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CS32

Goober Eats : Report

Big-O:

StreetMap:

* Load()
  + If the mapdata.txt file has N geo-coordinates, and each geo-coordinate is associated with S street segments on average, load() is **O(N \* S).**
* getSegmentsThatsStartWith()
  + getSegmentsThatStartWith() is **constant**. This function utilizes the ExpandableHashMap and finds the value of a starting GeoCoord key, which is **O(1)** time-complexity.

PointToPointRouter:

* generatePointToPointRoute()
  + If the StreetMap holds N geo-coordinates, and each geo-coordinate is associated with S street segments on average, generatePointToPointRoute() is **O(N + S).** Breadth first search has O(V + E) time complexity , V (vertices), E (edges).

DeliveryOptimizer:

* optimizeDeliveryOrder()
  + If the delivery list holds P deliveries, optimizeDeliveryOrder() is **O( P! \* logP!).**
    - We run through each permutation and push onto the minheap P! times, each push rearranges the heap which is logP! Time complexity.