OOADJ Lab week 2

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1)

```java
import java.util.*;


abstract class TestQuestion{
        String question;
        TestQuestion(String Question)
        {
                question=Question;
        }
        abstract void readquestion();
}


class ShortAnswer extends TestQuestion{
        int numlines;
        ShortAnswer(String Question)
        {
                super(Question);

        }
        void readquestion()
        {
                numlines=1;
                Scanner sc= new Scanner(System.in);
                System.out.println("Enter the question: ");
                question= sc.nextLine();
        }
        public String toString()
        {
                System.out.println(question);
                System.out.println("numlines-"+numlines);
                return(" ");
        }
}


class LongAnswer extends TestQuestion{
        int numlines;
        LongAnswer(String Question)
        {
                super(Question);

        }
        void readquestion()
        {
                Scanner sc1= new Scanner(System.in);
                Scanner sc2= new Scanner(System.in);
                System.out.println("Enter the question: ");
                question= sc1.nextLine();
                System.out.println("Enter the number of lines: ");
                numlines=sc2.nextInt();
        }
        public String toString()
        {
                System.out.println(question);
                System.out.println("numlines-"+numlines);
                return(" ");
        }
}
```

```java
class MCQ extends TestQuestion{
        int numchoices;
        MCQ(String Question)
        {
                super(Question);
        }
        String[] choices=new String[100];
        void readquestion()
        {
                int i=0;
                Scanner sc1= new Scanner(System.in);
                Scanner sc2= new Scanner(System.in);
                System.out.println("Enter the question: ");
                question= sc1.nextLine();
                System.out.println("Enter the number of choices: ");
                numchoices=sc2.nextInt();
                while(i<=numchoices)
                {
                        choices[i]=sc2.nextLine();
                        i++;
                }

        }
        public String toString()
        {
                System.out.println(question);
                int k=0;
                while(k<=numchoices)
                {
                        System.out.println(choices[k]);
                        k++;
                }
                return(" ");
        }
}

public class TQManager{

        // Main driver method
        public static void main(String args[])
        {
                int type;
                String ex;
                Scanner sc= new Scanner(System.in);
                int number;
                System.out.println("Enter the number of questions");
                number=sc.nextInt();
                TestQuestion questionList[] = new TestQuestion[number];

                Scanner sc1= new Scanner(System.in);
                for(int curq=0;curq<number;curq++)
                {
                        System.out.println("Enter 1 for Short Answer 2 for Long Answer 3 for MCQ");
                        type = sc1.nextInt();
                        switch(type)
                        {
                        case 1:
                        {
                                questionList[curq] = new ShortAnswer(null);
                                (questionList[curq]).readquestion();
                                break;

                        }

                        case 2:
                        {
                                questionList[curq] = new LongAnswer(null);
                                (questionList[curq]).readquestion();
                                break;

                        }
                        case 3:
                        {
                                questionList[curq] = new MCQ(null);
                                (questionList[curq]).readquestion();
                                break;
```

```
                        ,
                        case 3:
                        {
                                questionList[curq] = new MCQ(null);
                                (questionList[curq]).readquestion();
                                break;

                        }
                        }
                }
                for(int cur=0;cur<number;cur++)
                {
                        ex=(questionList[cur]).toString();
                }
        }
}
```

Output -:


```
D:\6th_sem\OOADJ_LAB>javac TQManager.java

D:\6th_sem\OOADJ_LAB>java TQManager
Enter the number of questions
3
Enter 1 for Short Answer 2 for Long Answer 3 for MCQ
1
Enter the question:
what name
Enter 1 for Short Answer 2 for Long Answer 3 for MCQ
3
Enter the question:
capital of india
Enter the number of choices:
2
delhi
tokyo
Enter 1 for Short Answer 2 for Long Answer 3 for MCQ
2
Enter the question:
where do you live
Enter the number of lines:
1
what name
numlines-1
capital of india

delhi
tokyo
where do you live
numlines-1

D:\6th_sem\OOADJ_LAB>
```

2)

```java
import java.util.*;
class IntList
{
    List<Integer> list = new ArrayList<>(5);
    void add(int n)
    {
        if(list.size() <= 5)
        {
            list.add(n);
        }
        else
        {
            System.out.println("List already FULL !!\n");
        }


    }
}

class SortedintList extends IntList
{
    //List<Integer> list = new ArrayList<>(10);
    void add(int n)
    {
        if(list.size() <= 5 )
        {
            list.add(n);
            Collections.sort(list);
        }
        if(list.size() == 5)
        {
            System.out.println("list = " + list);
        }


    }
}



public class MyClass {
    public static void main(String args[]) {
        Scanner in = new Scanner(System.in);
        SortedintList obj = new SortedintList();
        int n, ch=1;
        do
        {
            System.out.println("enter element\n");
            n = in.nextInt();
            obj.add(n);
            ch=ch+1;
        }while(ch<=5);


    }
}
```

Output -:

```
enter element

5
enter element

3
enter element

4
enter element

2
enter element

1
list = [1, 2, 3, 4, 5]
```