UE19CS353 – OOADJ
Lab Assignment – 2

Write a Java program to implement the following.
1. Define an abstract class **TestQuestion** that has a String data variable called question and a readQuestion abstract method.
2. Define three subclasses **ShortAnswer**, **LongAnswer** and **MCQ**. The subclasses should have the following data variables in addition to the question, ShortAnswer (numLines – by default set to 1), LongAnswer (numLines) and MCQ(numChoices, array of String for the choices)
3. The three subclasses define the readQuestion method as follows:
    a. ShortAnswer would read the question from standard input (keyboard) and also sets the numLines to 1 by default.
    b. LongAnswer would read the question and numLines from standard input (keyboard)
    c. MCQ would read the question, numChoices and choices from standard input (keyboard)
4. Write the toString method for each of the subclasses to display the details
5. The main method in **TQManager** class should contain an array of TestQuestions that references any type of subclasses. In the main function, the user chooses to create a question of a specific type and accordingly an instance is created and a reference is assigned in the array and the readQuestion method is invoked. Thereafter, display all the questions by implicitly invoking the toString method.

Additional Question:
Write an integer list class. It should create a list of a fixed size and have a method add to add an element to the end of a list. If the list is already full, a message will be printed.

Now write a class SortedIntList that extends IntList. SortedIntList should be just like IntList except that its elements should always be in sorted order from smallest to largest. This means that when an element is inserted into a SortedIntList it should be put into its sorted place, not just at the end of the array. Hence, you need to override the add method. (Optionally, you can use recursion to locate the position of the element to be inserted.)