Milestone 2
15-400, Spring 2018

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Major Changes

No major changes.

What You Have Accomplished So Far

- We've found a provably optimal greedy algorithm for determining the number of flexible disruptions needed to achieve a fairness ratio σ.

- The above algorithm leads to an upper bound of $\lceil \log t \rceil$ for the number of disruptions that can be saved by allowing disruptions to be flexible.

Meeting Your Milestone

I've made significant progress on this problem and met the milestone.

Surprises

Not too surprising but the original formulation of the flexible disruptions problem seemed harder to approach and probably had less nice results than the formulation I ended up focusing on.

Looking Ahead

Alex has been recently working on fair division in a setting where the number of players are fixed but items arrive in an online manner. Instead of the 2nd problem mentioned in the project proposal, I'm planning on looking into this problem and relating it to restricted disruptions.

Milestone Revisions

Because of the change mentioned above, I'm going to change my next milestone to:

February 14th Read up on progress made so far in the fixed players, arriving items setting. Find some possible problems to work on in this setting and try to find an allocation algorithm with provable bounds on fairness.

Resources Needed

No resources needed. I've found writing some simulations in Python useful for speculating and gaining intuition about the problems I've been working on.