# How can we formulate the TSP as a global path problem?

* The state positions are paths of cities that we want to extend into a path that is a cycle.
* Initial state is an empty path.
* First add 1 city, then the next, and so on.
* Weight would be the distance between the 2 cities.
* Like a local formulation.
* Each state has a memory of a partial tour.
* Solution is sum of distances to goal node.
* Another local search
  + Tour 1: x1,x2,x3,x4,x5
  + Tour 2: x1,x4,x3,x2,x5
* Can’t revisit a city
* Triangle inequality does not necessarily hold
  + C >= A+B may not hold