BJP4 Exercise 12.11: repeat

Language/Type: Java recursion recursive programming
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Write a recursive method `repeat` that accepts a string *s* and an integer *n* as parameters and that returns a `String` consisting of *n* copies of *s*. For example:

Call	Value Returned
`repeat("hello", 3)`	`"hellohellohello"`
`repeat("this is fun", 1)`	`"this is fun"`
`repeat("wow", 0)`	`""`
`repeat("hi ho! ", 5)`	`"hi ho! hi ho! hi ho! hi ho! hi ho! "`

You should solve this problem by concatenating `String` objects using the + operator. `String` concatenation is an expensive operation, so it is best to minimize the number of concatenation operations you perform. For example, for the call `repeat("foo", 500)`, it would be inefficient to perform 500 different concatenation operations to obtain the result. Most of the credit will be awarded on the correctness of your solution independent of efficiency. The remaining credit will be awarded based on your ability to minimize the number of concatenation operations performed.

Your method should throw an `IllegalArgumentException` if passed any negative value for *n*. You are not allowed to construct any structured objects other than `String`s (no array, `List`, `Scanner`, etc.) and you may not use any loops to solve this problem; you must use recursion.

Type your solution here:

```
1  //Name: Jason Xu
2  public String repeat(String s, int n){
3      if(n==0){
4          return "";
5      }
6      if(n==1){
7          return s;
8      }
9      if(n<0){
10         throw new IllegalArgumentException();
11     }
12     return s+repeat(s,n-1);
13
```

This is a **method problem.** Write a Java method as described. Do not write a complete program or class; just the method(s) above.

4 Indent

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Go to the next problem: isReverse

test #1:	`repeat("hello", 3)`
return:	`"hellohellohello"`
result:	pass
test #2:	`repeat("this is fun", 1)`
return:	`"this is fun"`
result:	pass
test #3:	`repeat("wow", 0)`
return:	`""`
result:	pass
test #4:	`repeat("hi ho! ", 5)`
return:	`"hi ho! hi ho! hi ho! hi ho! hi ho! "`
result:	pass
test #5:	`repeat("ERROR", -1)`
exp. exception:	`IllegalArgumentException`
your exception:	`IllegalArgumentException` on line **10**
stack trace:	`IllegalArgumentException` `repeat, line 10`

result: pass

If you do not understand how to solve a problem or why your solution doesn't work, please contact your TA or instructor.
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