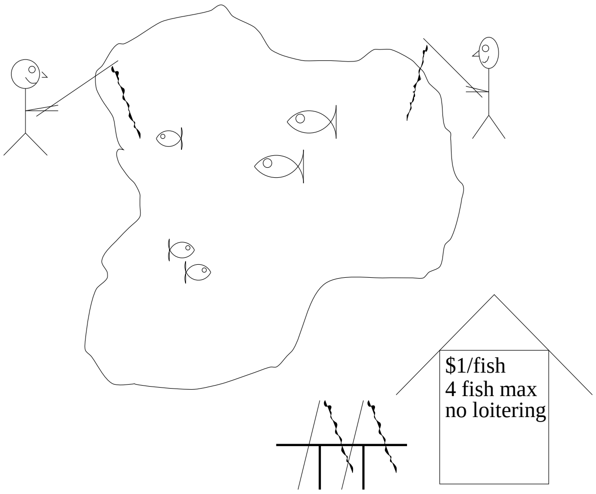
Fishing Applications



Issue: pole (i.e., processor) allocation

Goal

Maximize the number of fish caught per hour

- profit
- throughput

Possible pole allocation strategies:

- original policy: allocate 4 poles to an arriving fisherman
- static policy: allocate 2 poles to an arriving fisherman
- adaptive policy: allocate 1/2 of the remaining poles to an arriving fisherman
- dynamic policy:
  - if noone is there, allocate all poles to an arriving fisherman
  - upon arrival, take 1/2 of the poles away from the fisherman with the most poles
  - upon departure, distribute the free poles

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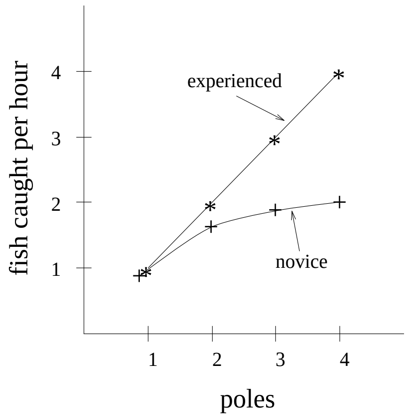
Assumptions

- 4 fishing poles (processors)
- fisherman interarrival time is 20 minutes (system load)
- 2 types of fishermen, novice and experienced, 50% each type (multi-class parallel program workload)
- fishing speedup curves:



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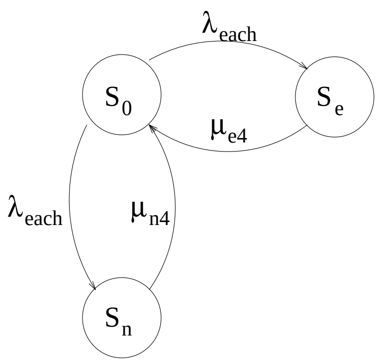
Original Policy



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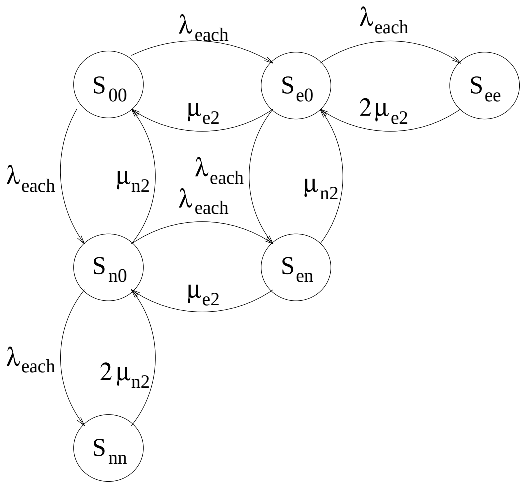
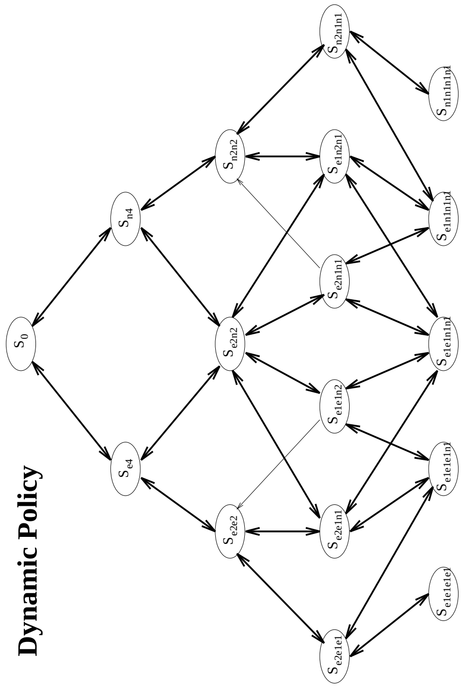
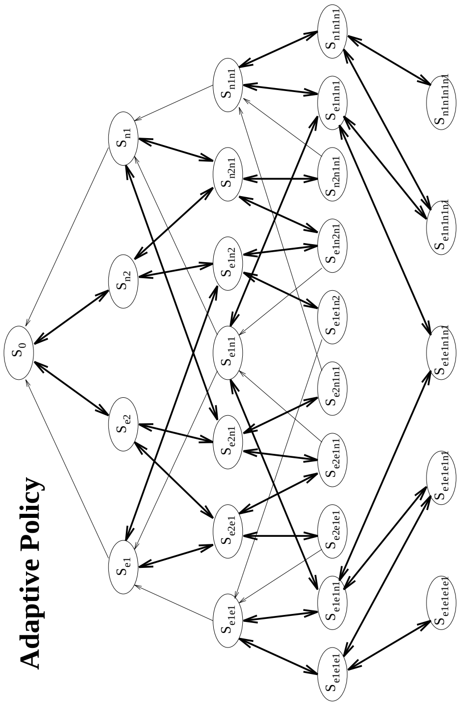
Static Policy



Dynamic Policy



Adaptive Policy



Final Comparison

Policy	Income
original	$ _____
static	$ _____
adaptive	$ _____
dynamic	$ _____

Homework assignment #2: verify the answers