

Basis of Computer Programming (java)

Lab Exercise 8

[Experimental Objective]

1. Learn how to define static methods
2. Learn how to call static methods
3. Learn how to use the methods overloading

[Exercises]

1. Simulate the Math class, define a Count class, and define static methods of sum, the sum method can sum up two values, three values, four values and five values(just need to int values). Define static product methods, which can multiply two to five values as the sum method(just need the double values). In the TestCount method, do not initialize any Count object, and use methods defined in Count class to do operation.
2. Write a static method that display a solid square(the same number of rows and columns) of a token you pass to the method, which is char type, and the side is specified in integer parameter side.
3. Define a class Rectangle, use method overloading to define static methods display, if you pass two arguments, an integer and an char, it will a solid square(the same number of rows and columns) of the token you pass to the method. If you pass three arguments(int, int, char) it will the first argument as the width, second argument as the length, and third argument as the token for the rectangle content. In the TestRectangle class, do not initialize the Rectangle class, just use the static method to display pattern.
4. Write a Display class, and define static methods to display a triangle, if you just pass one integer to the method, it will display the lines according to that integer, first line all "1"s, second line all "2"s, third line all "3"s, and so on. And if you pass two arguments to the method, it will also display that many line according to the first argument, display contents are the second argument.

```
public static void main(String[] args) {  
    Display.triangle(4, '*');  
    Display.triangle(4);  
}  
  
    *           1  
   ***        222  
  *****    33333  
 *****    4444444
```

5. Define a class Game, and define a static method play(). Use method overloading defines 3 static methods playGame(), if you pass one value to

playGame() method, it will requires you to find its square; if you pass two values to the playGame() method, it will requires you to find their product; if you pass three values to the playGame() method, it will require you to do the sum up of those numbers. All the values you will pass to the method playGame() are randomly generate, and it all ranges from 1-9(includes 9). Within the play() method is a switch, use random to generate an integer 1-3 as the case condition to locate which playGame() method you will call. All the playGame() method required your correct answer to terminate and output "Congratulations" to you, once you hit the correct answer, or you need to input again and again. Creat a TestGame class to play it.

[Assignment]

Question 3,4,5 will be the assignment for this week.