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- The start node is the goal to be achieved.
- $goal(g)$ is true if g is a proposition that is true of the initial state.

Defining nodes and arcs

- A node g can be represented as a set of assignments of values to variables:

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  it must be consistent = have at most one value for each feature.

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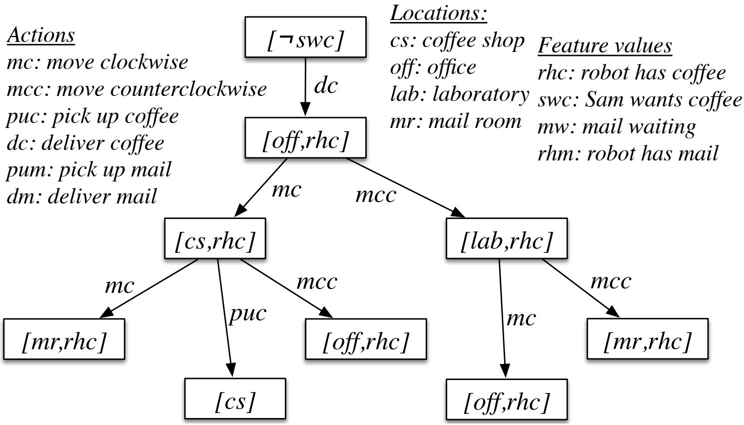
Regression example



Loop detection and multiple-path pruning

- Goal G_1 is simpler than goal G_2 if G_1 is a subset of G_2.
  - It is easier to solve $[cs]$ than $[cs, rhc]$.
- If you have a path to node N have already found a path to a *simpler* goal, you can prune the path N.

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  A heuristic function defined the cost of getting from a state to a (sub)goal. This is the same as a heuristic for the forward planner.
- You can use domain-specific knowledge to remove impossible goals, e.g.
  - It is often not obvious from an action description to conclude whether an agent can hold multiple items at any time.

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- Which is more efficient depends on:
  - The branching factor
  - How good the heuristics are
- Forward planning is unconstrained by the goal (except as a source of heuristics).
- Regression planning is unconstrained by the initial state (except as a source of heuristics)