# Assignment 3

Please complete the problems listed below. This assignment forms part of the assessment for this module and you are required to upload your solution to Moodle before mid-night on Sunday next. A template program is available on Moodle. You must include as header your name, student number and the assignment number.

**Please note that you should use the .java file available on Moodle. If you don’t have access please get someone to email it to you. Assignments submitted as zipped files, text files or .doc files will not be marked.**

**Question 1**

The class IntManager listed below manages an array of Integer values. Your task is to complete the methods listed in the interface.

class IntManager{

private Integer dt[];

private int size;

IntManager(int k){dt = new Integer[k]; size = 0;}

public void add(Integer x){

if(size < dt.length){

dt[size] = x; size++;

}

}

/\*public boolean found(Integer x){

//return true if x in dt; false otherwise

}

public Integer max(){

//return largest value in dt; null if size == 0

}

public Integer sumOdd(){

//calculate sum of odd values

}

public Integer freq(Integer x){

//count frequency of occurrence of x in dt

}\*/

public String toString(){

if(size == 0) return "[]";

String s = "[";

for(int j = 0; j < size - 1; j++)

s = s + dt[j] + ",";

return s+dt[size-1]+"]";

}

}

**Question 2**

A local lottery sells a small number of tickets for a draw. Each ticket has only two numbers selected at random. Numbers are restricted to values in the range 0..5. The class Ticket that encapsulates an individual ticket is given. A class TicketManager is also given and its methods are listed in the table below. Your task is to complete the methods listed. The toString method is given and should not be modified by you.

|  |  |
| --- | --- |
| Method | Semantics |
| TicketManager() | Constructor that creates an array of size maxTickets. |
| public boolean buy(Ticket t) | Adds a ticket to the draw on condition that the number sold does not exceed maxTickets. It returns true if successful, false otherwise. |
| public int freqWinner(Ticket t) | It checks for the number of winning tickets after a draw takes place. |
| public boolean search(Ticket t) | Searches for the given ticket and returns true if found; false otherwise. |
| public int sold() | Returns the number of tickets sold. |
| public boolean allsold() | Returns true if all tickets sold; false otherwise. |