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○ BJP4 Exercise 12.19: countBinary ☆ Favorite

Language/Type: Java recursion recursive backtracking
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Write a method `countBinary` that accepts an integer n as a parameter and that prints all binary numbers that have n digits in ascending order, printing each value on a separate line. All n digits should be shown for all numbers, including leading zeros if necessary. You may assume that n is non-negative. If n is 0, a blank line of output should be produced. Do not use a loop in your solution; implement it recursively.

Call	Output
`countBinary(1);`	0 1
`countBinary(2);`	00 01 10 11
`countBinary(3);`	000 001 010 011 100 101 110 111

Hint: It may help to define a private helper method that accepts different parameters than the original method. In particular, consider building up a set of characters as a String for eventual printing.

Type your solution here:

```java
public void countBinary(int x) {
    String num = "";
    countBinary(x, num);
}

public void countBinary(int x, String num) {
    if(x==0) {
        System.out.println(num);
        return;
    }

    countBinary(x-1, num+"0");
    countBinary(x-1, num+"1");
}
```

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: subsets

test #1: `countBinary(1);`

console output:

```
0
1
```

result: ✓ pass

test #2: `countBinary(2);`

console output:

```
00
01
10
11
```

result: ✓ pass

test #3: `countBinary(3);`

console output:

```
000
001
010
011
100
101
110
111
```

result: ✓ pass

test #4: `countBinary(5);`

console output:

```
00000
00001
00010
00011
00100
00101
00110
00111
01000
01001
01010
01011
01100
01101
01110
01111
10000
10001
10010
10011
10100
10101
10110
10111
11000
11001
11010
11011
11100
11101
11110
11111
```

result: ✓ pass

test #5: `countBinary(4);`

console output:

```
0000
0001
0010
0011
0100
0101
0110
0111
1000
1001
1010
1011
1100
1101
1110
```

```
1111
```

result: ✓ pass

test #6: `countBinary(0);`

console output:

result: ✓ pass

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