

# Pseudocode examples

CSCI 150, Fall 2003

## *Counting up*

Read number  $n$  and print the integers counting up to  $n$ .

```
Read  $n$ .
Initialize  $i$  to 1.
while  $i \leq n$ , do:
    Write  $i$ .
    Increment  $i$ .
end while
Stop.
```

## *Power of two*

Read number  $n$  and print  $2^n$ .

```
Read  $n$ .
Initialize  $power$  to 1.
repeat  $n$  times:
    Double  $power$ .
end repeat
Write  $power$ .
Stop.
```

## *Summing consecutive integers*

Read number  $n$  and print the sum of the integers up to  $n$ ,

$$1 + 2 + \cdots + n .$$

```
Read  $n$ .
Initialize  $i$  to 1.
while  $i \leq n$ , do:
    Increase  $sum$  by  $i$ .
    Increment  $i$ .
end while
Write  $sum$ .
Stop.
```

## *Multiplication*

Read numbers  $m$  and  $n$  and print  $m \cdot n$ .

```
Read  $m$ .
Read  $n$ .
Initialize  $sum$  to 0.
repeat  $n$  times:
    Increase  $sum$  by  $m$ .
end repeat
Print  $sum$ .
Stop.
```

## *Fibonacci sequence*

Read number  $n$  and print the first  $n$  numbers in Fibonacci sequence. The Fibonacci sequence,

$$\langle 1, 1, 2, 3, 5, 8, 13, \dots \rangle ,$$

begins with two 1's, and each successive number is the sum of the preceding two numbers (e.g.,  $13 = 5 + 8$ ).

```
Read  $n$ .
Initialize  $a$  to 1.
Initialize  $b$  to 1.
repeat  $n$  times:
    if  $a > b$ , then:
        Increase  $b$  by  $a$ .
        Write  $b$ .
    else:
        Increase  $a$  by  $b$ .
        Write  $a$ .
    end if
end repeat
Stop.
```