

An Example

- Write a program segment that reads a sequence of integers until a 0 is encountered, and computes and outputs the sum of the numbers read.

```
Scanner in = new Scanner(System.in);
int sum = 0;
int i = in.nextInt();
while (i != 0)
{
    sum = sum + i;
    i = in.nextInt();
}
System.out.println("The sum is " + sum);
```

Your Turn

- Write a program segment that reads a sequence of integers until a 0 is encountered, and counts and outputs the number of even and the number of odd numbers read (not including the final 0).

Count Odd/Even

```
Scanner in = new Scanner(System.in);
int countEven = 0, countOdd = 0;
int i = in.nextInt();
while (i != 0)
{
    if ((i % 2) == 0) // i is even
    {
        countEven = countEven + 1;
    }
    else // i is odd
    {
        countOdd = countOdd + 1;
    }
    i = in.nextInt();
}
System.out.println("Read " + countEven +
    " even numbers, and " +
    countOdd + " odd numbers");
```

Your Turn, Again

- Write a program segment that given a String variable *str* and a character variable *ch*, counts and outputs the number of occurrences of character *ch* in String *str*.

Count Character

```
int index = 0, count = 0;
while (index < str.length())
{
    if (str.charAt(index) == ch) // found it!
    {
        count = count + 1;
    }
    index = index + 1; // go to the next char
}
System.out.println("'" + ch + "' occurs " +
                    count + " times in \"" +
                    str + "\"");
```

Your Turn, One More Time

- Write a program segment that given two integer variables, *width* and *height*, outputs a rectangle of '+'s of the given width and height.
- Start by solving a simpler problem: given integer variable *width*, output *width* '+'s on one line.

Output One Row Of '+'s

```
int col = 0;
while (col < width)
{
    System.out.print('+');
    col = col + 1;
}
System.out.println();
```

- How are we going to output *height* rows of *width* columns of '+'? In other words, how do we repeat the code above *height* times?

Output A Rectangle Of '+'s

```
int row = 0;
while (row < height)
{
    int col = 0;
    while (col < width)
    {
        System.out.print('+');
        col = col + 1;
    }
    System.out.println();
    row = row + 1;
}
```