Autora: Laura Oliveira Ribeiro

Link para o código fonte: **https://github.com/Lauraolv/Trabalho-de-AEDS3**

*Resolvendo o Problema do Labirinto*

Para cada arquivo de labirinto abordado apresente o caminho do início até a saída e o tempo de execução em segundos para obter a resposta:

Maze3

Nós encontrados: [7, 8, 9, 10, 17, 24, 25, 26, 33, 40, 41]

O caminho válido: [(1, 0), (1, 1), (1, 2), (1, 3), (2, 3), (3, 3), (3, 4), (3, 5), (4, 5), (5, 5), (5, 6)]

Tempo de execução para encontrar o caminho: 0.0010 segundos

Tempo de execução para resolver o problema a partir da leitura do arquivo: 0.0069 segundos

Maze10

Nós encontrados: [21, 22, 43, 64, 65, 66, 67, 68, 69, 70, 91, 112, 133, 154, 155, 156, 135, 114, 93, 72, 51, 30, 31, 32, 33, 34, 35, 36, 37, 38, 59, 80, 101, 122, 123, 124, 145, 166, 187, 208, 229, 250, 271, 292, 313, 334, 333, 332, 353, 374, 395, 416, 417, 418, 419]

O caminho válido: [(1, 0), (1, 1), (2, 1), (3, 1), (3, 2), (3, 3), (3, 4), (3, 5), (3, 6), (3, 7), (4, 7), (5, 7), (6, 7), (7, 7), (7, 8), (7, 9), (6, 9), (5, 9), (4, 9), (3, 9), (2, 9), (1, 9), (1, 10), (1, 11), (1, 12), (1, 13), (1, 14), (1, 15), (1, 16), (1, 17), (2, 17), (3, 17), (4, 17), (5, 17), (5, 18), (5, 19), (6, 19), (7, 19), (8, 19), (9, 19), (10, 19), (11, 19), (12, 19), (13, 19), (14, 19), (15, 19), (15, 18), (15, 17), (16, 17), (17, 17), (18, 17), (19, 17), (19, 18), (19, 19), (19, 20)]

Tempo de execução para encontrar o caminho: 0.00199 segundos

Tempo de execução para resolver o problema a partir da leitura do arquivo: 0.01865 segundos

Maze20

Nós encontrados: [41, 42, 83, 124, 165, 206, 207, 208, 209, 210, 169, 128, 87, 46, 47, 48, 49, 50, 51, 52, 93, 134, 175, 216, 217, 218, 219, 220, 261, 302, 301, 300, 341, 382, 423, 464, 465, 466, 425, 384, 385, 386, 387, 388, 347, 306, 307, 308, 349, 390, 391, 392, 433, 474, 515, 556, 557, 558, 559, 560, 601, 642, 641, 640, 681, 722, 763, 804, 805, 806, 807, 808, 809, 810, 851, 892, 891, 890, 931, 972, 973, 974, 975, 976, 1017, 1058, 1059, 1060, 1061, 1062, 1063, 1064, 1105, 1146, 1187, 1228, 1269, 1310, 1351, 1392, 1433, 1474, 1515, 1556, 1597, 1638, 1639]

O caminho válido: [(1, 0), (1, 1), (2, 1), (3, 1), (4, 1), (5, 1), (5, 2), (5, 3), (5, 4), (5, 5), (4, 5), (3, 5), (2, 5), (1, 5), (1, 6), (1, 7), (1, 8), (1, 9), (1, 10), (1, 11), (2, 11), (3, 11), (4, 11), (5, 11), (5, 12), (5, 13), (5, 14), (5, 15), (6, 15), (7, 15), (7, 14), (7, 13), (8, 13), (9, 13), (10, 13), (11, 13), (11, 14), (11, 15), (10, 15), (9, 15), (9, 16), (9, 17), (9, 18), (9, 19), (8, 19), (7, 19), (7, 20), (7, 21), (8, 21), (9, 21), (9, 22), (9, 23), (10, 23), (11, 23), (12, 23), (13, 23), (13, 24), (13, 25), (13, 26), (13, 27), (14, 27), (15, 27), (15, 26), (15, 25), (16, 25), (17, 25), (18, 25), (19, 25), (19, 26), (19, 27), (19, 28), (19, 29), (19, 30), (19, 31), (20, 31), (21, 31), (21, 30), (21, 29), (22, 29), (23, 29), (23, 30), (23, 31), (23, 32), (23, 33), (24, 33), (25, 33), (25, 34), (25, 35), (25, 36), (25, 37), (25, 38), (25, 39), (26, 39), (27, 39), (28, 39), (29, 39), (30, 39), (31, 39), (32, 39), (33, 39), (34, 39), (35, 39), (36, 39), (37, 39), (38, 39), (39, 39), (39, 40)]

Tempo de execução para encontrar o caminho: 0.00499 segundos

Tempo de execução para resolver o problema a partir da leitura do arquivo: 0.038350 segundos

Maze30

Nós encontrados: [61, 62, 63, 64, 65, 66, 127, 188, 189, 190, 251, 312, 313, 314, 253, 192, 193, 194, 255, 316, 377, 438, 499, 560, 621, 682, 681, 680, 741, 802, 863, 924, 985, 1046, 1045, 1044, 1043, 1042, 1103, 1164, 1163, 1162, 1101, 1040, 1039, 1038, 1099, 1160, 1221, 1282, 1343, 1404, 1405, 1406, 1407, 1408, 1347, 1286, 1287, 1288, 1349, 1410, 1471, 1532, 1531, 1530, 1591, 1652, 1713, 1774, 1835, 1896, 1957, 2018, 2079, 2140, 2201, 2262, 2263, 2264, 2265, 2266, 2267, 2268, 2269, 2270, 2271, 2272, 2273, 2274, 2335, 2396, 2397, 2398, 2337, 2276, 2277, 2278, 2279, 2280, 2281, 2282, 2283, 2284, 2285, 2286, 2287, 2288, 2289, 2290, 2291, 2292, 2231, 2170, 2171, 2172, 2111, 2050, 2049, 2048, 1987, 1926, 1865, 1804, 1803, 1802, 1741, 1680, 1619, 1558, 1497, 1436, 1375, 1314, 1315, 1316, 1255, 1194, 1133, 1072, 1011, 950, 951, 952, 1013, 1074, 1135, 1196, 1257, 1318, 1379, 1440, 1501, 1562, 1563, 1564, 1565, 1566, 1567, 1568, 1569, 1570, 1571, 1572, 1511, 1450, 1389, 1328, 1327, 1326, 1265, 1204, 1203, 1202, 1141, 1080, 1079, 1078, 1017, 956, 957, 958, 897, 836, 837, 838, 899, 960, 961, 962, 963, 964, 903, 842, 843, 844, 845, 846, 907, 968, 969, 970, 1031, 1092, 1153, 1214, 1275, 1336, 1397, 1458, 1519, 1580, 1641, 1702, 1763, 1824, 1823, 1822, 1883, 1944, 1943, 1942, 1881, 1820, 1819, 1818, 1817, 1816, 1877, 1938, 1937, 1936, 1875, 1814, 1813, 1812, 1873, 1934, 1995, 2056, 2117, 2178, 2239, 2300, 2299, 2298, 2359, 2420, 2421, 2422, 2483, 2544, 2605, 2666, 2667, 2668, 2607, 2546, 2547, 2548, 2549, 2550, 2551, 2552, 2613, 2674, 2675, 2676, 2737, 2798, 2799, 2800, 2861, 2922, 2983, 3044, 3105, 3166, 3165, 3164, 3225, 3286, 3347, 3408, 3409, 3410, 3411, 3412, 3413, 3414, 3475, 3536, 3535, 3534, 3595, 3656, 3657, 3658, 3659]

O caminho válido: [(1, 0), (1, 1), (1, 2), (1, 3), (1, 4), (1, 5), (2, 5), (3, 5), (3, 6), (3, 7), (4, 7), (5, 7), (5, 8), (5, 9), (4, 9), (3, 9), (3, 10), (3, 11), (4, 11), (5, 11), (6, 11), (7, 11), (8, 11), (9, 11), (10, 11), (11, 11), (11, 10), (11, 9), (12, 9), (13, 9), (14, 9), (15, 9), (16, 9), (17, 9), (17, 8), (17, 7), (17, 6), (17, 5), (18, 5), (19, 5), (19, 4), (19, 3), (18, 3), (17, 3), (17, 2), (17, 1), (18, 1), (19, 1), (20, 1), (21, 1), (22, 1), (23, 1), (23, 2), (23, 3), (23, 4), (23, 5), (22, 5), (21, 5), (21, 6), (21, 7), (22, 7), (23, 7), (24, 7), (25, 7), (25, 6), (25, 5), (26, 5), (27, 5), (28, 5), (29, 5), (30, 5), (31, 5), (32, 5), (33, 5), (34, 5), (35, 5), (36, 5), (37, 5), (37, 6), (37, 7), (37, 8), (37, 9), (37, 10), (37, 11), (37, 12), (37, 13), (37, 14), (37, 15), (37, 16), (37, 17), (38, 17), (39, 17), (39, 18), (39, 19), (38, 19), (37, 19), (37, 20), (37, 21), (37, 22), (37, 23), (37, 24), (37, 25), (37, 26), (37, 27), (37, 28), (37, 29), (37, 30), (37, 31), (37, 32), (37, 33), (37, 34), (37, 35), (36, 35), (35, 35), (35, 36), (35, 37), (34, 37), (33, 37), (33, 36), (33, 35), (32, 35), (31, 35), (30, 35), (29, 35), (29, 34), (29, 33), (28, 33), (27, 33), (26, 33), (25, 33), (24, 33), (23, 33), (22, 33), (21, 33), (21, 34), (21, 35), (20, 35), (19, 35), (18, 35), (17, 35), (16, 35), (15, 35), (15, 36), (15, 37), (16, 37), (17, 37), (18, 37), (19, 37), (20, 37), (21, 37), (22, 37), (23, 37), (24, 37), (25, 37), (25, 38), (25, 39), (25, 40), (25, 41), (25, 42), (25, 43), (25, 44), (25, 45), (25, 46), (25, 47), (24, 47), (23, 47), (22, 47), (21, 47), (21, 46), (21, 45), (20, 45), (19, 45), (19, 44), (19, 43), (18, 43), (17, 43), (17, 42), (17, 41), (16, 41), (15, 41), (15, 42), (15, 43), (14, 43), (13, 43), (13, 44), (13, 45), (14, 45), (15, 45), (15, 46), (15, 47), (15, 48), (15, 49), (14, 49), (13, 49), (13, 50), (13, 51), (13, 52), (13, 53), (14, 53), (15, 53), (15, 54), (15, 55), (16, 55), (17, 55), (18, 55), (19, 55), (20, 55), (21, 55), (22, 55), (23, 55), (24, 55), (25, 55), (26, 55), (27, 55), (28, 55), (29, 55), (29, 54), (29, 53), (30, 53), (31, 53), (31, 52), (31, 51), (30, 51), (29, 51), (29, 50), (29, 49), (29, 48), (29, 47), (30, 47), (31, 47), (31, 46), (31, 45), (30, 45), (29, 45), (29, 44), (29, 43), (30, 43), (31, 43), (32, 43), (33, 43), (34, 43), (35, 43), (36, 43), (37, 43), (37, 42), (37, 41), (38, 41), (39, 41), (39, 42), (39, 43), (40, 43), (41, 43), (42, 43), (43, 43), (43, 44), (43, 45), (42, 45), (41, 45), (41, 46), (41, 47), (41, 48), (41, 49), (41, 50), (41, 51), (42, 51), (43, 51), (43, 52), (43, 53), (44, 53), (45, 53), (45, 54), (45, 55), (46, 55), (47, 55), (48, 55), (49, 55), (50, 55), (51, 55), (51, 54), (51, 53), (52, 53), (53, 53), (54, 53), (55, 53), (55, 54), (55, 55), (55, 56), (55, 57), (55, 58), (55, 59), (56, 59), (57, 59), (57, 58), (57, 57), (58, 57), (59, 57), (59, 58), (59, 59), (59, 60)]

Tempo de execução para encontrar o caminho: 0.007995 segundos

Tempo de execução para resolver o problema a partir da leitura do arquivo: 0.084918 segundos

Maze40

Nós encontrados: [81, 82, 83, 84, 85, 86, 167, 248, 329, 410, 411, 412, 413, 414, 415, 416, 417, 418, 337, 256, 257, 258, 339, 420, 501, 582, 663, 744, 825, 906, 987, 1068, 1069, 1070, 1071, 1072, 1073, 1074, 1155, 1236, 1235, 1234, 1233, 1232, 1231, 1230, 1311, 1392, 1393, 1394, 1475, 1556, 1637, 1718, 1719, 1720, 1721, 1722, 1803, 1884, 1883, 1882, 1881, 1880, 1961, 2042, 2123, 2204, 2285, 2366, 2365, 2364, 2445, 2526, 2525, 2524, 2605, 2686, 2687, 2688, 2689, 2690, 2691, 2692, 2611, 2530, 2531, 2532, 2533, 2534, 2615, 2696, 2697, 2698, 2779, 2860, 2941, 3022, 3021, 3020, 3101, 3182, 3181, 3180, 3179, 3178, 3177, 3176, 3175, 3174, 3255, 3336, 3417, 3498, 3579, 3660, 3659, 3658, 3739, 3820, 3901, 3982, 3983, 3984, 4065, 4146, 4227, 4308, 4389, 4470, 4471, 4472, 4473, 4474, 4555, 4636, 4717, 4798, 4799, 4800, 4881, 4962, 4961, 4960, 5041, 5122, 5203, 5284, 5285, 5286, 5287, 5288, 5207, 5126, 5127, 5128, 5209, 5290, 5371, 5452, 5453, 5454, 5455, 5456, 5457, 5458, 5377, 5296, 5297, 5298, 5299, 5300, 5219, 5138, 5057, 4976, 4977, 4978, 5059, 5140, 5141, 5142, 5223, 5304, 5305, 5306, 5307, 5308, 5309, 5310, 5311, 5312, 5313, 5314, 5395, 5476, 5477, 5478, 5479, 5480, 5481, 5482, 5483, 5484, 5485, 5486, 5405, 5324, 5243, 5162, 5161, 5160, 5159, 5158, 5077, 4996, 4915, 4834, 4835, 4836, 4837, 4838, 4839, 4840, 4759, 4678, 4679, 4680, 4761, 4842, 4843, 4844, 4845, 4846, 4847, 4848, 4849, 4850, 4931, 5012, 5011, 5010, 5091, 5172, 5253, 5334, 5415, 5496, 5577, 5658, 5659, 5660, 5661, 5662, 5743, 5824, 5825, 5826, 5907, 5988, 5989, 5990, 6071, 6152, 6153, 6154, 6235, 6316, 6397, 6478, 6479]

Tempo de execução para encontrar o caminho: 0.01099 segundos

O caminho válido:[(1, 0), (1, 1), (1, 2), (1, 3), (1, 4), (1, 5), (2, 5), (3, 5), (4, 5), (5, 5), (5, 6), (5, 7), (5, 8), (5, 9), (5, 10), (5, 11), (5, 12), (5, 13), (4, 13), (3, 13), (3, 14), (3, 15), (4, 15), (5, 15), (6, 15), (7, 15), (8, 15), (9, 15), (10, 15), (11, 15), (12, 15), (13, 15), (13, 16), (13, 17), (13, 18), (13, 19), (13, 20), (13, 21), (14, 21), (15, 21), (15, 20), (15, 19), (15, 18), (15, 17), (15, 16), (15, 15), (16, 15), (17, 15), (17, 16), (17, 17), (18, 17), (19, 17), (20, 17), (21, 17), (21, 18), (21, 19), (21, 20), (21, 21), (22, 21), (23, 21), (23, 20), (23, 19), (23, 18), (23, 17), (24, 17), (25, 17), (26, 17), (27, 17), (28, 17), (29, 17), (29, 16), (29, 15), (30, 15), (31, 15), (31, 14), (31, 13), (32, 13), (33, 13), (33, 14), (33, 15), (33, 16), (33, 17), (33, 18), (33, 19), (32, 19), (31, 19), (31, 20), (31, 21), (31, 22), (31, 23), (32, 23), (33, 23), (33, 24), (33, 25), (34, 25), (35, 25), (36, 25), (37, 25), (37, 24), (37, 23), (38, 23), (39, 23), (39, 22), (39, 21), (39, 20), (39, 19), (39, 18), (39, 17), (39, 16), (39, 15), (40, 15), (41, 15), (42, 15), (43, 15), (44, 15), (45, 15), (45, 14), (45, 13), (46, 13), (47, 13), (48, 13), (49, 13), (49, 14), (49, 15), (50, 15), (51, 15), (52, 15), (53, 15), (54, 15), (55, 15), (55, 16), (55, 17), (55, 18), (55, 19), (56, 19), (57, 19), (58, 19), (59, 19), (59, 20), (59, 21), (60, 21), (61, 21), (61, 20), (61, 19), (62, 19), (63, 19), (64, 19), (65, 19), (65, 20), (65, 21), (65, 22), (65, 23), (64, 23), (63, 23), (63, 24), (63, 25), (64, 25), (65, 25), (66, 25), (67, 25), (67, 26), (67, 27), (67, 28), (67, 29), (67, 30), (67, 31), (66, 31), (65, 31), (65, 32), (65, 33), (65, 34), (65, 35), (64, 35), (63, 35), (62, 35), (61, 35), (61, 36), (61, 37), (62, 37), (63, 37), (63, 38), (63, 39), (64, 39), (65, 39), (65, 40), (65, 41), (65, 42), (65, 43), (65, 44), (65, 45), (65, 46), (65, 47), (65, 48), (65, 49), (66, 49), (67, 49), (67, 50), (67, 51), (67, 52), (67, 53), (67, 54), (67, 55), (67, 56), (67, 57), (67, 58), (67, 59), (66, 59), (65, 59), (64, 59), (63, 59), (63, 58), (63, 57), (63, 56), (63, 55), (62, 55), (61, 55), (60, 55), (59, 55), (59, 56), (59, 57), (59, 58), (59, 59), (59, 60), (59, 61), (58, 61), (57, 61), (57, 62), (57, 63), (58, 63), (59, 63), (59, 64), (59, 65), (59, 66), (59, 67), (59, 68), (59, 69), (59, 70), (59, 71), (60, 71), (61, 71), (61, 70), (61, 69), (62, 69), (63, 69), (64, 69), (65, 69), (66, 69), (67, 69), (68, 69), (69, 69), (69, 70), (69, 71), (69, 72), (69, 73), (70, 73), (71, 73), (71, 74), (71, 75), (72, 75), (73, 75), (73, 76), (73, 77), (74, 77), (75, 77), (75, 78), (75, 79), (76, 79), (77, 79), (78, 79), (79, 79), (79, 80)]

Tempo de execução para resolver o problema a partir da leitura do arquivo: 0.0902788 segundos

Maze50

Nós encontrados: [101, 102, 203, 304, 405, 506, 607, 708, 809, 910, 1011, 1112, 1113, 1114, 1115, 1116, 1015, 914, 915, 916, 917, 918, 1019, 1120, 1221, 1322, 1323, 1324, 1425, 1526, 1525, 1524, 1625, 1726, 1727, 1728, 1729, 1730, 1831, 1932, 2033, 2134, 2235, 2336, 2437, 2538, 2639, 2740, 2739, 2738, 2839, 2940, 2941, 2942, 3043, 3144, 3245, 3346, 3347, 3348, 3449,3550, 3651, 3752, 3751, 3750, 3851, 3952, 4053, 4154, 4255, 4356, 4457, 4558, 4557, 4556, 4455, 4354, 4353, 4352, 4453, 4554, 4655, 4756, 4857, 4958, 4957, 4956, 5057, 5158, 5159, 5160, 5261, 5362, 5463, 5564, 5665, 5766, 5867, 5968, 6069, 6170, 6271, 6372, 6473, 6574, 6675, 6776, 6775, 6774, 6875, 6976, 7077, 7178, 7179, 7180, 7181, 7182, 7081, 6980, 6981, 6982, 6983, 6984, 6985, 6986, 6987, 6988, 6887, 6786, 6785, 6784, 6683, 6582, 6583, 6584, 6483, 6382, 6383, 6384, 6283, 6182, 6081, 5980, 5879, 5778, 5779, 5780, 5781, 5782, 5681, 5580, 5479, 5378, 5377, 5376, 5275, 5174, 5073, 4972, 4973, 4974, 5075, 5176, 5177, 5178, 5179, 5180, 5281, 5382, 5383, 5384, 5485, 5586, 5587, 5588, 5589, 5590, 5691, 5792, 5793, 5794, 5693, 5592, 5593, 5594, 5695, 5796, 5797, 5798, 5697, 5596, 5597, 5598, 5599, 5600, 5601, 5602, 5603, 5604, 5503, 5402, 5301, 5200, 5201, 5202, 5303, 5404, 5405, 5406, 5305, 5204, 5205, 5206, 5105, 5004, 5005, 5006, 5007, 5008, 5009, 5010, 5111, 5212, 5213, 5214, 5215, 5216, 5317, 5418, 5419, 5420, 5421, 5422, 5523, 5624, 5625, 5626, 5627, 5628, 5527, 5426, 5325, 5224, 5225, 5226, 5227, 5228, 5229, 5230, 5331, 5432, 5433, 5434, 5435, 5436, 5537, 5638, 5637, 5636, 5635, 5634, 5735, 5836, 5835, 5834, 5935, 6036, 6137, 6238, 6237, 6236, 6337, 6438, 6539, 6640, 6639, 6638, 6637, 6636, 6635, 6634, 6735, 6836, 6835, 6834, 6935, 7036, 7037, 7038, 7139, 7240, 7241, 7242, 7343, 7444, 7545, 7646, 7647, 7648, 7749, 7850, 7851, 7852, 7953, 8054, 8055, 8056, 8057, 8058, 8159, 8260, 8361, 8462, 8463, 8464, 8565, 8666, 8667, 8668, 8769, 8870, 8871, 8872, 8873, 8874, 8875, 8876, 8877, 8878, 8879, 8880, 8779, 8678, 8679, 8680, 8681, 8682, 8683, 8684, 8785, 8886, 8885, 8884, 8985, 9086, 9085, 9084, 9185, 9286, 9287, 9288, 9389, 9490, 9591, 9692, 9793, 9894, 9893, 9892, 9993, 10094, 10095, 10096, 10097, 10098, 10099]

O caminho válido: [(1, 0), (1, 1), (2, 1), (3, 1), (4, 1), (5, 1), (6, 1), (7, 1), (8, 1), (9, 1), (10, 1), (11, 1), (11, 2), (11, 3), (11, 4), (11, 5), (10, 5), (9, 5), (9, 6), (9, 7), (9, 8), (9, 9), (10, 9), (11, 9), (12, 9), (13, 9), (13, 10), (13, 11), (14, 11), (15, 11), (15, 10), (15, 9), (16, 9), (17, 9), (17, 10), (17, 11), (17, 12), (17, 13), (18, 13), (19, 13), (20, 13), (21, 13), (22, 13), (23, 13), (24, 13), (25, 13), (26, 13), (27, 13), (27, 12), (27, 11), (28, 11), (29, 11), (29, 12), (29, 13), (30, 13), (31, 13), (32, 13), (33, 13), (33, 14), (33, 15), (34, 15), (35, 15), (36, 15), (37, 15), (37, 14), (37, 13), (38, 13), (39, 13), (40, 13), (41, 13), (42, 13), (43, 13), (44, 13), (45, 13), (45, 12), (45, 11), (44, 11), (43, 11), (43, 10), (43, 9), (44, 9), (45, 9), (46, 9), (47, 9), (48, 9), (49, 9), (49, 8), (49, 7), (50, 7), (51, 7), (51, 8), (51, 9), (52, 9), (53, 9), (54, 9), (55, 9), (56, 9), (57, 9), (58, 9), (59, 9), (60, 9), (61, 9), (62, 9), (63, 9), (64, 9), (65, 9), (66, 9), (67, 9), (67, 8), (67, 7), (68, 7), (69, 7), (70, 7), (71, 7), (71, 8), (71, 9), (71, 10), (71, 11), (70, 11), (69, 11), (69, 12), (69, 13), (69, 14), (69, 15), (69, 16), (69, 17), (69, 18), (69, 19), (68, 19), (67, 19), (67, 18), (67, 17), (66, 17), (65, 17), (65, 18), (65, 19), (64, 19), (63, 19), (63, 20), (63, 21), (62, 21), (61, 21), (60, 21), (59, 21), (58, 21), (57, 21), (57, 22), (57, 23), (57, 24), (57, 25), (56, 25), (55, 25), (54, 25), (53, 25), (53, 24), (53, 23), (52, 23), (51, 23), (50, 23), (49, 23), (49, 24), (49, 25), (50, 25), (51, 25), (51, 26), (51, 27), (51, 28), (51, 29), (52, 29), (53, 29), (53, 30), (53, 31), (54, 31), (55, 31), (55, 32), (55, 33), (55, 34), (55, 35), (56, 35), (57, 35), (57, 36), (57, 37), (56, 37), (55, 37), (55, 38), (55, 39), (56, 39), (57, 39), (57, 40), (57, 41), (56, 41), (55, 41), (55, 42), (55, 43), (55, 44), (55, 45), (55, 46), (55, 47), (55, 48), (55, 49), (54, 49), (53, 49), (52, 49), (51, 49), (51, 50), (51, 51), (52, 51), (53, 51), (53, 52), (53, 53), (52, 53), (51, 53), (51, 54), (51, 55), (50, 55), (49, 55), (49, 56), (49, 57), (49, 58), (49, 59), (49, 60), (49, 61), (50, 61), (51, 61), (51, 62), (51, 63), (51, 64), (51, 65), (52, 65), (53, 65), (53, 66), (53, 67), (53, 68), (53, 69), (54, 69), (55, 69), (55, 70), (55, 71), (55, 72), (55, 73), (54, 73), (53, 73), (52, 73), (51, 73), (51, 74), (51, 75), (51, 76), (51, 77), (51, 78), (51, 79), (52, 79), (53, 79), (53, 80), (53, 81), (53, 82), (53, 83), (54, 83), (55, 83), (55, 82), (55, 81), (55, 80), (55, 79), (56, 79), (57, 79), (57, 78), (57, 77), (58, 77), (59, 77), (60, 77), (61, 77), (61, 76), (61, 75), (62, 75), (63, 75), (64, 75), (65, 75), (65, 74), (65, 73), (65, 72), (65, 71), (65, 70), (65, 69), (66, 69), (67, 69), (67, 68), (67, 67), (68, 67), (69, 67), (69, 68), (69, 69), (70, 69), (71, 69), (71, 70), (71, 71), (72, 71), (73, 71), (74, 71), (75, 71), (75, 72), (75, 73), (76, 73), (77, 73), (77, 74), (77, 75), (78, 75), (79, 75), (79, 76), (79, 77), (79, 78), (79, 79), (80, 79), (81, 79), (82, 79), (83, 79), (83, 80), (83, 81), (84, 81), (85, 81), (85, 82), (85, 83), (86, 83), (87, 83), (87, 84), (87, 85), (87, 86), (87, 87), (87, 88), (87, 89), (87, 90), (87, 91), (87, 92), (87, 93), (86, 93), (85, 93), (85, 94), (85, 95), (85, 96), (85, 97), (85, 98), (85, 99), (86, 99), (87, 99), (87, 98), (87, 97), (88, 97), (89, 97), (89, 96), (89, 95), (90, 95), (91, 95), (91, 96), (91, 97), (92, 97), (93, 97), (94, 97), (95, 97), (96, 97), (97, 97), (97, 96), (97, 95), (98, 95), (99, 95), (99, 96), (99, 97), (99, 98), (99, 99), (99, 100)]

Tempo de execução para encontrar o caminho: 0.30655 segundos

Tempo de execução para resolver o problema a partir da leitura do arquivo: 1.03459 segundos