

To improve the efficiency of mymalloc and myfree was to do coalescing. As I was freeing space I checked whether the previous node was also freed, if the free flag was 0, then i would merge the two nodes into one, then i would check if the next node was also free, if it was then i would merge the two. The reason to implement coalescing was to reduce the number of nodes the link list had to go through to find free nodes. At the same time making it also space efficient since merging. The Optimized version time efficiency was on average 3.465 faster than the unoptimized version, similarly space efficiency was on average 1.262. I was going to create a free list to improve even more on the time efficiency and decrease the number of nodes to loop, but i was unable to fix the case when free nodes coalesced.

Without Optimization

- 1) Time: 1395594.000000
Max heap extent: 39621978
- 2) Time: 1772134.000000
Max heap extent: 17019750
- 3) Time: 1823114.000000
Max heap extent: 36898818

average time: 1663614
average max heap extent: 31180182

With optimization

- 1)Time: 480956.000000
Max heap extent: 21921438
- 2)Time: 476356.000000
Max heap extent: 17836698
- 3)Time: 482678.000000
Max heap extent: 34311816

average time: 479996
average max heap extent: 24689984