Introduction to Programming - Lab Exercises for Week 2 of Trimester 2

Adding a method to the Student and Application classes

1. Download the Student and Application classes from the T2-Week02 folder (these are the classes on slides 11 and 15 of last week's lecture).

   Add this method to the Application class:

```
public static void displayStudents(Student[] moduleList, int count) {
	TextIO.putln("The class has these " + count +
			" students and their marks are:");
	for (int i=0; i < count; i++) {
		TextIO.putln(moduleList[i]);
	}
}
```

   Call the method, passing over the register and count, after you have read in all the student names. What do you see when you run the program?

   To fix the problem, add the following method to the Student class and run the program again:

```
public String toString() {
	return name + ": test1 = " + test1 + ", test2 = " + test2
			+ ", test3 = " + test3;
	}
```

   This illustrates that a class should include a toString() method which has no parameters and returns a String so that the states of objects of the class can be displayed as text.

   Add the following loop, between the loop that reads the student's names and creates the register entries, and the call to displayStudents(), to enter some marks for test1, and run the program again.

```
	for (int student = 0; student < count; student++) {
		TextIO.put("Enter the mark for test1 for " +
				register[student].name + ": ");
		register[student].test1 = TextIO.getDouble();
	}
```

   The students have not sat tests 2 and 3 yet – can you think of how you might modify the toString() method or the Student class so that it does not display scores for tests that have not yet been sat?

Some first exercises on arrays

2. Write a program which reads six numbers into an array and prints them out in reverse order i.e. the number entered last should be printed first, and so on.

3. Write a program which reads in ten numbers and stores these in an array. It should then calculate the average and print out each number together with the difference between the number and the average.