

## Algorithm 2: Greedy Approach to Hamiltonian Problem

### *Pseudocode:*

Problem: finding the best starting city to make a round trip given distance, mpg, and fuel

Input: distance (arr int), fuel (arr int), mpg (int)

Output: best starting city

Constraints: valid ints (no negatives), total fuel from all cities must cover the journey, must be a circular route

FUNCTION findStartingCity(distance, fuel, mpg)

  Int n = distance.size

  Int total\_fuel = 0

  Int current\_fuel = 0

  For I from 0 to n-1:

    Calculate total fuel for one round trip

  If total\_fuel < 0:

    Return -1

  For I from 0 to n-1:

    Calculate total fuel for one round trip

    If total\_fuel < 0

      Start with the next city

Reset fuel to 0

Return starting city