

Exercises Four (Oct. 09): Selected Exercises.

Try to solve the Following Problems & submit all your programs to email program06@yeah.net before (including) Oct. 14.

(Notice: The last submitting date for Exercises 3 is delayed to Oct. 11.)

1. Write 4 overloading static methods to construct a String that compose a diamond:

```
public static String diamond ();  
public static String diamond (int n);  
public static String diamond (int n, char flash);  
public static String diamond (int n, char flash, char blank);  
System.out.print( diamond() ) will output as left below:
```

```
      *  
     ***  
    * * *  
   * * *  
  * * *  
 * * *  
* * *  
*****  
*****  
*****  
*****  
*** **  
** **  
* *  
*  

```

```
      *  
     ***  
    * * *  
   * * *  
  *****  
 *** **  
** **  
* *  
*  

```

System.out.print(diamond(5)) will output as right above.

System.out.print(diamond(7, '\$')) will output as left below:

```
      $  
     $$$  
    $ $ $  
   $ $ $  
  $ $ $  
 $ $ $ $ $ $ $ $ $ $ $  
 $ $ $ $ $ $ $ $ $ $ $  
 $ $ $ $ $ $ $  
 $ $ $ $ $ $  
 $ $ $ $  
 $ $  
 $  

```

```
.....@  
....@@@  
...@.@.  
..@.@.  
. @ . @ .  
@ @ @ @ @ @ @ @ @ @ @  
. @ @ @ . @ @ @  
.. @ @ . @ @  
... @ @ . @  
.... @ . @  
.....@  

```

System.out.print(diamond(6, '@', '.')) will output as right above.

2. Write a static methods that remove all the tabs (\t) in a String and substitute a tab with needed blanks.

```
public static String noTabs (String s, int tabPosition);
```

For example, noTabs("\tabcde\t1234\txyz\tABCDEFGHijklmn\tOK\n", 8) will return the String: ".abcde...1234....xyz.....ABCDEFGHijklmn..OK\n".

For clarity, using a . to present a blank.

And noTabs("\tabcde\t1234\txyz\tABCDEFGHijklmn\tOK\n", 4) will return the String: ". . . .abcde...1234....xyz.ABCDEFGHijklmn..OK\n".

3. (jhtp10, Exercise 5.29) ***"The Twelve Days of Christmas" Song.*** Write an application that uses repetition and switch statements to print the song "The Twelve Days of Christmas." One switch statement should be used to print the day ("first," "second," and so on). A separate switch statement should be used to print the remainder of each verse. Visit the website [en.wikipedia.org/wiki/The_Twelve_Days_of_Christmas_\(song\)](http://en.wikipedia.org/wiki/The_Twelve_Days_of_Christmas_(song)) for the lyrics of the song. (12DaysOfChristmas.txt attached)

Typical switch statement is something like:

```
switch (integreLExpression) { // integers, String, enum type
    case c1: // a constant
        ..
        break; // might be falling down
    case c2:
        ..
        break;
    ..
    case cn:
        ..
        break;
    default:
        ..
        break;
}
```

12DaysOfChristmas.txt

The Twelve Days of Christmas (12 Days of Christmas) - lyrics

On the first day of Christmas,
my true love sent to me
A partridge in a pear tree.

On the second day of Christmas,
my true love sent to me
Two turtle doves,
And a partridge in a pear tree.

On the third day of Christmas,
my true love sent to me
Three French hens,
Two turtle doves,
And a partridge in a pear tree.

On the fourth day of Christmas,
my true love sent to me
Four calling birds,
Three French hens,
Two turtle doves,
And a partridge in a pear tree.

On the fifth day of Christmas,
my true love sent to me
Five golden rings,
Four calling birds,
Three French hens,
Two turtle doves,
And a partridge in a pear tree.

On the sixth day of Christmas,
my true love sent to me
Six geese a-laying,
Five golden rings,
Four calling birds,
Three French hens,
Two turtle doves,
And a partridge in a pear tree.

On the seventh day of Christmas,
my true love sent to me
Seven swans a-swimming,
Six geese a-laying,
Five golden rings,
Four calling birds,
Three French hens,
Two turtle doves,
And a partridge in a pear tree.

On the eighth day of Christmas,
my true love sent to me
Eight maids a-milking,
Seven swans a-swimming,
Six geese a-laying,

Five golden rings,
Four calling birds,
Three French hens,
Two turtle doves,
And a partridge in a pear tree.

On the ninth day of Christmas,
my true love sent to me
Nine ladies dancing,
Eight maids a-milking,
Seven swans a-swimming,
Six geese a-laying,
Five golden rings,
Four calling birds,
Three French hens,
Two turtle doves,
And a partridge in a pear tree.

On the tenth day of Christmas,
my true love sent to me
Ten lords a-leaping,
Nine ladies dancing,
Eight maids a-milking,
Seven swans a-swimming,
Six geese a-laying,
Five golden rings,
Four calling birds,
Three French hens,
Two turtle doves,
And a partridge in a pear tree.

On the eleventh day of Christmas,
my true love sent to me
Eleven pipers piping,
Ten lords a-leaping,
Nine ladies dancing,
Eight maids a-milking,
Seven swans a-swimming,
Six geese a-laying,
Five golden rings,
Four calling birds,
Three French hens,
Two turtle doves,
And a partridge in a pear tree.

On the twelfth day of Christmas,
my true love sent to me
Twelve drummers drumming,
Eleven pipers piping,
Ten lords a-leaping,
Nine ladies dancing,
Eight maids a-milking,
Seven swans a-swimming,
Six geese a-laying,
Five golden rings,
Four calling birds,
Three French hens,
Two turtle doves,
And a partridge in a pear tree!

The Twelve Days of Christmas (12 Days of Christmas) - lyrics