Slide 1

Banker's Algorithm example

- When a request is made
  - pretend you granted it
  - pretend all other legal requests were made
  - can the graph be reduced?
    - if so, allocate the requested resource
    - if not, block the thread

1/30/2004 © 2004 Ed Lazowska & Hank Levy 1

Slide 2

1. I request a pot

Pots

Me You

Max:
1 pot
2 pans

Max:
2 pots
1 pan

Pans

1/30/2004 © 2004 Ed Lazowska & Hank Levy 2

Slide 3

Allocation is OK; there is a way for me to complete, and then you can complete

Pots

Me You

Max:
1 pot
2 pans

Max:
2 pots
1 pan

Pans

1/30/2004 © 2004 Ed Lazowska & Hank Levy 3

Slide 4

2. You request a pot

Pots

Me You

Max:
1 pot
2 pans

Max:
2 pots
1 pan

Pans

1/30/2004 © 2004 Ed Lazowska & Hank Levy 4

Slide 5

Allocation is OK; there is a way for me to complete, and then you can complete

Pots

Me You

Max:
1 pot
2 pans

Max:
2 pots
1 pan

Pans

1/30/2004 © 2004 Ed Lazowska & Hank Levy 5

Slide 6

3a. You request a pan

Pots

Me You

Max:
1 pot
2 pans

Max:
2 pots
1 pan

Pans

1/30/2004 © 2004 Ed Lazowska & Hank Levy 6

1

NO! Both of us might be unable to complete!

Me — Max: 1 pot, 2 pans

You — Max: 2 pots, 1 pan

Pots, Pans

1/30/2004 © 2004 Ed Lazowska & Hank Levy 7

3b. I request a pan

Me — Max: 1 pot, 2 pans

You — Max: 2 pots, 1 pan

Pots, Pans

1/30/2004 © 2004 Ed Lazowska & Hank Levy 8

Allocation is OK; there is a way for me to complete, and then you can complete

Me — Max: 1 pot, 2 pans

You — Max: 2 pots, 1 pan

Pots, Pans

1/30/2004 © 2004 Ed Lazowska & Hank Levy 9

2