面向对象程序设计Java实验指导书

实验三 面向对象编程基础

# 实验目的

* 掌握基本数据类型所对应的包装类使用
* 掌握String类的使用
* 掌握方法的定义与应用
* 掌握一维数组的应用

# 实验要求

* 按照下述要求编写Java代码
* 按要求回答相关问题
* 按时完成并上交实验报告

# 实验内容

|  |  |
| --- | --- |
|  | 在Eclipse的项目中新建一个包（package） ，命名为ch3，本实验编写的Java类均定义在ch3中  认真阅读下面的题目并编写程序完成预期的功能 |

## 1、Check password

Some websites impose certain rules for passwords. Write a method that checks whether a string is a valid password. Suppose the password rules are as follows:

■ A password must have at least eight characters.

■ A password consists of only letters and digits.

■ A password must contain at least two digits.

Write a program that prompts the user to enter a password and displays **Valid Password** if the rules are followed or **Invalid Password** otherwise.

## 2、Count the letters in a string

Write a method that counts the number of letters in a string using the following header:

***public static int countLetters(String s)***

Write a test program that prompts the user to enter a string and displays the number of letters in the string.

## 3、Decimal to binary

Write a method that parses a decimal number into a binary number as a string. The method header is:

***public static String decimalToBinary(int value)***

Write a test program that prompts the user to enter a decimal integer value and displays the corresponding binary value.

## 4、Count single digits

Write a program that generates 100 random integers between 0 and 9 and displays the count for each number. (Hint: Use (int)(Math.random() \* 10) to generate a random integer between 0 and 9. Use an array of ten integers, say counts, to store the counts for the number of 0s, 1s, ..., 9s.)