

**Autor(es):** Caio Henrique Ferreira Pereira **Matrícula:** 20.2.8091

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**Link para o código fonte:**

[https://github.com/riguedes/TP1\\_AEDS-III](https://github.com/riguedes/TP1_AEDS-III)

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### **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:**

O caminho encontrado para o arquivo maze3.txt é:

(1, 0), (1, 1), (1, 2), (1, 3), (2, 3), (3, 3), (3, 4), (3, 5), (4, 5), (5, 5), (5, 6).

O tempo de execução foi: 0.0022073 segundos

#### **Maze10:**

O caminho encontrado para o arquivo maze10.txt é:

(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) .

O tempo de execução foi: 0.0059171 segundos

#### **Maze20:**

O caminho encontrado para o arquivo maze20.txt é:

(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) .

O tempo de execução foi: 0.0111992 segundos.

### **Maze30:**

O caminho encontrado para o arquivo maze30.txt é:

(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).

O tempo de execução foi: 0.0346327 segundos.

### **Maze40:**

O caminho encontrado para o arquivo maze40.txt é:

(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) .

O tempo de execução foi: 0.0203946 segundos.

### **Maze50:**

O caminho encontrado para o arquivo maze50.txt é:

(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) .

O tempo de execução foi: 0.0511386 segundos.