

ΛΕΙΤΟΥΡΓΙΚΑ ΣΥΣΤΗΜΑΤΑ

ΕΡΓΑΣΙΑ 3η

Η εργασία είναι υλοποιημένη με $N + 1$ σηματοφόρους , ένας για τον πατέρα και n για τα παιδιά.
Ο πατέρας κάνει N down τον εαυτό του, γράφει στην κοινή μνήμη και κάνει up στον σηματοφόρο των παιδιών.

Τα παιδιά (το καθένα ξεχωριστά) κάνουν down τον εαυτό τους , διαβάζουν από την κοινή μνήμη και κάνουν 1 up για τον πατέρα.

Η κοινή μνήμη περιέχει έναν int και το timeval struct για την χρονοσφραγίδα.

Πρώτο όρισμα είναι ο αριθμός των διεργασιών και δεύτερο όρισμα το πλήθος των ακεραίων στον πίνακα που δημιουργεί ο πατέρας.

Η τελευταία μόνο διαδικασία(σύμφωνα με την εκφώνηση) δημιουργεί το ζητούμενο αρχείο.

Οι δομές της μνήμης αποδεσμεύονται πλήρως και οι σηματοφόροι διαγράφονται από το σύστημα στο τέλος του προγράμματος.

Παρατηρούμε οτι η αύξηση στο πλήθος των διεργασιων/ ακεραίων αυξάνει το μέσο χρόνο καθυστέρησης.

Μερικές ενδεικτικές εκτελέσεις:

./feeder 3 10

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feeder writes 387062855
child 7582 read 387062855
child 7580 read 387062855
child 7581 read 387062855
feeder writes 2129229259
child 7582 read 2129229259
child 7581 read 2129229259
child 7580 read 2129229259
feeder writes 1629550900
child 7581 read 1629550900
child 7580 read 1629550900
child 7582 read 1629550900
feeder writes 1358604155
child 7580 read 1358604155
child 7581 read 1358604155
child 7582 read 1358604155
feeder writes 1819866289
child 7582 read 1819866289
child 7580 read 1819866289
child 7581 read 1819866289
feeder writes 257138302
child 7582 read 257138302
child 7581 read 257138302
child 7580 read 257138302
feeder writes 1736433428
child 7580 read 1736433428
child 7581 read 1736433428
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child 7582 read 1736433428
feeder writes 806659575
child 7582 read 806659575
child 7580 read 806659575
child 7581 read 806659575
feeder writes 1901077342
child 7580 read 1901077342
child 7581 read 1901077342
child 7582 read 1901077342
feeder writes 1820028772
child 7580 read 1820028772
child 7581 read 1820028772
child 7582 read 1820028772
AVERAGE TIME = 0.000029

./feeder 50 4000 (ένα κομμάτι της εκτέλεσης)

feeder writes 618392914
child 7690 read 618392914
child 7691 read 618392914
child 7692 read 618392914
child 7693 read 618392914
child 7695 read 618392914
child 7694 read 618392914
child 7696 read 618392914
child 7697 read 618392914
child 7698 read 618392914
child 7689 read 618392914
child 7700 read 618392914
child 7701 read 618392914
child 7699 read 618392914
child 7702 read 618392914
child 7705 read 618392914
child 7704 read 618392914
child 7703 read 618392914
child 7709 read 618392914
child 7707 read 618392914
child 7710 read 618392914
child 7713 read 618392914
child 7715 read 618392914
child 7708 read 618392914
child 7714 read 618392914
child 7706 read 618392914
child 7712 read 618392914
child 7716 read 618392914
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child 7711 read 618392914
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child 7723 read 618392914
child 7725 read 618392914
child 7719 read 618392914

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child 7726 read 618392914
child 7738 read 618392914
child 7724 read 618392914
child 7733 read 618392914
child 7722 read 618392914
child 7727 read 618392914
child 7718 read 618392914
child 7728 read 618392914
child 7730 read 618392914
child 7731 read 618392914
child 7732 read 618392914
child 7734 read 618392914
child 7735 read 618392914
child 7736 read 618392914
child 7737 read 618392914
feeder writes 1712906307
child 7689 read 1712906307
child 7690 read 1712906307
child 7691 read 1712906307
child 7692 read 1712906307
child 7693 read 1712906307
child 7694 read 1712906307
child 7695 read 1712906307
child 7696 read 1712906307
child 7697 read 1712906307
child 7698 read 1712906307
child 7699 read 1712906307
child 7700 read 1712906307
child 7701 read 1712906307
child 7702 read 1712906307
child 7703 read 1712906307
child 7704 read 1712906307
child 7706 read 1712906307
child 7707 read 1712906307
child 7705 read 1712906307
child 7709 read 1712906307
child 7711 read 1712906307
child 7708 read 1712906307
child 7713 read 1712906307
child 7712 read 1712906307
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child 7737 read 1712906307
child 7733 read 1712906307
child 7729 read 1712906307
child 7735 read 1712906307
child 7738 read 1712906307
child 7736 read 1712906307
feeder writes 161287967
child 7689 read 161287967
child 7690 read 161287967
child 7693 read 161287967
child 7694 read 161287967
child 7691 read 161287967
child 7695 read 161287967
child 7698 read 161287967
child 7697 read 161287967
child 7696 read 161287967
child 7700 read 161287967
child 7699 read 161287967
child 7701 read 161287967
child 7692 read 161287967
child 7704 read 161287967
child 7705 read 161287967
child 7703 read 161287967
child 7707 read 161287967
child 7710 read 161287967
child 7708 read 161287967
child 7712 read 161287967
child 7706 read 161287967
child 7709 read 161287967
child 7713 read 161287967
child 7714 read 161287967
child 7715 read 161287967
child 7702 read 161287967
child 7711 read 161287967
child 7716 read 161287967
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child 7736 read 161287967
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child 7729 read 161287967
child 7735 read 161287967
child 7733 read 161287967
child 7731 read 161287967
feeder writes 1288004230
child 7689 read 1288004230
child 7690 read 1288004230
child 7692 read 1288004230
child 7691 read 1288004230
child 7695 read 1288004230
child 7694 read 1288004230
child 7700 read 1288004230
child 7704 read 1288004230
child 7710 read 1288004230
child 7713 read 1288004230
child 7714 read 1288004230
child 7715 read 1288004230
child 7709 read 1288004230
child 7705 read 1288004230
child 7696 read 1288004230
child 7703 read 1288004230
child 7706 read 1288004230
child 7711 read 1288004230
child 7707 read 1288004230
child 7720 read 1288004230
child 7722 read 1288004230
child 7728 read 1288004230
child 7731 read 1288004230
child 7733 read 1288004230
child 7737 read 1288004230
child 7717 read 1288004230
child 7719 read 1288004230
child 7735 read 1288004230
child 7697 read 1288004230
child 7699 read 1288004230
child 7718 read 1288004230
child 7702 read 1288004230
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child 7698 read 1288004230
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child 7701 read 1288004230
child 7712 read 1288004230
child 7693 read 1288004230
child 7723 read 1288004230
child 7734 read 1288004230
child 7736 read 1288004230
AVERAGE TIME = 0.037723

./feeder 67 5000

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AVERAGE TIME = 0.015630