Let a "polyarc" be a path composed of quarter circular arcs, and a polyarc-configuration be a placement of polyarcs on an $n \times m$ grid such that no part of a polyarc is inside another polyarc.

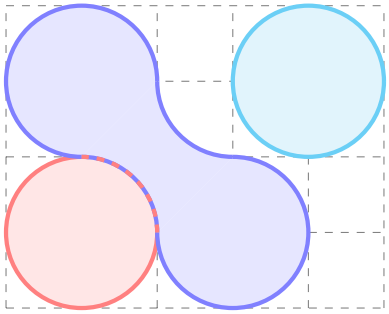

Figure 1: An example of a polyarc-configuration

Question. How many such polyarc-configurations exist on the $n \times m$ grid?

Related.

1. What if polyarcs can be inside other polyarcs?
2. What if all polyarcs must be tangent to another polyarc?
3. With if the polyarc-configuration must be connected?
4. What configuration gives maximum area for the entire polyarc-configuration?
5. Can this be done on a triangular/hexagonal grid with 1/3 or 1/6 arcs?
6. How many different non-self-intersecting 4-robot walks can fit inside of an $n \times m$ grid? Self-intersecting?
7. What if instead of quarter circles, boxes were made with diagonal line segments?
8. Is there a nice multi-dimensional analog?

References.

Problem 69.

Roundominoes by Kate Jones