



**Tecnológico  
de Monterrey**

**Instituto Tecnológico de Estudios Superiores Monterrey**

**CAMPUS QUERÉTARO**

**Análisis y diseño de algoritmos avanzados**

Ramona Fuénte Valdéz

Grupo 602

**Actividad 1.6 Implementación de la técnica de programación "backtracking" y  
"ramificación y poda"**

**PRESENTAN**

Rodrigo Terán Hernández

A01704108

Fecha:  
10/09/2023

# Backtracking

## Casos de prueba

### Prueba 1

- M: 4
- N: 5

```
A16_Backtracking_Individual > tests > test1.txt
1 4
2 5
3 1 0 1 1 1
4 1 1 1 0 1
5 1 0 1 1 1
6 1 1 1 0 1
7
```

PROBLEMS OUTPUT DEBUG CONSOLE SQL CONSOLE TERMINAL

```
● rodrigoteranhernandez@MacBook-Pro-de-Rodrigo A16_Backtracking_Individual % sh scripts/run.sh
1 0 0 0 0
1 0 0 0 0
1 0 1 1 1
1 1 1 0 1
○ rodrigoteranhernandez@MacBook-Pro-de-Rodrigo A16_Backtracking_Individual %
```

### Prueba 2

- M: 6
- N: 6

```
A16_Backtracking_Individual > tests > test2.txt
1 6
2 6
3 1 1 1 1 0 1
4 1 1 0 1 1 1
5 1 0 0 1 0 1
6 1 1 0 1 0 1
7 0 1 0 1 1 1
8 1 1 1 1 0 1
9
```

PROBLEMS OUTPUT DEBUG CONSOLE SQL CONSOLE: MESSAGES TERMINAL

```
● rodrigoteranhernandez@MacBook-Pro-de-Rodrigo A16_Backtracking_Individual % sh scripts/run.sh
1 0 0 0 0 0
1 0 0 0 0 0
1 0 0 0 0 0
1 1 0 0 0 0
0 1 0 1 1 1
0 1 1 1 0 1
○ rodrigoteranhernandez@MacBook-Pro-de-Rodrigo A16_Backtracking_Individual %
```

## Prueba 3

- M: 4
- N: 4

```
A16_Backtracking_Individual > tests > test3.txt
1 4
2 4
3 1 0 0 1
4 1 1 1 0
5 0 1 1 1
6 1 0 0 1
7
```

PROBLEMS OUTPUT DEBUG CONSOLE SQL CONSOLE: MESSAGES TERMINAL

```
● rodrigoteranhernandez@MacBook-Pro-de-Rodrigo A16_Backtracking_Individual % sh scripts/run.sh
1 0 0 0
1 1 0 0
0 1 1 1
0 0 0 1
○ rodrigoteranhernandez@MacBook-Pro-de-Rodrigo A16_Backtracking_Individual %
```

## Prueba 4

- M: 7
- N: 9

```
A16_Backtracking_Individual > tests > test4.txt
1 7
2 9
3 1 1 0 1 1 1 1 1 0
4 0 1 1 1 0 0 0 1 1
5 1 1 0 1 1 1 1 1 0
6 1 0 0 0 1 1 0 1 1
7 1 1 0 1 1 0 0 0 1
8 0 1 0 1 0 1 0 0 1
9 1 1 1 1 0 1 1 0 1
```

PROBLEMS OUTPUT DEBUG CONSOLE SQL CONSOLE: MESSAGES TERMINAL

```
● rodrigoteranhernandez@MacBook-Pro-de-Rodrigo A16_Backtracking_Individual % sh scripts/run.sh
1 1 0 0 0 0 0 0 0
0 1 0 0 0 0 0 0 0
1 1 0 0 0 1 1 1 0
1 0 0 0 1 1 0 1 1
1 1 0 1 1 0 0 0 1
0 1 0 1 0 0 0 0 1
0 1 1 1 0 0 0 0 1
○ rodrigoteranhernandez@MacBook-Pro-de-Rodrigo A16_Backtracking_Individual %
```

# Casos de prueba extremos

## Prueba 1

- Cuando “M” o “N” no son valores enteros positivos

```
A16_Backtracking_Individual > tests > test1.txt
1  -4
2  5
3  1 0 1 1 1
4  1 1 1 0 1
5  1 0 1 1 1
6  1 1 1 0 1
7
```

PROBLEMS OUTPUT DEBUG CONSOLE SQL CONSOLE: MESSAGES TERMINAL

```
● rodrigoteranhernandez@MacBook-Pro-de-Rodrigo A16_Backtracking_Individual % sh scripts/run.sh
The size of the labyrinth needs to be valid
○ rodrigoteranhernandez@MacBook-Pro-de-Rodrigo A16_Backtracking_Individual %
```

## Prueba 2

- Cuando la solución no existe

```
A16_Backtracking_Individual > tests > test1.txt
1  3
2  3
3  1 0 1
4  1 0 1
5  1 0 1
6
```

PROBLEMS OUTPUT DEBUG CONSOLE SQL CONSOLE: MESSAGES TERMINAL

```
● rodrigoteranhernandez@MacBook-Pro-de-Rodrigo A16_Backtracking_Individual % sh scripts/run.sh
Solution doesn't exist
○ rodrigoteranhernandez@MacBook-Pro-de-Rodrigo A16_Backtracking_Individual %
```

## Prueba 3

- Cuando los caracteres de la matriz no son “1” o “0”.

```
A16_Backtracking_Individual > tests > test1.txt
1  3
2  3
3  1 2 2
4  r 4 e
5  f 5 3
6
```

PROBLEMS OUTPUT DEBUG CONSOLE SQL CONSOLE: MESSAGES TERMINAL

```
● rodrigoteranhernandez@MacBook-Pro-de-Rodrigo A16_Backtracking_Individual % sh scripts/run.sh
The labyrinth can only have 1's or 0's as cell's values
○ rodrigoteranhernandez@MacBook-Pro-de-Rodrigo A16_Backtracking_Individual %
```