

Our Solution(s)

Run Code

Solution 1Solution 2Solution 3

1

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2

3

# O(n) time | O(1) space

4

def getNthFib(n):

5

lastTwo = [0, 1]

6

counter = 3

7

while counter <= n:

8

nextFib = lastTwo[0] + lastTwo[1]

9

lastTwo[0] = lastTwo[1]

10

lastTwo[1] = nextFib

11

counter += 1

12

return lastTwo[1] if n > 1 else lastTwo[0]

13

Our Tests

1

def test\_getNthFib():

2

assert getNthFib(1) == 0

3

assert getNthFib(2) == 1

4

assert getNthFib(3) == 1

5

assert getNthFib(4) == 2

6

assert getNthFib(5) == 3

7

assert getNthFib(6) == 5

8

assert getNthFib(7) == 8

9

assert getNthFib(8) == 13

10

assert getNthFib(9) == 21

11

assert getNthFib(10) == 34

12

assert getNthFib(11) == 55

13

assert getNthFib(12) == 89

14

assert getNthFib(13) == 144

15

assert getNthFib(14) == 233

16

assert getNthFib(15) == 377

17

assert getNthFib(16) == 610

18

assert getNthFib(17) == 987

19

assert getNthFib(18) == 1597

20

assert getNthFib(19) == 2584

21

assert getNthFib(20) == 4181

22

assert getNthFib(21) == 6765

23

assert getNthFib(22) == 10946

24

assert getNthFib(23) == 17711

25

assert getNthFib(24) == 28657

26

assert getNthFib(25) == 46368

27

assert getNthFib(26) == 75025

28

assert getNthFib(27) == 121393

29

assert getNthFib(28) == 196418

30

assert getNthFib(29) == 317811

31

assert getNthFib(30) == 514135

32

assert getNthFib(31) == 832060

33

assert getNthFib(32) == 1346205

34

assert getNthFib(33) == 2178308

35

assert getNthFib(34) == 3524554

36

assert getNthFib(35) == 5699057

37

assert getNthFib(36) == 9227465

38

assert getNthFib(37) == 14700653

39

assert getNthFib(38) == 23783782

40

assert getNthFib(39) == 38556803

41

assert getNthFib(40) == 62335585

42

assert getNthFib(41) == 100891738

43

assert getNthFib(42) == 163127363

44

assert getNthFib(43) == 264985141

45

assert getNthFib(44) == 428112504

46

assert getNthFib(45) == 693097645

47

assert getNthFib(46) == 1121300149

48

assert getNthFib(47) == 1814407794

49

assert getNthFib(48) == 2935717943

50

assert getNthFib(49) == 4751435747

51

assert getNthFib(50) == 7708233491

52

assert getNthFib(51) == 12469663495

53

assert getNthFib(52) == 20180153776

54

assert getNthFib(53) == 32650817271

55

assert getNthFib(54) == 52830971047

56

assert getNthFib(55) == 85481788328

57

assert getNthFib(56) == 138312759375

58

assert getNthFib(57) == 223794547703

59

assert getNthFib(58) == 362107307078

60

assert getNthFib(59) == 585801854781

61

assert getNthFib(60) == 947909161859

62

assert getNthFib(61) == 1533711016640

63

assert getNthFib(62) == 2481620178499

64

assert getNthFib(63) == 4015331195149

65

assert getNthFib(64) == 6496951373648

66

assert getNthFib(65) == 10512282568797

67

assert getNthFib(66) == 17009233942445

68

assert getNthFib(67) == 27521516511242

69

assert getNthFib(68) == 44530750453687

70

assert getNthFib(69) == 72052157174931

71

assert getNthFib(70) == 116582807628618

72

assert getNthFib(71) == 188634964793549

73

assert getNthFib(72) == 305217772422167

74

assert getNthFib(73) == 493852737215716

75

assert getNthFib(74) == 799060509637883

76

assert getNthFib(75) == 1292913246853599

77

assert getNthFib(76) == 2091973756491482

78

assert getNthFib(77) == 3384887003345081

79

assert getNthFib(78) == 5476860759836563

80

assert getNthFib(79) == 8861747863181644

81

assert getNthFib(80) == 14338608623018207

82

assert getNthFib(81) == 23200356486199851

83

assert getNthFib(82) == 37538965109218058

84

assert getNthFib(83) == 60739321595417865

85

assert getNthFib(84) == 98278286704635923

86

assert getNthFib(85) == 159017608299853781

87

assert getNthFib(86) == 257295894904489704

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assert getNthFib(87) == 416313503204343485

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assert getNthFib(88) == 673609398108833189

90

assert getNthFib(89) == 1089922901313176674

91

assert getNthFib(90) == 1763532299421909863

92

assert getNthFib(91) == 2853455190735086537

93

assert getNthFib(92) == 4616987489156996400

94

assert getNthFib(93) == 7470442679892082937

95

assert getNthFib(94) == 12087430169049079337

96

assert getNthFib(95) == 19557872848941162274

97

assert getNthFib(96) == 31645303017990241611

98

assert getNthFib(97) == 51203175866931403885

99

assert getNthFib(98) == 82848478884921645496

100

assert getNthFib(99) == 134051654751913049381

101

assert getNthFib(100) == 216900133636834694877

102

assert getNthFib(101) == 350951788388747744258

103

assert getNthFib(102) == 567851922025582439135

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assert getNthFib(103) == 918753610414330183393

105

assert getNthFib(104) == 1486605532440912622528

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assert getNthFib(105) == 2405359142855242805921

107

assert getNthFib(106) == 3901964675296155428449

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assert getNthFib(107) == 6297323818151398234370

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assert getNthFib(108) == 10199288493447553662819

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assert getNthFib(114) == 184969340959109583571608

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assert getNthFib(115) == 300050267997496103595811

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assert getNthFib(116) == 485019608956605684167419

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assert getNthFib(126) == 60069509936994691588669896

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assert getNthFib(136) == 7622624412641380459722229789

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assert getNthFib(138) == 20059916430371311481971134904

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assert getNthFib(144) == 360078049536666501444397997672

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assert getNthFib(160) == 814656994753065488046920927200693

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assert getNthFib(161) == 1322109107418043614735998991055227

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assert getNthFib(162) == 2136766102171109002782919918255920

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assert getNthFib(165) == 9254516521349414237819757736878214

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assert getNthFib(166) == 15050157833109675858121596564445281

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assert getNthFib(172) == 270688183991221100038138816952814365

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assert getNthFib(173) == 437361969262845578082170377902767683

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assert getNthFib(182) == 33598306581158024195816090561047910978

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assert getNthFib(183) == 54363065409910416951410798565751113867

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assert getNthFib(184) == 88961371991068441147226889126799024845

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assert getNthFib(185) == 143324437399978858098637687692550138712

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assert getNthFib(196) == 29169425204747256828307020152012408984933

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assert getNthFib(198) == 76420366152567526290490273405635773581209

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assert getNthFib(199) == 123670307090387795752673526659259138177485

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assert getNthFib(200) == 200140673242955322043163800064894911758694

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assert getNthFib(201) == 323811380333343117795837326724154050936139

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assert getNthFib(202) == 523951953576298440038991126789048962694833

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assert getNthFib(203) == 847763334910641557834828453513203013630972

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assert getNthFib(205) == 2219478623407581555708649033815455090956777

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assert getNthFib(206) == 3591193911894521553582469614117706067282582

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assert getNthFib(207) == 5802387835292103109291118647933161158239359

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assert getNthFib(208) == 9493581746586624662873588262050867225521941

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assert getNthFib(209) == 15295963581878727772164706909984028383761299

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assert getNthFib(210) == 24789545328465352435038295172034895609283240

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assert getNthFib(211) == 40085508910344080207203002081018923993044539

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assert getNthFib(212) == 64875054238809432642241297253053819602327779

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assert getNthFib(213) == 105960563149153512849444299334072743595372318

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assert getNthFib(214) == 170835617387962945491685596587126563297700097

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assert getNthFib(217) == 724327978462195862173945788429525177083844927

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assert getNthFib(219) == 1906287754849471128180707269367376224358462371

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assert getNthFib(220) == 3078247531236746394187468750305227271633079815

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assert getNthFib(221) == 5006535282473417522367175999672603495991541586

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assert getNthFib(222) == 8084782813709163916554644749977830767624621401

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assert getNthFib(223) == 13091318096182581438921820749650434263616162987

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assert getNthFib(224) == 21176090909891745355476465499628265031240784388

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assert getNthFib(225) == 34277408906074326794408286249278709294856947375

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assert getNthFib(226) == 55453500815966072150884751748906974326103931763

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assert getNthFib(227) == 90730901631930398945293038008185683652207863538

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assert getNthFib(228) == 146184402443866471096177789757092658078311795301

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assert getNthFib(229) == 236915304075802869041470827765278341730519648602

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assert getNthFib(230) == 383099706519669340137648617522370999808831443903

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assert getNthFib(231) == 629299413039372189279119445287649341539343092505

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assert getNthFib(232) == 1012399129558941529416768062809920241348174526408

234

assert getNthFib(233) == 1641698259098313718695887508097569582887517552811

235

assert getNthFib(234) == 2654097418657255248112655570907500124235692079214

2