

6.892

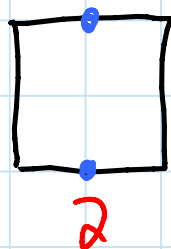
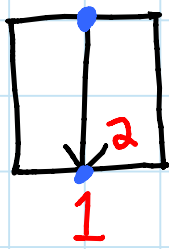
Class 8

Apr. 3, 2019

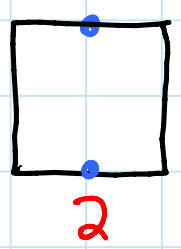
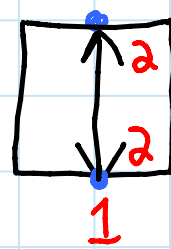
Recall: Bounded 2-player Motion Planning [C7]

Characterization: 2-player motion planning with DAG gadgets is PSPACE-complete iff some gadget is nontrivial: has ≥ 1 transition
 [Demaine, Hendrickson, Lynch - arXiv 2018]

Examples:



&



Single-use 1-way

Single-use 2-way

Characterization: team motion planning with DAG gadgets is NEXPTIME-complete iff some gadget is nontrivial: has ≥ 1 transition
 [Demaine, Hendrickson, Lynch - arXiv 2018]

Partial

Characterization: 2-player/team motion planning is EXPTIME-complete/undecidable if some gadget is deterministic, reversible, and has interacting tunnels: traversal of some tunnel affects traversability of another tunnel
 (like unbounded 1-player characterization)