Administration

- Homework #1 will be posted online today.

Decision Trees

- Decision trees provide a way of organizing decisions

Decision Trees

- Decision trees provide a way of organizing decisions
  - □ corresponds to choices.
  - ◯ corresponds to chance.
  - • corresponds to final outcome.
  - edges correspond to possible outcomes/choices.
  - Label percentages and costs on edges.

Decision Trees

- Decision trees provide a way of organizing decisions
  - □ corresponds to choices.
  - ◯ corresponds to chance.
  - • corresponds to final outcome.
  - edges correspond to possible outcomes/choices.
  - Label percentages and costs on edges.
- Work from right to left ("**Decision Rollback**")

Decision Trees

- Decision trees provide a way of organizing decisions
  - $\square$ corresponds to choices.
  - $\bigcirc$ corresponds to chance.
  - $\bullet$ corresponds to final outcome.
  - edges correspond to possible outcomes/choices.
  - Label percentages and costs on edges.
- Work from right to left ("**Decision Rollback**")
- Compute expected values of chance nodes

Decision Trees

- Decision trees provide a way of organizing decisions
    - □ corresponds to choices.
    - ◯ corresponds to chance.
    - • corresponds to final outcome.
    - edges correspond to possible outcomes/choices.
    - Label percentages and costs on edges.
- Work from right to left ("**Decision Rollback**")
- Compute expected values of chance nodes
- Compute expected values of decision nodes and eliminate bad choices

Airplane Tickets

- ▶ Airline is booking tickets for a flight with 30 seats.

Airplane Tickets

- Airline is booking tickets for a flight with 30 seats.
  - 10% chance everyone shows up.
  - 60% chance that one person misses the flight.
  - 30% chance that two people miss the flight.
  - Seats cost $100 each.
  - Displaced passenger costs airline $150.
- Decide whether the airline should sell 30, 31 or 32 tickets.

Airplane Tickets

- Airline is booking tickets for a flight with 30 seats.
    - 10% chance everyone shows up.
    - 60% chance that one person misses the flight.
    - 30% chance that two people miss the flight.
    - Seats cost $100 each.
    - Displaced passenger costs airline $150.
- Decide whether the airline should sell 30, 31 or 32 tickets.
- How are probabilities obtained?
- How repeatable is this scenario?

Groat's Disease

- See Handout

Groat's Disease

- See Handout
- How are probabilities obtained?

Groat's Disease

- See Handout
- How are probabilities obtained?
- How repeatable is this scenario?