Report

All code is presented in main.py

The program with optimistic lock works faster

The output of the code is following:

=== Distributed map ===
Distributed map entries:
Key 0: Value 0
Key 1: Value 1
Key 2: Value 2
Key 3: Value 3
Key 4: Value 4

=== Without locks ===
Final value: 11408

=== Pessimistic lock ===
Final value: 30000
Execution time: 1547.15 seconds

=== Optimistic lock ===
Final value: 30000
Execution time: 608.72 seconds

=== Bounded queue ===
Writer: added 1
Reader 1: got 1
Reader 2: got 2
Writer: added 2
Reader 1: got 3
Writer: added 3
Reader 2: got 4
Writer: added 4
Reader 1: got 5
Writer: added 5
Reader 2: got 6
Writer: added 6
Reader 1: got 7
Writer: added 7
Writer: added 8
Reader 2: got 8
Writer: added 9
Reader 1: got 9

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Reader 2: got 10
Writer: added 10
Reader 1: got 11
Writer: added 11
Reader 2: got 12
Writer: added 12
Reader 1: got 13
Writer: added 13
Reader 2: got 14
Writer: added 14
Reader 1: got 15
Writer: added 15
Reader 2: got 16
Writer: added 16
Reader 1: got 17
Writer: added 17
Reader 2: got 18
Writer: added 18
Reader 1: got 19
Writer: added 19
Reader 2: got 20
Writer: added 20
Reader 1: got 21
Writer: added 21
Reader 2: got 22
Writer: added 22
Reader 1: got 23
Writer: added 23
Reader 2: got 24
Writer: added 24
Reader 1: got 25
Writer: added 25
Writer: added 26
Reader 2: got 26
Reader 1: got 27
Writer: added 27
Reader 2: got 28
Writer: added 28
Reader 1: got 29
Writer: added 29
Reader 2: got 30
Writer: added 30
Reader 1: got 31
Writer: added 31
Reader 2: got 32
Writer: added 32
Writer: added 33
Reader 1: got 33
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Reader 2: got 34
Writer: added 34
Reader 1: got 35
Writer: added 35
Reader 2: got 36
Writer: added 36
Reader 1: got 37
Writer: added 37
Reader 2: got 38
Writer: added 38
Reader 1: got 39
Writer: added 39
Reader 2: got 40
Writer: added 40
Reader 1: got 41
Writer: added 41
Reader 2: got 42
Writer: added 42
Reader 1: got 43
Writer: added 43
Reader 2: got 44
Writer: added 44
Reader 1: got 45
Writer: added 45
Reader 2: got 46
Writer: added 46
Reader 1: got 47
Writer: added 47
Reader 2: got 48
Writer: added 48
Reader 1: got 49
Writer: added 49
Reader 2: got 50
Writer: added 50
Reader 1: got 51
Writer: added 51
Reader 2: got 52
Writer: added 52
Reader 1: got 53
Writer: added 53
Reader 2: got 54
Writer: added 54
Reader 1: got 55
Writer: added 55
Reader 2: got 56
Writer: added 56
Reader 1: got 57
Writer: added 57

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Reader 2: got 58
Writer: added 58
Reader 1: got 59
Writer: added 59
Reader 2: got 60
Writer: added 60
Reader 1: got 61
Writer: added 61
Reader 2: got 62
Writer: added 62
Reader 1: got 63
Writer: added 63
Reader 2: got 64
Writer: added 64
Reader 1: got 65
Writer: added 65
Reader 2: got 66
Writer: added 66
Reader 1: got 67
Writer: added 67
Reader 2: got 68
Writer: added 68
Reader 1: got 69
Writer: added 69
Reader 2: got 70
Writer: added 70
Reader 1: got 71
Writer: added 71
Reader 2: got 72
Writer: added 72
Reader 1: got 73
Writer: added 73
Reader 2: got 74
Writer: added 74
Reader 1: got 75
Writer: added 75
Writer: added 76
Reader 2: got 76
Reader 1: got 77
Writer: added 77
Reader 2: got 78
Writer: added 78
Reader 1: got 79
Writer: added 79
Reader 2: got 80
Writer: added 80
Reader 1: got 81
Writer: added 81
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Writer: added 82
Reader 2: got 82
Reader 1: got 83
Writer: added 83
Writer: added 84
Reader 2: got 84
Writer: added 85
Reader 1: got 85
Reader 2: got 86
Writer: added 86
Reader 1: got 87
Writer: added 87
Reader 2: got 88
Writer: added 88
Reader 1: got 89
Writer: added 89
Writer: added 90
Reader 2: got 90
Reader 1: got 91
Writer: added 91
Reader 2: got 92
Writer: added 92
Reader 1: got 93
Writer: added 93
Writer: added 94
Reader 2: got 94
Reader 1: got 95
Writer: added 95
Reader 2: got 96
Writer: added 96
Reader 1: got 97
Writer: added 97
Reader 2: got 98
Writer: added 98
Reader 1: got 99
Writer: added 99
Reader 2: got 100
Writer: added 100