

Recurring Section 6

Aniruth – 5 PM

Announcements

- Keep filling out the feedback form!
 - Feedback Form: <https://forms.gle/anpxMKNFTThCtYLz56>
 - Putting feedback on what you want me to cover/how I'm doing in the coverage helps us all!
- I'll give a quick review on disjoint sets. Many of you listed asymptotics, and since we're doing asymptotic questions on the worksheet, I figure that should be sufficient.
 - But I will still have a quick slide on it.
 - We will also do the extra problem (most likely) that is (in my opinion) very good for reviewing asymptotics.

Content Review

Disjoint Sets

- Different ways of connecting:
 - Keep track of sets, not connections (Quick Find)
 - Track set membership by recording parent # (Quick Union)
 - Might still be linear time
 - Union by size (Weighted Quick Union)
 - Important point: makes runtime logarithmic
 - Path Compression
 - Makes runtime amortized constant (the Ackermann function)

Asymptotics Confusion: What is O, Omega, and Theta?

- Big O is the upper bound and will always exist (at most).
- Big Omega is the lower bound and will always exist (at least).
- If tightest Big O and tightest Big Omega are the same (family of functions), then there exists a Big Theta.
- Bonus: Best and worst case assumptions can't include anything about the size of the input; it will always be approaching infinity in both cases.