

64.0 How to quickly remember what these are

* Hamilton cycles is a type of efficiency algorithm for the travelling salesperson problem.

They are interested in visiting a list of cities, i.e. vertices
not in using all of the various combinations of roads in between! (edges)

They are based in a 'head office' in one of the cities,
so their start and end points coincide: a closed path, i.e. a tour.

The 'problem' aspect concerns doing this "efficiently",
and bureaucrats / shareholders / the public "deem" this to mean, in particular,
not going through any city twice: a cycle.

So there is interest in cycles through all vertices: Hamilton cycles.

[Not all travelling salesperson problems "deem" this, some care solely about cost,
or about speed of completion of the tour, a combination of both...
So Hamilton cycles are relevant to a simple - and quite archetypal - model.]

* Euler circuits arose from the 'bridges of Königsberg' walking game
This involves - ending where we start: a closed walk i.e. a trail
- going over each bridge precisely once,
so the interest is now in using every edge just once, a circuit:

circuits using each edge precisely once

→ graphical and practical problems are of this type?