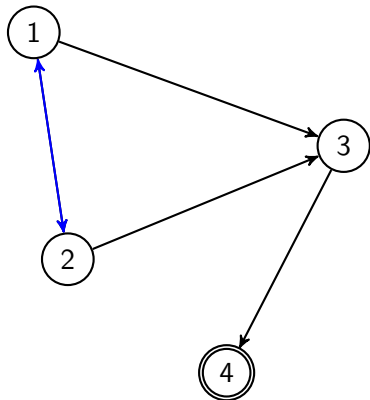
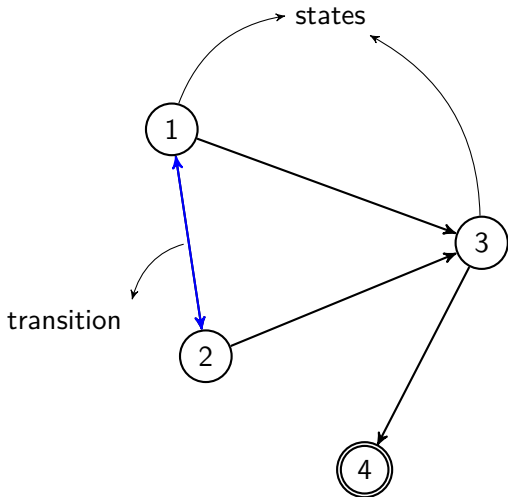


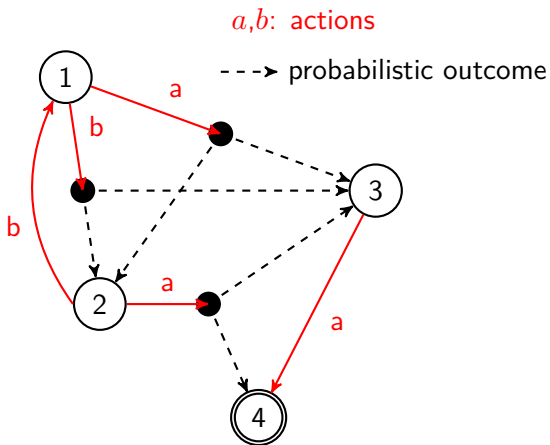
Transition Systems



Transition Systems

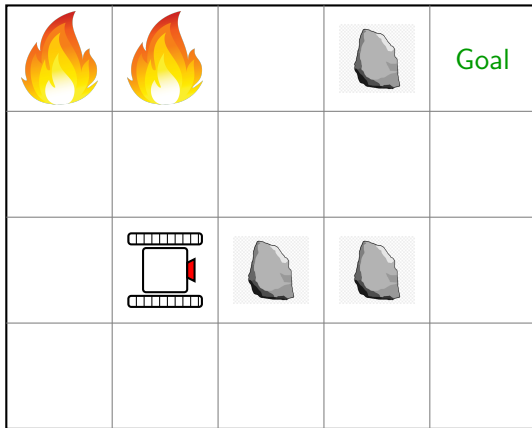


Finite State Markov Decision Process



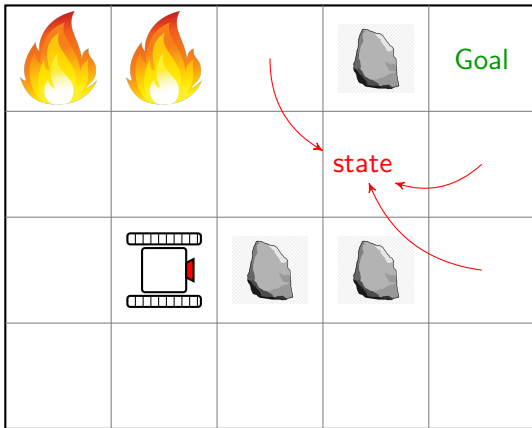
Sequential Decision Making

Basic Formulation: States, Actions, and Rewards.



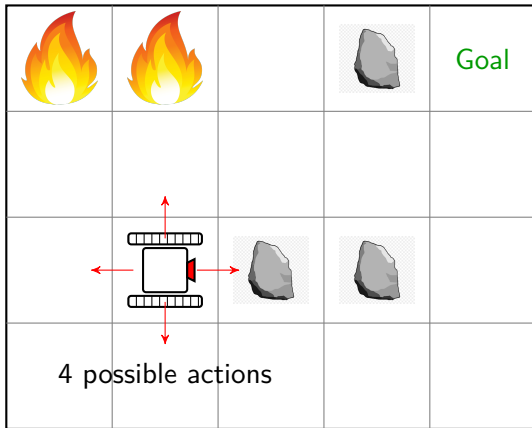
Sequential Decision Making

Basic Formulation: **States**, Actions, and Rewards.









Sequential Decision Making

Basic Formulation: States, **Actions**, and Rewards.









Sequential Decision Making

Basic Formulation: States, Actions, and Rewards.

| | | | | |
|---|---|---|---|---------------|
|  |  | |  -200 | Goal +1000 |
| | | | | |
| |  |  -200 |  -200 | |
| | | | | |




















Sequential Decision Making

Basic Formulation: States, Actions, and Rewards. Basic Problem: Identify **best action** in each state to collect rewards.

| | | | | |
|---|---|---|---|---------------|
|  |  | |  -200 | Goal +1000 |
| | → | → | → | ↑ |
| |  |  -200 |  -200 | |
| | | | | |




















Sequential Decision Making

Basic Formulation: States, Actions, and Rewards. Basic Problem: Identify **best action** in each state to collect rewards.

| | | | | |
|---|---|---|---|---|
|  |  |  |  | Goal +1000 |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |

Sequential Decision Making

Basic Formulation: States, Actions, and Rewards. Basic Problem: Identify **best action** in each state to collect rewards.

| | | | | |
|---|---|---|---|--|
|  |  |  |  | Goal +1000 |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |

Possibility of sideways slip **changes** the optimal policy.