States and Transitions

Reservation Clerk

- Ready
  - @ new reservation request filled in form
  - @ form filled make reservation
  - later than 6:00 pm and Guest not registered and someone else wants room cancel reservation
  - Waiting for Form

Concurrency

Reservation Clerk

- Ready
  - @ cancel reservation cancel reservation
  - @ change reservation
    - Need Current Reservation
    - get reservation
  - Need New Information
  - get information
  - Have Reservation Information
  - update reservation
  - Have New Information
    - get information
Exceptions

Reservation Clerk

- Ready
- Waiting for Form
- Error Detected
- Report error, provide partially filled-in form
- Form not OK
- Form filled
- Make reservation
- Later than 6:00 pm and Guest not registered and someone else wants room, cancel reservation
- New reservation request filled-in form
- Cancel
- Cancel reservation

Priority Constraints

(template)

Proprietor

- At Work
- Repairs needed
- Ready to Work on Repairs
- Repair requested by Guest, do repair

- Tired of doing repairs
- Office work to do
- Do office work
- Do repair

- [c > a > b]
- [x > 70%, y > 30%]
Real-Time Constraints

High-Level State View – Exploded
High-Level State View – Imploded

Reservation Clerk

- @ cancel reservation
- cancel reservation
- Ready
- @ change reservation
- Obtaining Information
- update reservation

High-Level Transition View – Exploded

Proprietor

- At Work
- repairs needed
- work on repairs
- tired of doing repairs
- Ready to Work on Repairs
- repair requested by Guest
  - do repair
- repair on to-do list
  - do repair
High-Level Transition with Entry and Exit States

Behavior
Generalization/Specialization
Basic Interaction

Alerter Reservation Clerk → Proprietor

notification (Guest Name)

Input/Output Interactions

Reservation Clerk

("Please fill in the form.", Form)

form filled (Form)
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Two-Way Interaction

report error (Error, Form) -> (Form)

Reservation Clerk \( \rightarrow \) Person

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Continuous Interaction

(Time)

Reservation Clerk \( \rightarrow \) Clock
Broadcast Interaction

(Special Deal)

Proprietor \rightarrow List of Repeat Guests

TO Clause

("Your requested repair has been completed")

TO: Guest in Room 1
Interaction Sequence

Reservation Clerk

new reservation

("Fill in Form", Form)

form filled (Form)

("Your reservation has been made.")

Person

Active Object Interaction

Reservation Clerk

new reservation

request filled-in form

Waiting for Form

< 5 minutes

cancel

>= 5 minutes

give waiting message

("Fill in Form", Form)

< 2 seconds

@ form filled

make reservation

Wait

Error Detected

Error Detected

Form not OK

Person

report error

provide partially

filled-in form

Ready

< 5 minutes

< 2 seconds

[a TO b < 2 seconds]
Database Update Interactions

- Get Name and Address: \((\text{GuestNr}) \rightarrow (\text{Name, Address})\)
- Change Address: \((\text{GuestNr, Address})\)
- Add: \((\text{GuestNr, Name, Address})\)
- Remove: \((\text{GuestNr})\)

High-Level Interactions

- "Your requested repair has been completed."
- TO: Guest in Room 1
- Tell Guest: 
  - "Repair done, Room#"
  - "The repair you requested is done."
- TO: Guest in Room 1

- "Your requested repair has been completed."
- TO: Guest in Room 1
Real-Time Interactions

[< 30 minutes]

Proprietor → Guest

("Your requested repair has been completed")

TO: Guest in Room 1