

CS239

Nathan Sprague

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Recursive String Method

```
1    /** Returns the first character in the string s. */
2    public static String first(String s)
3    {
4        return s.substring(0, 1);
5    }
6
7    /** Returns all characters after the first character in s.
8     * (" " is returned if s has just one character.) */
9    public static String rest(String s)
10   {
11       return s.substring(1, s.length());
12   }
13
14   public static String recurse(String s)
15   {
16       String result;
17       if (s.length() == 0)
18           result = " ";
19       else
20           result = recurse(rest(s)) + first(s);
21       return result;
22   }
```

Clicker Question

What is returned when `recurse("trap")` is called?

- 1 ""
- 2 "trap"
- 3 "part"
- 4 "tttt"
- 5 "pppp"

Clicker Question

How many activation records are created as a result of the call to `recurse("trap")`?

- 1
- 4
- 5
- 10

Another Recursive Method

```
1 public static int fun(int n)
2 {
3     if (n <= 1)
4         return n;
5     else
6         return fun(n - 1) + fun(n - 2);
7 }
```

Clicker Question

What is returned when `fun(4)` is called?

- 1
- 3
- 5
- 9

Clicker Question

How many activation records are created as a result of the call to `fun(4)`?

- 1
- 5
- 9
- 13