Algorithmics	Student information	Date	Number of session
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Activity 1. Backtracking with graphs

n	t Backtracking (ms)
20	0.080467
25	0.178919
30	0.32252
35	0.41224
40	0.899015
45	2.014633
50	9.117259
55	2.94463
60	47.619499
65	11.25175
70	17.012901
75	110.366254
80	162.678025

The theoretical complexity of the **NullPath** algorithm is **O(n!)**, since in the worst case, the backtracking explores all possible permutations of paths. However, several factors significantly reduce the actual growth in practical scenarios:

- Random Graph Generation (Luck Factor):
  - As we generate several random graphs in some of them, there is no easy path, so we need to check more paths in order to get the exact solution.
- Pruning Heuristic:
  - The pruning step reduces the number of branches explored by eliminating paths that **cannot** reach a valid solution within the given constraints.

Finally, this **NullPath algorithm** is O(n!) but improved, to reduce the time in each iteration. And with it the average case.