The University of Melbourne
School of Computing and Information Systems

COMP90041
Programming and Software Development
Second Semester, 2018

Lab 7 — Programming Practice (Week 8)

Using Arrays

Workshop Exercises

1. Write a class `Subject` to represent a university subject. Each subject should always have a subject code, title, and coordinator, and should allow them to be changed. Also write a class `Student` to represent a university student. Each student should have a name, student number and username, which can be changed. Each student can be enrolled in up to four university subjects at once, and can be enrolled in and unenrolled from subjects. It should also be possible to find all the subjects a student is currently enrolled in.

   Note that it is not a privacy leak for the `Student` class to return `Subject` objects or to store `Subject` objects passed to it, because those objects are not private. Consider the message enrolling a student in a subject. If some method later changes the name of that subject, then it is not an error for the subject recorded by that `Student` object to change; in fact, it would be an error for it not to change.

   However, it *would* be a privacy leak for the `Student` class to give access to any array it may use to store subjects, because that *is* private. Allowing other classes to access that array would yield control over enrollment to other classes.

Homework

These will also not be assessed.

2. Extend your `Subject` class so that it is possible to find all the students enrolled in a subject. You may assume that no more than 1000 students are enrolled in any subject at a time.

3. How could you implement the `Subject` class so that there is *no* limit on the number of students enrolled in a subject?