Goals:
Prove polynomial time reduction from 3SAT to HamPath

Announcements:
Go/middhacks2022
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Questions
Will the algorithm try to solve for all possible satisfying assignments or just one?
The 3SAT Solver should output YES if there is at least 1 satisfying assignment. It technically does not find the assignment.

What is the non-polynomial runtime for each of 3SAT and HamPath?
Both can be solved in exponential time (test all possible assignments/all possible paths)

Is there a way to reduce gadget graphs any more?
Maybe, but it might make the proof of correctness more difficult. Our goal is just polynomial time. We don't care if it is $n^2$ or $n^{10}$.

Are there cases when making a visual proof is more functional than what we've done before with the boxes?
The box diagrams are not descriptive enough. But we can use pictures or pseudocode to describe the algorithm.

Is there also a known way to solve Hamiltonian path using 3SAT?
Yes - 3SAT is NP-hard

Do we use graph gadgets once we get to more complex graphs?
This gadget is only used to turn 3SAT problems into HamPath problems. If you already have a HamPath problem of some complex graph, there is no need to convert.

13s: Dijkstra's Algorithm
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