


Object Oriented Programming:

Classes and Objects - A Final Example




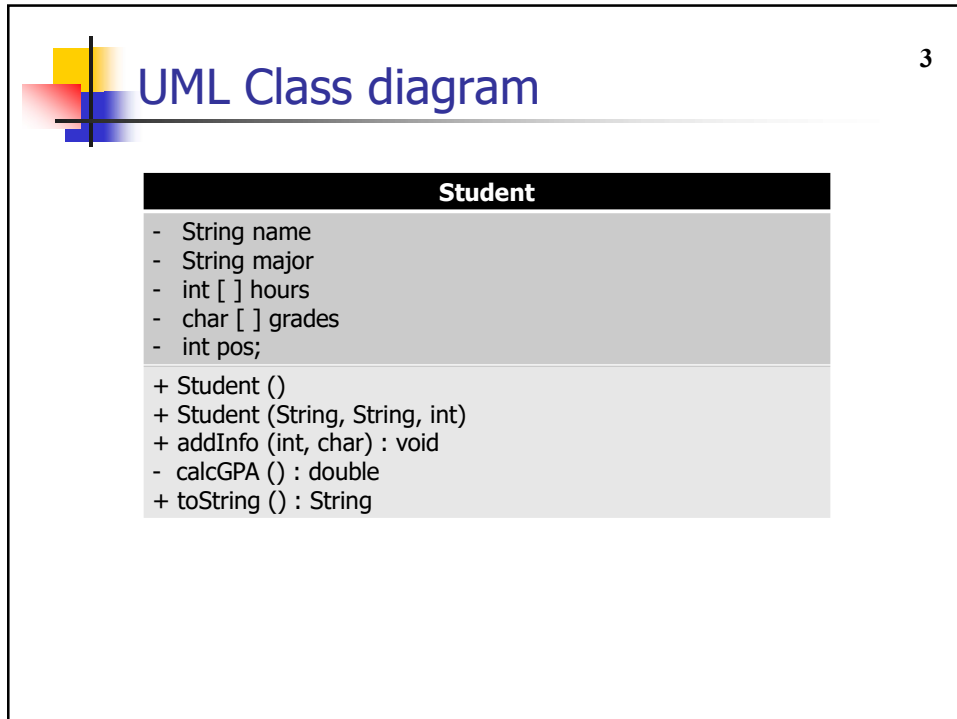
Create a class to represent a K-State Student...

- **Data Properties:** name, major, credit hours and grade for each class taken
- **Constructor(s):** 3-argument (name, major, number of courses) and a no argument (so application program will compile, if used)
- **Method** to **add course info** to object (# of credit hours / grade)
- **Method** to **Calculate the GPA**
- **Method toString** to **display** name, major, and current GPA

Calculating GPA: Given 3 hrs (B), 5 hrs (C), 4 hrs (A)

$$(3 \text{ hrs} * 3 \text{ pts}) + (5 \text{ hrs} * 2 \text{ pts}) + (4 \text{ hrs} * 4)$$
$$9 + 10 + 16 = 35 \text{ pts}$$
$$35 \text{ pts} / (3+5+4) \text{ hrs} = 35/12 = 2.9166666 \text{ GPA}$$

2



Create an app class to use the *Student* Class

- Initially, test with a **single** Student object (Divide & Conquer)
- Once program works with single object, modify to use an **ARRAY** of Student objects

4