问答题（全部做答）

1.What are the dfferenre between"equals() and "=="?

2.What is Polymorphism in Object Oriented Programming? Please provide a program example that uses the concept of Polymorphism.

3.What are the advantages of encapsulation?

4.Please provide an program example that uses the concept of inheritance

5.Please provide usage examples for List and ArrayList

6.Please provide usage examples of Hastable and Map

7.Please provide usage example of Abstract Factory and Factory method

8.Please list down the J2EE design pattern that you are familiar with

9.What are the differences between Stateful and Stateless session beans? Please give usage example for each of them

10.Do you recommend the use of Entity bean? Why?

11.For MVC (Model,View,Controller).please list the major activities in each tier.

算法题（9选一做答）

1、Given a fraction reduce it to lowest terms. You may assume that the fraction is available as two digts one representing the numerator and the other one representing the denominator For example given the fraction 12/28. the answer would be 3/7.

2、Reed a decimal number, one character(digit) at a time(starting from the most significant digit),terminated by a blank and returned the value of that number.Number of digits are unknown.Your algorithm should work for inputs of any number of digits! Your output should be an integer variable.

3.Print out the binary equivalent of a number.Your input is an integer variable.

4.compute the greatest common divisor of three integers. Your input is three integers and your output is one integer. For example given 112,56 and 20，the answer would be 4.

5.Find the k-th largest element in a file of N elements where N is too large for all N elements to fit in main memory.For example if the N elements are 12,13,15,4,5,7 and 1.then the 5th (i.e.k=5) largest element is 12.

6.A string consisting of N characters contains a sentence where there is only one space between each word.This sentence is padded with blanks on the right.Insert extra blanks between the words so that when this string is printed,it is right-justified just like word processors.The maximum number of blanks between any two words should exceed the minimum number of blanks between any two words by at most one.For example consider the following string

“The quick brown fox jumps over the lazy dog"

After inserting blanks,the result would be

“The quick brown fox jumps over the lazy dog"

7、Given a plain text string,produce an algorithm to encode it.Assuming that several pairs of such strings and its encoded output are available for examination by a code breaker,your encoding should not be easily "breakable"

8、Generate random four-letter words(collections of letters)

9、Given a date which can be in any century,determine the day of the week that it falls on. For example 24-12-91 falls on Tuesday.Remember to take into account of leap year.

英文测试

现需发一封邮件给客户，就一些需求需求的讨论确定一个会议时间，我们这边在周三下午和周五早上有空。询问客户的空闲时间。（用英文做答）