Quiz 3: Inheritance

Suppose we are building a student records system like Acorn, and we have started to write class Student:

class Student:
    """A university student.

    === Public attributes ===
    @type st_num: int
        This student’s student number
    @type name: str
        This student’s name
    @type courses: dict[str, int]
        The courses this student has taken. Each key is a course code, such as 'csc148' and its value is the student’s grade in the course.
    @type num_credits: int
        The number of credits this student has earned. One credit is earned each time the student passes a course.
    ""

def __init__(self, st_num, name):
    """Initialize this student.

    @type st_num: int
    @type name: str
    ""
    self.st_num = st_num
    self.name = name
    self.courses = {}
    self.credits = 0

def complete_course(self, course, grade):
    """Record the fact that this student has completed a course.

    @type self: Student
    @type course: str
        The course they completed.
    @type grade: int
        The grade they earned.
    ""
    self.courses[course] = grade
    if grade > 50:
        self.credits += 1
A graduate student needs some additional attributes, so we are defining it to be a subclass of Student:

class GraduateStudent(Student):
    """A graduate student"
    === Public attributes ===
    @type supervisor: str
    The name of this graduate student's supervisor.
    @type meetings: list[str]
    The dates on which this graduate student's thesis committee met.
    Each date is represented as a str.
    """
    def __init__(self, st_num, name, supervisor):
        """Initialize this graduate student."
        @type st_num: int
        @type name: str
        @type supervisor: str
        """
        self.supervisor = supervisor
        self.meetings = []

1. As currently written, there is a bug in the GraduateStudent class. Circle the line in the following three lines of code that will throw an exception, and state what error will be raised.

   1
g = GraduateStudent(1234567, 'Ursula', 'Professor Fleet')
2
g.complete_course('csc148', 92)
3
g.supervisor = 'Professor McIlraith'

2. Modify the code as needed to fix the bug.

3. Graduate students must get a grade of 70 to earn credit for a course. What change should be made to the code to implement this?

4. Modify the code to implement it.