

The questions given below are based on the lecture notes, and are intended to familiarize you with concepts of arrays, ArrayList and inheritance.

1. Arrays

Write a program that read in 16 values from the keyboard and store them into a two dimension array (*myArray*). The program then calculate the sum of every row elements and every column elements and put this sum into elements of two arrays (one for the rows – *rowSum* and the other for columns – *colSum*-see Figure1 below), then the program print the three arrays.

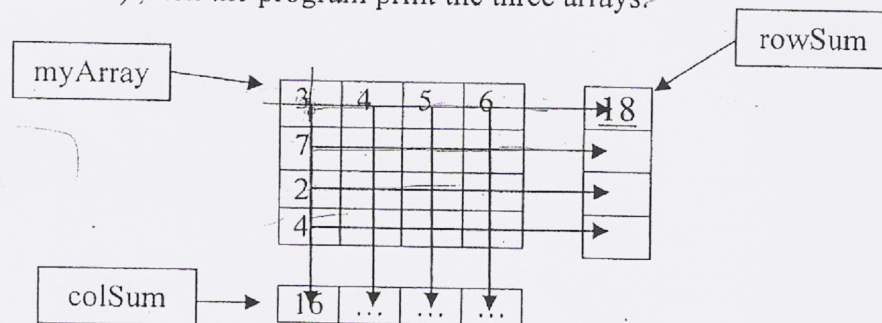


Figure 1

2. ArrayList class

You are to write a simple names book program. A names book contains names of your friends. Store your names book as an ArrayList with entries contains strings that represent the names. Your program must tell you how many friends you have and which one of them has the longest name.

3. Inheritance

Design and draw the UML class diagram of a set of classes that define the employees of a Hospital, the classes are:

HospitalPerson, Doctor and Nurse.

Where HospitalPerson is a supper class, Doctor and Nurse are subclasses.

Design your classes to satisfy the following requirements:

1. Each HospitalPerson has a name and an idNumber.
2. A Doctor has in addition a specialty attribute, while a Nurse has a maxDutyHours attribute.
3. We want to have a special print (output information) as following:
 - a. The name and idNumber of a HospitalPerson works for the Hospital.
 - b. The specialty of a Doctor.
 - c. The maxDutyHours of a Nurse.