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Project 4 report

Big-oh reports:

1. Mymap class
   1. Associate function

It is using a binary search tree to associate. If the value is greater then go right else if the value is less, then go left. so the O(logN)

* 1. Find function

It is using the binary search tree to find a value. If the value is greater then go right else if the value is less, then go left. It is O(logN)

1. AttractionMapper class

a) init function

it is using a for loop so for the number of N segments then it will use the O(N). inside the loop for a segment that has A attraction then the O(A) times the associate O(logA) then it is O(AlogA). Overall, it is O(N+AlogA);

b)getGeocord funciton

For each attraction segment, it will use a find function to determine if it is exist. So it is O(logA)

1. segmentMapper
   1. init function

first is to get all the segments. There are A+N elements. Then use the insert function. That function is O(log(A+N)). Overall this function is O((A+N)\*log(A+N))

b)getsegment function

this function is using the find function which O(log(A+N)) for A+N segments. And then use a vector to hold all of them. Overall it is O(A+N).

1. Navigator function
   1. Navigate function

Using a loop to go through all the (A+N) segments. Inside the loop, we will use the priority queue data structure. And the associate function is O(log(A+N)). Vector push\_back function is O(1). Overall the function is O((A+N)\*log(A+N) )