Week 3 Quiz: Inheritance

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

class Student:
    """A university student.

    =*=*= Instance attributes =*=*= 
    st_num:
        This student’s student number.
    name:
        This student’s name.
    courses:
        A dictionary containing the courses this student has taken.
        Each key is a course code like ‘csc148’,
        and its value is the student’s grade in the course.
    credits:
        The number of credits this student has earned.
        One credit is earned each time the student passes a course.
    """

    st_num: int
    name: str
    courses: Dict[str, int]
    credits: int

def __init__(self, st_num: int, name: str) -> None:
    """Initialize this student.
    """
    self.st_num = st_num
    self.name = name
    self.courses = {}
    self.credits = 0

def complete_course(self, course: str, grade: int) -> None:
    """Record the fact that this student has completed a course.
    """
    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:

```python
class GraduateStudent(Student):
    """A graduate student.

    === Additional instance attributes ===
    supervisor:
        The name of this graduate student's supervisor.
    meetings:
        The dates on which this graduate student's thesis committee met.
        Each date is represented as a str.
    """
    supervisor: str
    meetings: List[str]

def __init__(self, st_num: int, name: str, supervisor: str) -> None:
    """Initialize this graduate student.
    """
    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 raise an exception, and state what error will be raised.

```python
    g = GraduateStudent(1234567, 'Ursula', 'Professor Fleet')
    g.complete_course('csc148', 92)
    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. Describe, in English, what change should be made to the code to implement this.

4. Modify the code to implement it.