# SIMULATED ANNEALING ALGORITHM

RECALL: We want to minimize a function on a state space

```
currState = random initial state
repeat many times:
    propState = random transition from currState      (proposed transition)
    dFunc = f(propState) - f(currState)
    rho = exp(-dFunc/sig2)
    accept the proposed transition with probability rho
    decrease sig2 a little bit
output currState
```

f = function that we want to minimize

# DISTANCE FUNCTIONS FOR TRAVELING SALESPERSON PROBLEM

```
distPair(tour, i, j):
    # compute the distance from the ith point to the jth point
        along the tour
    x1 = points[tour[i], 0]
    y1 = ....
```

```
distTour(tour):
    # add up distances along the entire tour
        dist. from tour[0] to tour[1]
        + dist from tour[1] to tour[2]
        + ... + dist. from tour[N-2] to tour[N-1]
        + dist. from tour[N-1] to tour[0]
```