

# CS-377 Parallel Programming

## Textbook Ch. 2 Exercises

Eliot Cowley

February 15, 2015

2. Construct a scenario for Algorithm 2.9 in which the final value of  $n$  is 10.  
See attached page.
3. Construct a scenario for Algorithm 2.9 in which the final value of  $n$  is 2.  
See attached page.
4. For positive values of  $K$ , what are the possible final values of  $n$  in the following algorithm?  
 $-K, 0, K$ .

Process	n Value	p.temp Value	q.temp Value
p1	n = 0	p.temp;	q.temp;
q1	n = 0;	p.temp;	q.temp;
p2	n = 0;	p.temp = 0;	q.temp;
q2	n = 0;	p.temp = 0;	q.temp = 0;
p3	n = 1;	p.temp = 0;	q.temp = 0;
p2	n = 1;	p.temp = 1;	q.temp = 0;
p3	n = 2;	p.temp = 1;	q.temp = 0;
p2	n = 2;	p.temp = 2;	q.temp = 0;
p3	n = 3;	p.temp = 2;	q.temp = 0;
p2	n = 3;	p.temp = 3;	q.temp = 0;
p3	n = 4;	p.temp = 3;	q.temp = 0;
p2	n = 4;	p.temp = 4;	q.temp = 0;
p3	n = 5;	p.temp = 4;	q.temp = 0;
p2	n = 5;	p.temp = 5;	q.temp = 0;
p3	n = 6;	p.temp = 5;	q.temp = 0;
p2	n = 6;	p.temp = 6;	q.temp = 0;
p3	n = 7;	p.temp = 6;	q.temp = 0;
p2	n = 7;	p.temp = 7;	q.temp = 0;
p3	n = 8;	p.temp = 7;	q.temp = 0;
p2	n = 8;	p.temp = 8;	q.temp = 0;
p3	n = 9;	p.temp = 8;	q.temp = 0;
p2	n = 9;	p.temp = 9;	q.temp = 0;
p3	n = 10;	p.temp = 9;	q.temp = 0;
q3	n = 1;	p.temp = 9;	q.temp = 0;
q2	n = 1;	p.temp = 9;	q.temp = 1;
q3	n = 2;	p.temp = 9;	q.temp = 1;
q2	n = 2;	p.temp = 9;	q.temp = 2;
q3	n = 3;	p.temp = 9;	q.temp = 2;
q2	n = 3;	p.temp = 9;	q.temp = 3;
q3	n = 4;	p.temp = 9;	q.temp = 3;
q2	n = 4;	p.temp = 9;	q.temp = 4;
q3	n = 5;	p.temp = 9;	q.temp = 4;
q2	n = 5;	p.temp = 9;	q.temp = 5;
q3	n = 6;	p.temp = 9;	q.temp = 5;
q2	n = 6;	p.temp = 9;	q.temp = 6;
q3	n = 7;	p.temp = 9;	q.temp = 6;
q2	n = 7;	p.temp = 9;	q.temp = 7;
q3	n = 8;	p.temp = 9;	q.temp = 7;
q2	n = 8;	p.temp = 9;	q.temp = 8;
q3	n = 9;	p.temp = 9;	q.temp = 8;
q2	n = 9;	p.temp = 9;	q.temp = 9;
q3	n = 10;	p.temp = 9;	q.temp = 9;

Table 1: Exercise 2.

Process	n	Value	p.temp	Value	q.temp	Value
p1	n = 0		p.temp;		q.temp;	
q1	n = 0		p.temp;		q.temp;	
p2	n = 0		p.temp = 0		q.temp;	
q2	n = 0		p.temp = 0		q.temp = 0	
p3	n = 1		p.temp = 0		q.temp = 0	
p2	n = 1		p.temp = 1		q.temp = 0	
p3	n = 2		p.temp = 1		q.temp = 0	
p2	n = 2		p.temp = 2		q.temp = 0	
p3	n = 3		p.temp = 2		q.temp = 0	
p2	n = 3		p.temp = 3		q.temp = 0	
p3	n = 4		p.temp = 3		q.temp = 0	
p2	n = 4		p.temp = 4		q.temp = 0	
p3	n = 5		p.temp = 4		q.temp = 0	
p2	n = 5		p.temp = 5		q.temp = 0	
p3	n = 6		p.temp = 5		q.temp = 0	
p2	n = 6		p.temp = 6		q.temp = 0	
p3	n = 7		p.temp = 6		q.temp = 0	
p2	n = 7		p.temp = 7		q.temp = 0	
p3	n = 8		p.temp = 7		q.temp = 0	
p2	n = 8		p.temp = 8		q.temp = 0	
p3	n = 9		p.temp = 8		q.temp = 0	
q3	n = 1		p.temp = 8		q.temp = 0	
p2	n = 1		p.temp = 1		q.temp = 0	
q2	n = 1		p.temp = 1		q.temp = 1	
q3	n = 2		p.temp = 1		q.temp = 1	
q2	n = 2		p.temp = 1		q.temp = 2	
q3	n = 3		p.temp = 1		q.temp = 2	
q2	n = 3		p.temp = 1		q.temp = 3	
q3	n = 4		p.temp = 1		q.temp = 3	
q2	n = 4		p.temp = 1		q.temp = 4	
q3	n = 5		p.temp = 1		q.temp = 4	
q2	n = 5		p.temp = 1		q.temp = 5	
q3	n = 6		p.temp = 1		q.temp = 5	
q2	n = 6		p.temp = 1		q.temp = 6	
q3	n = 7		p.temp = 1		q.temp = 6	
q2	n = 7		p.temp = 1		q.temp = 7	
q3	n = 8		p.temp = 1		q.temp = 7	
q2	n = 8		p.temp = 1		q.temp = 8	
q3	n = 9		p.temp = 1		q.temp = 8	
q2	n = 9		p.temp = 1		q.temp = 9	
q3	n = 10		p.temp = 1		q.temp = 9	
p3	n = 2		p.temp = 1		q.temp = 9	

Table 2: Exercise 3.