《Java语言程序设计》课程实验报告

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| 专业名称 | 计算机科学与技术 | 年级 | 2017 | 班级 | 计工本1704 |
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| 实验名称 | 继承与多态2 |
| 实  验  目  的  及  要  求 | 目的：  了解熟悉顺序Java程序设计的形式，编写完整Java程序。  要求：   * 掌握类型之间的转换。 * 掌握动态绑定机制。 * 掌握用动态绑定解决问题。 * 会用Java编写完整的程序。 |
| 实  验  环  境 | Microsoft Windows 7 with SP1专业版（简体中文）32位  JDK 1.8  Eclipse 2017  或者Jcreator |
| 实  验  内  容 | 请按照要求编写出完整程序   * 第11章编程练习题: 11.6、11.10、11.13、11.15-17 |
| 实  验  步  骤  或  实  验  方  案 | **import** java.util.ArrayList;  **public** **class** Tset  {  **public** **static** **void** main(String[] args)  {  ArrayList list = **new** ArrayList();    list.add(**new** Loan());  list.add(**new** Date());  list.add("string");  list.add(**new** Circle());    **for** (**int** i = 0; i < list.size(); i++)  System.***out***.println(list.get(i));    }  }  11.10  代码：  **public** **class** MyStack **extends** java.util.ArrayList<Object>  {  **public** **boolean** isEmpty()  {  **return** **super**.isEmpty();  }  **public** **int** getSize()  {  **return** **super**.size();  }  **public** Object peek()  {  **return** get(getSize()-1);  }  **public** Object pop()  {  **return** remove(getSize()-1);  }  **public** **void** push(Object o)  {  **super**.add(o);  }  }  11.13  代码：  **public** **static** **void** main(String[] args) {  System.out.print("Enter ten integers: ");  ArrayList<Integer> list = **new** ArrayList<>();  Scanner input = **new** Scanner(System.in);  **for** (**int** i = 0; i < 10; i++) {  list.add(input.nextInt());  }  removeDuplicate(list);    **for** (**int** i = 0; i < list.size(); i++)  System.out.print(list.get(i) + " ");  }  **public** **static** **void** removeDuplicate(ArrayList<Integer> list) {  ArrayList<Integer> temp = **new** ArrayList<Integer>();  **for** (**int** i = 0; i < list.size(); i++)  **if** (!temp.contains(list.get(i)))  temp.add(list.get(i));  list.clear();  **for** (**int** i = 0; i < temp.size(); i++)  list.add(temp.get(i));  }  11.15  代码：  **public** **static** **void** main(String[] args) {  Scanner input = **new** Scanner(System.in);  System.out.print("Enter the number of points: ");  **int** n = input.nextInt();  System.out.print("Enter the coordinates of the points: ");  ArrayList<Double> x = **new** ArrayList<>();  ArrayList<Double> y = **new** ArrayList<>();  **for** (**int** i = 0; i < n; i++) {  x.add(input.nextDouble());  y.add(input.nextDouble());  }    **double** total = 0;  **for** (**int** i = 1; i < n - 1; i++)  total += getArea(x.get(0), y.get(0), x.get(i), y.get(i), x.get(i + 1), y.get(i + 1));    System.out.print("The total area is " + total);  }    **public** **static** **double** getArea(**double** x1, **double** y1, **double** x2, **double** y2, **double** x3, **double** y3) {  **double** s1 = Math.sqrt((x1 - x2) \* (x1 - x2) + (y1 - y2) \* (y1 -y2));  **double** s2 = Math.sqrt((x1 - x3) \* (x1 - x3) + (y1 - y3) \* (y1 -y3));  **double** s3 = Math.sqrt((x3 - x2) \* (x3 - x2) + (y3 - y2) \* (y3 -y2));    **double** s = (s1 + s2 + s3) / 2;  **return** Math.sqrt(s \* (s - s1) \* (s - s2) \* (s - s3));  }  11.16  代码：  **public** **static** **void** main(String[] args) {  ArrayList<Integer> list = **new** ArrayList<Integer>();    **int** number1 = (**int**) (Math.random() \* 10);  **int** number2 = (**int**) (Math.random() \* 10);  // Create a Scanner  Scanner input = **new** Scanner(System.in);  System.out.print(  "What is " + number1 + " + " + number2 + "? ");  **int** answer = input.nextInt();  list.add(answer);    **while** (number1 + number2 != answer) {  System.out.print(  "Wrong. Try again. What is " + number1 + " + " + number2 + "? ");  answer = input.nextInt();    **if** (list.contains(answer)) {  System.out.println("You already entered " + answer);  }  **else** {  list.add(answer);  }  }    System.out.println("You got it!");  }  11.17  代码：  **public** **static** **void** main(String[] args) {  System.out.print("Enter an integer m: ");  Scanner input = **new** Scanner(System.in);  **int** m = input.nextInt();    ArrayList<Integer> list = **new** ArrayList<Integer>();  **int** number = m;  **int** factor = 2;  **while** (factor <= number) {  **if** (number % factor == 0) {  list.add(factor);  number = number / factor;  }  **else**  factor++;  }  **int** n = 1;  **int** i = 0;  **while** (i < list.size() - 1) {  **if** (list.get(i) != list.get(i + 1)) {  n \*= list.get(i);  i += 1;  }  **else**  i += 2;  }  **if** (i == list.size() - 1)  n \*= list.get(i);  System.out.println("The smallest number n for m \* n to be a perfect square is " + n);  System.out.println("m \* n is " + m \* n);  } |
| 调  试  过  程  及  实  验  结  果 |  |
| 总  结 |  |
| 附  录 |  |