Hierarchical Forms

- In which case, prompt for its slots
- Slot can refer to a form

Could make forms hierarchical

Hierarchical Forms

Domain Constraints

Hierarchical Form Filling
Optional Subforms

- Allow subforms as semantics of a slot.

Which slot to work on next?

- Do not alter domain data structures, like "topform".
- When slot value is attained, remove slot from agenda.
- When the top slot is a form, replace by slots of that form.
- Work on the top slot in Agenda.
- Agenda - list of slots to be filled.
- Keep a list of unfilled slots.

Hierarchical Forms

- Check for first unfilled slot in formslots.

Non-Hierarchical Forms

- Which slot to work on next?
Banking Example

Agenda Processing

• Hierarchical forms
  - Keep a list of unfilled slots
  - Agenda - list of slots to be filled
  - Work on the top slot in Agenda
  - Agenda - list of unfilled slots
• Should we add to beginning or end of Agenda?

Agenda Processing

Heredentical Forms
Incorporating Domain Knowledge

- Dialogue system not operating in a vacuum

- If system knows destination and origin of a trip, and there is only one flight a day, don’t bother asking for time

- Let designer designate slots as required or optional

- Dialogue system should take into account the backend

- Some backend system used in conjunction with a backend system to achieve

Overview
How to do sequence?

Finding Flights

• Build description of object
• If more than 5 objects match
  - Build description of object
  - If between 2 and 4 objects match
    - Or ask general question and build grammar for all missing items
    - Ask one of the optional items
  - If more than 5 objects match

Could be special type of frame, or special attribute of frame that
- Lists items and ask user to choose
- Each task is separate state
- Could use finite state model to do this
- Doesn’t really fit into form filling
- Could use a script data structure that spells out sequence
  - Each task is separate state
  - Could use finite state model to do this
  - Doesn’t really fit into form filling
  - Might even have a facility to add custom code