

+ **Worked Example 4.2**

Extracting Initials

Your task is to write a program that asks for your name and that of your significant other. It then forms a string with your initials joined by an ampersand, such as R&S.

The pseudocode is straightforward:

Read the first name into a string variable first.

Read the second name into a string variable second.

Form a string called initials, consisting of the first character in first, the & character, and the first character in second.

Print the initials string.

To read a name, we prompt the user and then call an appropriate method on a Scanner object:

```
Scanner in = new Scanner(System.in);
System.out.print("Enter your first name: ");
String first = in.____;
```

In order to read a string, you can call `next` or `nextLine`. You call `next` if you know that the input consists of a single word without spaces. But suppose the input is Mary Lou, with a space. If you call `next`, then only Mary is read, and the string Lou will be read as the second name, which is not what should happen, since Mary Lou would want her first letter, M, to be joined with the first letter of her significant other's name, not that of her second name. Therefore, `nextLine` is the appropriate method to call.

Next, we need to find out how to obtain the first letter of a string. The operation `first.substring(0, 1)` makes a string consisting of one character, taken from the start of `first`.

The call `second.substring(0, 1)` does the same for the second name. Finally, we need to concatenate the resulting one-character strings with the string literal "&" to get a string of length 3, the initials string.

```
String initials = first.substring(0, 1) + "&" + second.substring(0, 1);
```

The following figure shows the process:

first =	R	o	d	o	l	f	o
	0	1	2	3	4	5	6
second =	S	a	l	l	y		
	0	1	2	3	4		
initials =	R	&	S				
	0	1	2				



Here is the complete program:

ch04/initials/Initials.java

```
1 import java.util.Scanner;
2
3 public class Initials
4 {
5     public static void main(String[] args)
6     {
7         Scanner in = new Scanner(System.in);
8         System.out.print("Enter your first name: ");
9         String first = in.nextLine();
10        System.out.print("Enter your significant other's first name: ");
11        String second = in.nextLine();
12        String initials = first.substring(0, 1)
13            + "&" + second.substring(0, 1);
14        System.out.println(initials);
15    }
16 }
```

Program Run

```
Enter your first name: Rodolfo
Enter your significant other's first name: Sally
R&S
```