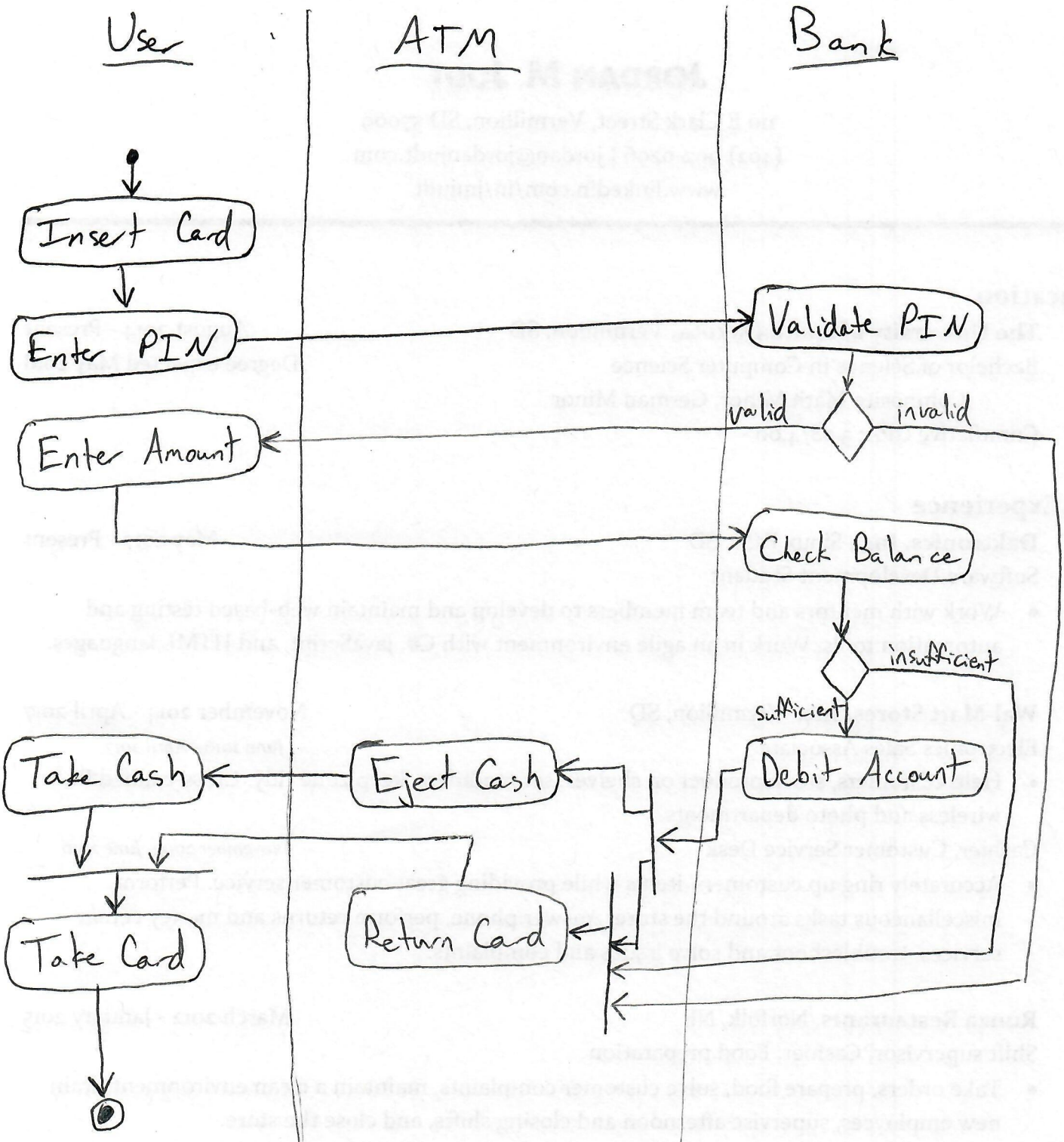


3. Look carefully at how messages and mailboxes are represented in the email system that you use. Model the object classes that might be used in the system implementation to represent a mailbox and an e-mail message. Write the class attributes and the operations for Mail Message and MailBox classes.



4. Based on your experience with a bank ATM, draw an activity diagram that models the data processing involved when a customer withdraws cash from the machine.


Student
:CourseCatalog
:Course
:Registration
:Student
lookupEnrollment()
checkEnrollment()
displayEnrollment()
requestToRegister()
new()
addToSchedule()
addToRegistration()
requestToCancel()
cancel()
deleteFromSchedule()
cancelRegistration()


User
ATM
Bank
Insert Card
Enter PIN
Validate PIN
valid
invalid
Enter Amount
Check Balance
insufficient
sufficient
Take Cash
Eject Cash
Debit Account
Take Card
Return Card