Common pattern/tool: Accumulator loops

```java
int sum = 0; // initialize these OUTSIDE loop
int count = 0;
int biggest = -1;
for (int i = 1; i <= 1000; i++) {
    sum = sum + i; // update each of these INSIDE loop
    count++;
    if (i > biggest) { // unlike sum and count, we only update biggest
        biggest = examscore; // some of the time (i.e., when we see a number
    } // that is bigger than previous biggest
}
double average = sum/count;
println("The sum is " + sum);
```

- **Accumulator variable**: A variable that keeps some progress and is updated repeatedly until loop is finished.
  - The sum in the above code is a cumulative sum.
  - Accumulator variables **must be declared outside** the loops that update them, so that they will still exist after the loop.